preparing for life

Early Childhood Intervention

Assessing the Impact of *Preparing For Life* - Baseline Report

By the *PFL* Evaluation Team, UCD Geary Institute

UCD Geary Institute

preparing for life
planning together for our children

Preparing For Life:
Early Childhood Intervention

Assessing the Impact of
Preparing For Life - Baseline Report

EVALUATION OF THE *'Preparing For Life'*
EARLY CHILDHOOD INTERVENTION PROGRAMME

By
PFL EVALUATION TEAM AT THE UCD GEARY INSTITUTE
November, 2010

UCD Geary Institute

preparing for life
planning together for our children

Table of Contents

List of Tables

List of Figures

Acknowledgements

The *Preparing For Life* Team and the UCD Geary Institute would like to thank all those who participated and supported this research, especially the families participating in the *PFL* Progamme and Evaluation.

Preparing For Life would particularly like to thank the UCD Geary Institute Evaluation Team (Kelly McNamara, Carly Cheevers, Sarah Finnegan, and Louise McEntee), under the direction of Dr. Orla Doyle and the scientific advisory committee (Professor Colm Harmon, Professor James Heckman, Professor Cecily Kelleher, Professor Sharon Ramey, and Professor Richard Tremblay) for their work in bringing this report to life. The *PFL* Evaluation Team would also like to thank Caitriona Logue and Seong Moon for contributing to the report and Mark Hargaden, Fearghal O'hAodha, and Lori Timmins for their contributions to the development of the randomisation website and development and programming of the baseline survey. We would also like to thank Holles St. National Maternity Hospital, the Rotunda Maternity Hospital, and the DOMINO programme for their support of the project as well as their assistance in recruitment. Additionally, the *PFL* Evaluation Team would like to thank the Finglas Community Development Project for their qualitative assessment of and input regarding the identification of an appropriate comparison community catchment area and all local organisations, including Sphere 17, the Bell Building, Project West, and St. Helena's Resource Centre, who offered work space in which to conduct interviews with participants.

We would also like to thank our funders The Atlantic Philanthropies and the Office of the Minister for Children and Youth Affairs and acknowledge the advice and guidance given by staff of both organisations. We also thank our Expert Panel for their support and guidance.

Noel Kelly,

Manager, *Preparing For Life*

Executive Summary

The intergenerational transmission of socioeconomic inequalities in children's health, and cognitive, behavioural, and emotional development emerge early, and can persist throughout life (Najman et al., 2004; Shonkoff & Phillips, 2000). Evidence suggests that targeted, early intervention programmes aimed at disadvantaged children and their families are an effective means of reducing these inequalities. *Preparing For Life* (*PFL*) is a new preventative programme which aims to improve the life outcomes of children and families living in North Dublin, Ireland through a five year home visiting parenting programme. The programme is being evaluated by the UCD Geary Institute and aims to provide evidence on the effectiveness of such early interventions.

The *PFL* Programme is being evaluated using a mixed methods approach, incorporating a longitudinal experimental design and an implementation analysis. The experimental component involves the random allocation of participants from the *PFL* communities to either a low supports treatment group or a high supports treatment group for the duration of the five year programme. Both groups receive developmental toys, as well as access to preschool, public health workshops, and a support worker. Participants in the high treatment group also receive home visits from a trained mentor and have group parent training via the Triple P Positive Parenting Programme. The *PFL* treatment groups are also being compared to a 'services as usual' comparison group, who do not receive the *PFL* Programme. This comparison group displays similar socioeconomic demographics to the *PFL* participants, but does not receive any treatment.

The inclusion criteria for the *PFL* Programme were based on geographical residence and pregnancy status. In total, 233 women were recruited and randomised into the *PFL* Programme between January 2008 and August 2010. Randomisation resulted in 118 participants assigned to the low treatment group and 115 participants assigned to the high treatment group. In addition, 99 pregnant women were recruited into the comparison group. On average, *PFL* participants were 21.5 weeks pregnant when completing the baseline interview and comparison community participants were, on average, 25.2 weeks pregnant.

This first report of the *PFL* Impact Evaluation presents quantitative baseline information from the first wave of data collection. This report serves primarily as a description of the recruitment and randomisation procedures, as well as a description of the treatment and comparison groups and any baseline differences among them. As future waves of data collection are completed, the baseline data will be used to conduct longitudinal analyses relating baseline characteristics to future child outcomes and to examine the impact of the programme on changes in child and parent outcomes over time. The information presented in this report is based on maternal responses to the baseline interview.

Recruitment into the *PFL* Programme occurred through one of two sources: 1) in the maternity hospital or 2) in the community. Based on public health nurse records, the population-based recruitment rate for the *PFL* cohort, based on all live births during the recruitment phase, was 52%. Twenty two percent of pregnant women in the area were not identified in the recruitment phase and a further 26% were identified but could not be contacted for a final acceptance, or were contacted and refused to join the programme. The sample-based recruitment rate for the *PFL* cohort, based on all approached eligible participants during the recruitment phase, was 67%. The sample-based recruitment rate for the comparison community was 36%.

The analyses in this report are based on data from 205 *PFL* participants and 99 community comparison participants. The analyses test for baseline differences between the low and high *PFL* treatment groups and the aggregate *PFL* cohort and the comparison community across a wide range of parental and family characteristics and behaviours. In total, 117 measures were analysed for the low and high treatment groups and 109 measures were analysed for the aggregate *PFL* group and the comparison community. The low *PFL* treatment group and the high *PFL* treatment group did not statistically differ on 92% of these measures based on two-sided tests using the 10% significance level. Thus, this analysis indicates that the

randomisation process was successful. The aggregate *PFL* group and the comparison community did not statistically differ on 66% of these measures. However, measures where differences emerged suggest that the comparison community is a relatively higher socioeconomic status cohort. Details of these results are presented by chapter in Table ES.1.

Table ES.1 - Summary of Permutation Tests Examining Differences at Baseline by Chapter

	Number of Measures Not Significantly Different at Baseline	
Chapter	*PFL* Low – *PFL* High	*PFL* – Comparison Community
Chapter 4: Parental Demographics & Household SES	35/36	23/36
Chapter 5: Maternal Well-being & Personality	16/19	11/19
Chapter 6: Maternal Health & Pregnancy	28/29	20/29
Chapter 7: Thoughts About Parenting & Intentions for Baby	12/15	9/15
Chapter 8: Social Support	17/18	9/10
TOTAL NOT STATISTICALLY DIFFERENT	108/117 (92%)	72/109 (66%)

In addition to testing the degree of similarity of the three groups at baseline, this report also presents a detailed overview of the characteristics of the *PFL* Evaluation cohort. On average, mothers participating in the *PFL* programme are 25 years old, 18% are teenage mothers, and 52% are first-time mothers. The large majority (99%) are Irish, with 5% being Irish Travellers. Eighty-one percent of the cohort is in a relationship, with 16% indicating they are married. Additionally, 30% of mothers reported that their current pregnancy was planned. On average, 37% of mothers have a Junior Certificate qualification or lower, and 3% have a primary degree. Thirty-eight percent of mothers are in paid work, with 22% in full time employment. Fifty-five percent of the cohort are residing in social housing, 63% are in possession of a medical card, and 65% of families are in receipt of social welfare payments. In terms of mental health, 40% are experiencing poor well-being and 9% have been diagnosed with postnatal depression in a previous pregnancy. Eleven percent of mothers reported being in ill health, while 9% of the sample experience some type of long term chronic illness which limits their activity, 69% of these indicated a physical health condition, and 26% reported a mental health condition. In terms of substance use during pregnancy, 49% of the sample reported smoking, 28% reported drinking, and 2% reported using drugs while pregnant. Finally, 9% of the *PFL* cohort indicated a high risk for abusive parenting and neglect.

In sum, the baseline report concludes that the randomisation procedure used to assign participants to the *PFL* treatment groups was effective in ensuring few statistically significant differences between the high and low treatment groups prior to the delivery of the intervention. Thus, any observed differences between the groups concerning child and parent outcomes at future data collection waves may be causally linked to the *PFL* Programme. However, given the significant number of differences between the *PFL* cohort and the comparison community, any analysis of these groups in future reports will have to account for these important baseline differences.

Chapter One

Introduction and Background of *PFL* Impact Evaluation

1.1 Description and Objectives of the *PFL* Early Childhood Intervention

The intergenerational transmission of socioeconomic inequalities in children's health, and cognitive, behavioural, and emotional development emerge early, and can persist through life (Najman et al., 2004; Shonkoff & Phillips, 2000). Evidence suggests that targeted, early intervention programmes aimed at disadvantaged children and their families are an effective means of reducing these inequalities. *Preparing For Life* (*PFL*) is a new preventative programme which aims to improve the life outcomes of children and families living in North Dublin, Ireland. The programme is being evaluated by the UCD Geary Institute and aims to provide evidence on the effectiveness of such early interventions.

PFL is a community-led initiative operated by the Northside Partnership (NSP) in Dublin, Ireland. The programme is jointly funded by The Atlantic Philanthropies (AP) and The Office of the Minister for Children and Youth Affairs (OMCYA). The *PFL* Programme aims to improve levels of school readiness of young children living in several disadvantaged areas of North Dublin, by intervening during pregnancy and working with families until the children start school. It was developed based on the recognition that children from this area were lagging behind their peers in terms of both cognitive and non-cognitive skills at school entry. A representative survey assessing levels of school readiness of children aged four to five years old attending the primary schools in the *PFL* catchment areas found that teachers rated children in the *PFL* communities as displaying significantly lower levels of school readiness than a Canadian norm (*PFL* Evaluation Team, 2010) on the domains of physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge. Teacher ratings were lowest in the domains of language and cognitive development and communication and general knowledge, and approximately 30% of children scored in the lowest 10% of the cohort on at least one domain of school readiness. In addition, the school readiness capabilities of children living in this area appear to be consistent over time as the teachers indicated that less than 50% of children entering school in the *PFL* catchment area were definitely ready for school in 2004 (Murphy et al., 2004) and again in 2009 (*PFL* Evaluation Team, 2010). Collectively, this body of research highlights the need for a school readiness intervention in these communities. The purpose of the *PFL* Programme is to improve these low levels of school readiness by assisting parents in developing skills to help prepare their children for school. As such, *PFL* operates under a holistic definition of school readiness composed of five dimensions: 1) physical health and well-being; 2) socioemotional development; 3) approaches to learning; 4) language development and emergent literacy; and 5) cognition and general knowledge.

The inclusion criteria for the *PFL* Programme were based on geographical residence and pregnancy status, and include both primiparous and non-primiparous women. In total, 233 women from the *PFL* catchment area were recruited within the local community and from the maternity hospitals at their first booking visit. On recruitment, women were randomly assigned to either a low supports treatment group or a high supports treatment group. Families in both groups receive developmental toys annually and facilitated access to one-year of enhanced preschool in the local childcare centres. In addition, both groups are encouraged to attend public health workshops focusing on public health messages such as stress control and nutrition. Participants in the programme also have access to a *PFL* support worker who can help them access additional services if needed and they are given a directory of local services. Finally, both groups receive a framed photograph taken by a professional photographer, as well as newsletters and special occasion (e.g., birthday) cards.

Participants in the high treatment group receive two additional services. First, each family has a dedicated mentor who visits the home for between 30 minutes and two hours per week starting during pregnancy and continuing until the child is five years old. The aim of these weekly home visits is to support and help parents with key parenting issues using a set of *PFL* developed tip sheets. The mentoring involves building a good relationship with parents, providing them with high quality information, being responsive to issues that arise; and in these ways aims to enable parents to make informed choices and signpost them to other relevant services (*Preparing For Life* & The Northside Partnership, 2008). The mentors focus on five general areas related to child development: 1) pre-birth, 2) nutrition, 3) rest and routine, 4) cognitive and social development, and 5) mother and her supports. The *PFL* Programme is therefore similar to the Nurse-Family Partnership programme (Olds et al., 1999), however its duration extends to age five compared to age two. Second, participants in the high treatment group also participate in group parent training using the Triple *p* Positive Parenting programme (Sanders, Markie-Dadds, & Turner, 2003). This programme aims to improve positive parenting through the use of videos, vignettes, role play, and tip sheets in a group-based setting for seven consecutive weeks (two hours per week for first four weeks followed by two weeks of phone support and a final two hour group session on week seven). The Triple *p* programme has been subject to multiple rigorous evaluations which have demonstrated positive effects for both parents and children (Sanders, Markie-Dadds, Tully, & Bor, 2000).

1.2 Description and Objectives of the *PFL* Impact Evaluation

The *PFL* Programme is being evaluated by the UCD Geary Institute using a mixed methods approach, incorporating a longitudinal experimental design and an implementation analysis. Ethical approval for this study was provided by the University College Dublin's Human Research Ethics Committee and the Rotunda Hospital's Ethics Committee, and the National Maternity Hospital's Ethics Committee. The experimental component involves the random allocation of participants from the *PFL* communities to either a low or high supports treatment group for the duration of the five year programme. However, as the *PFL* Evaluation is not a classic randomised trial, as both groups receive some form of an intervention, the *PFL* treatment groups are also being compared to a 'services as usual' comparison group, who do not receive the *PFL* Programme. This comparison group was identified using quasi-experimental methods. Specifically, hierarchal cluster analysis was used to identify a community which ranked closely to the *PFL* community in terms of standard socio-demographics characteristics, but do not receive any treatment. Ninety-nine pregnant women were recruited from the comparison community to help gauge child developmental trajectories in the absence of an early childhood intervention and to facilitate comparisons with a 'services as usual' cohort.

The impact evaluation collects data on children's physical health and motor skills, social and emotional development, and behaviour, learning, literacy and language development, and the mother's pregnancy behaviours, physical and psychological health, cognitive ability, personality, and parenting skills from pregnancy onwards. Data are collected from all three groups at baseline (t0), and when the child is six months (t1), 12 months (t2), 18 months (t3), 24 months (t4), three years (t5), and four years (t6). In addition, maternal cognition was assessed between t0 and t1 using the Weschler Abbreviated Scale of Intelligence (WASI; Psychological Corporation, 1999). Although the mother is the primary informant in all waves of data collection, information is also obtained from fathers, the child, siblings, and other independent data sources, such as hospital records. The current report provides a description of maternal responses to the baseline interview.

Information presented in this report was obtained through face to face structured baseline interviews with *PFL* participants 1.4 weeks, on average, after recruitment and on the same day as recruitment for the comparison community. Interviews lasted approximately one to one and a half hours and were conducted using a Computer Assisted Personal Interviewing (CAPI) technique in which the interview was pre-programmed on a laptop computer to ensure accurate routing of questions and reduce errors associated with data entry. Although home interviews were encouraged, participants had the option of conducting the interview in her home or in a local community centre. The majority of both the *PFL* cohort (53%) and the comparison community (81%) completed the interview in their home. Each participant was given a €20 shopping voucher after the baseline interview was completed as a thank you for taking the time to complete the interview. In addition to the mother completed questionnaire, fathers were invited to complete a baseline interview, either face to face or by completing a questionnaire designed for self-completion. Thirty-three percent of fathers completed this interview or returned a self-complete questionnaire. Due to the relatively low number of father responses, this report will concentrate on maternal responses.

Parallel to this, an implementation evaluation is being conducted using a multi-sequenced design, integrating focus groups with *PFL* participants and semi-structured interviews with programme staff to assess programme implementation and fidelity. In addition, implementation data recorded by programme staff (using a Database Management System) are being tracked on an ongoing basis to measure programme participation and service provision. Future reports will link this qualitative information gained in the implementation evaluation to quantitative information obtained through the seven waves of data collection.

1.3 Aims and Overview of Baseline Report

This is the first report of the *PFL* Impact Evaluation and aims to present quantitative baseline information from the first wave of data collection. This report serves primarily as a description of the recruitment and randomisation procedures, as well as a description of the treatment and comparison groups and any baseline differences among them. As future waves of data collection are completed, the baseline data will be used to conduct longitudinal analyses relating baseline characteristics to future child outcomes and to examine the impact of the programme on changes in behaviour over time.

The information presented in this report is based on maternal reported responses to the baseline interview. Chapter Two reviews the recruitment process, including the population and sample based recruitment rates and attrition prior to intervention delivery. Chapter Three describes the methodology used in the analyses presented in the report. Chapters Four through Eight present descriptive statistics on the baseline characteristics of the sample and statistical comparisons of the low and high *PFL* treatment groups and the aggregate *PFL* treatment groups and the comparison community. Specifically, Chapter Four focuses on family demographics including personal characteristics, parental education, cognitive resources and employment status, household composition, and household material deprivation. Chapter Five presents information related to maternal well-being and personality, including previous indications of postnatal depression and measures of self-esteem, self-efficacy, maternal attachment style, and personality. Chapter Six describes maternal health across the lifespan and information related to the pregnancy. Chapter Seven describes thoughts about parenting and intentions for the newborn baby. Chapter Eight focuses on social support and maternal use of local services in the *PFL* communities. Each chapter concludes with a brief summary of the key findings presented in that chapter. Finally, Chapter Nine summarises the description of the cohort and comparisons between the low and high treatment groups, as well as between the aggregate *PFL* sample and the comparison community.

Chapter Two

Recruitment

2.1 *PFL* Catchment Area

Recruitment into the *PFL* Programme began in late January, 2008 in the North Dublin communities of Darndale, Moatview, Belcamp, Newtown Court, and the Traveller Community. Due to the relatively slow uptake rate within these communities, the *PFL* catchment area was expanded to include the areas of Ferrycarrig, Glin, and Greencastle in January 2009. A second expansion was initiated in late June 2009 to include additional communities in Dublin 17 and Dublin 5. An in-depth analysis of the demographic similarity of the proposed expansion areas was conducted prior to the addition of any community into the *PFL* catchment area. As illustrated in Table 2.1, the expansion areas were relatively similar to the original *PFL* catchment area on key socio-demographic characteristics. Additionally, all expansion areas were geographically close to the original *PFL* catchment area.

Enumeration Area (EA) level data from the 2006 Census indicate that the original *PFL* catchment area comprised 6,439 inhabitants, with 7% being born outside Ireland. Approximately 60% of the original catchment area were living in social housing, 16% were unemployed, and 5% had completed a third level education. The socio-demographics remained relatively similar when the two expansion areas were included. Specifically, the final *PFL* catchment area, including the two expansions, was composed of 15,384 inhabitants, of whom: 7% were born outside Ireland, 42% were living in social housing, 12% were unemployed, and 7% had completed a third level education. Of the 233 participants recruited into the *PFL* Programme, 172 (74%) are from the original catchment area, 39 (17%) are from the first expansion area, and 22 (9%) are from the second expansion area.

2.2 Comparison Community Catchment Area

Hierarchical cluster analysis was used to identify the degree of similarity between the community comparison group and the *PFL* treatment groups by calculating the Euclidean pairwise distance between communities. Small area population statistics (SAPS) from 2006 Census were used to rank all 322 communities in Dublin in terms of their closeness to the *PFL* community based on standard demographic and socioeconomic characteristics. Dissimilarity matrices showing the degree of similarity between communities were constructed, allowing comparisons of results across variable inputs. Although the selected comparison community area was similar to the *PFL* catchment area, it was not the closest ranking community. Several communities were more closely ranked to the *PFL* catchment area, but were already experiencing some form of early childhood intervention. Therefore, the selected comparison community was identified as it was the most similar socio-demographically community not receiving an early childhood intervention. While this quantitative approach provided suitable rankings based on statistical data, we cross-checked the reliability of the quantitative analysis with a qualitative approach. This involved bringing the quantitative analysis to local service providers in the comparison community to gauge the comparability of the selected catchment area. Figure 2.1 displays EA level data from the 2006 Census demonstrating that the comparison community consisted of 13,657 inhabitants, , of whom: 5% of were born outside Ireland, approximately 35% were living in social housing, 10% were unemployed, and 7% had completed a third level education. Thus the treatment and comparisons communities display relatively similar characteristics, apart from the level of social housing in the communities.

Table 2.1 - Figures Illustrating Socio-demographic Similarity of Catchment Areas

Measure	Original Catchment Area	1st Expansion (January, 2009)	2nd Expansion (June, 2009)	Combined *PFL* Areas	Comparison Community
Inhabitants	6439	3325	5620	15384	13657
Born Outside Ireland	7%	8%	6%	7%	5%
Social Housing	60%	29%	33%	42%	35%
Unemployment	16%	9%	8%	12%	10%
Third Level Education	5%	10%	7%	7%	7%

Source: Small Area Population Statistics, Census (2006).

2.3 Randomisation

2.3.1 Benefits of Randomisation

Randomised controlled trials (RCTs) are the gold standard methodology for evaluating the effectiveness of policies or interventions (Solomon, Cavanaugh, & Draine, 2009). The *PFL* Evaluation is a RCT, or a quantitative comparative assessment of various levels of treatments in which participants are randomly allocated to one of two treatment groups (Jadad, 1998). It has been argued that assigning participants to treatment groups wholly at random is the most effective way to maintain balance between two groups of individuals receiving different treatments (Burtless, 1995). Therefore, randomisation of *PFL* participants into the low or high treatment group is central to the evaluation design as it ensures an even distribution of baseline characteristics across each treatment group. Randomisation provides each participant with an equal opportunity of receiving either the low or high treatment and therefore, on average, the observed and unobserved characteristics of the participants should be distributed evenly across the two groups before the programme begins. This, in turn, allows investigators to effectively examine treatment effects over the course of the programme (Jadad, 1988). Randomisation of participants into treatment groups removes selection bias and provides a more reliable assessment of treatment effects (Burtless, 1995). By incorporating such random assignment into an evaluation, differences in observed outcomes may be causally linked to the programme being evaluated and provide strong quantitative evidence recognised to assess effectiveness (Solomon et al., 2009).

2.3.2 Description of Randomisation Process

PFL participants were randomised after written informed consent was obtained. An unconditional probability randomisation procedure presented each participant with an equal chance of being randomised into the low or high treatment group. After consenting to take part in the *PFL* Programme and Evaluation, the participant pressed a key on a computer which randomly allocated her treatment group assignment. The computerised randomisation programme created an array equal to the size of the number of people to be in the randomised group. In the case of the *PFL* Programme this array consisted of 250 possible *PFL* numbers populated with a one or zero. This array was then shuffled using a random number generator to randomly assign the numbers a location in the array. This process resulted in a list of ones and zeros where the numbers were in a random order and were written to a file one per line. As each participant clicked on the randomisation website they was assigned a one or zero which corresponded to the two treatment groups in the study and their *PFL* code was inserted beside the one or zero in the file.

To ensure randomisation was not compromised, once the participant pressed the key on a computer, an email was generated which included the participant's unique ID code and assignment condition. This email was automatically sent to the *PFL* programme manager and the *PFL* evaluation manager. If there were any attempts to reassign participants from one group to another, by either directly changing the database or repeating the randomisation procedure, a second email would automatically highlight this intentional subversion.

In total, 233 *PFL* participants were randomised, with 118 assigned to the low treatment group and 115 assigned to the high treatment group.

2.4 Recruitment Progression

Recruitment for the *PFL* cohort commenced in late January 2008 and finished in August 2010. A total of 233 *PFL* participants were recruited during this 32 month period, resulting in an average of just over seven new participants recruited per month. Recruitment of the comparison community began in September, 2008 and finished in September, 2010. During this 25 month period, a total of 99 comparison participants were recruited, resulting in an average of approximately four new recruits per month.

Figure 2.1 represents the number of new participants recruited each month throughout the recruitment phase. Participants from the *PFL* communities are indicated in blue and participants from the comparison community are indicated in green. Similarly, Figure 2.2 illustrates the progression of overall recruitment throughout the duration of the recruitment phase of the *PFL* Evaluation.

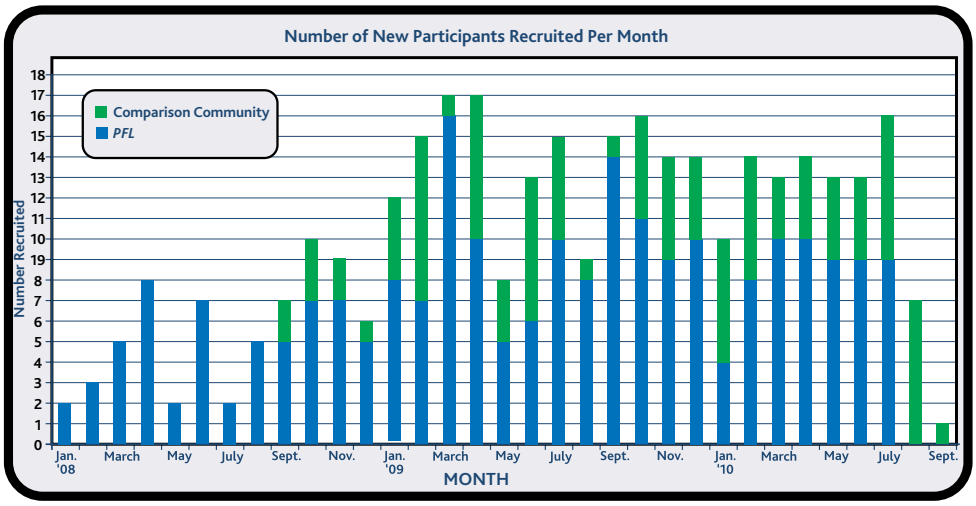

Figure 2.1. Number of participants recruited into the *PFL* Evaluation by month of recruitment.

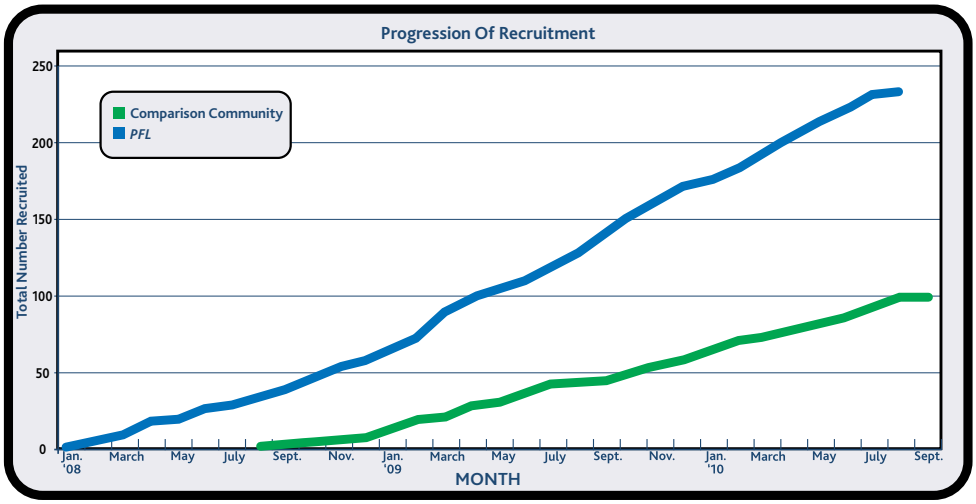

Figure 2.2. Aggregate total of participants recruited into the *PFL* Evaluation throughout the recruitment phase.

2.5 Recruitment Rate

Recruitment into the *PFL* Evaluation occured through one of two sources: in the maternity hospital or in the community. The *PFL* Evaluation gained ethical approval from two maternity hospitals to facilitate the recruitment process. This process involved meeting women at their first booking visit to describe *PFL* and gauge their interest in the programme. If a woman was interested, her contact details were obtained and she was contacted to schedule a recruitment meeting. Community recruitment occurred through referrals in the community as well as in community pregnancy and health clinics. The population-based recruitment rate for the *PFL* cohort, based on all live births during the recruitment phase, was 52%. Twenty-six percent of pregnant women in the area were identified but could not be contacted for a final acceptance, or were contacted and refused to join the programme, and a further 22% were not identified in the recruitment phase. These figures are based on public health nurses' records of all recorded births in the three catchment areas during the inclusion period and are displayed in Table 2.2. It is important to note that ethical approval to recruit in the maternity hospital was gained in May 2008, four months after recruitment began. During these four months, community recruitment was the only mechanism by which participants were recruited into the *PFL* Programme. This time lag may have contributed to missing 22% of eligible participants.

Table 2.2 - Population-based Recruitment Rate Figures for the *PFL* Catchment Area

Total Number of Live Births	447
Total Number Recruited	233 (52%)
Total Number Not Interested/Not Contactable	117 (26%)
Total Number Missed (did not meet)	97 (22%)
Note. Information regarding the number of live births in the comparison community is not available.	

The recruitment rate by catchment area is presented in Table 2.3 and shows that the recruitment rate was lowest in the first expansion area and highest in the second expansion area.

Table 2.3 - Figures Illustrating Live Births in the *PFL* Catchment Areas as Indicated by Public Health Nurse Records

Category	# Live Births	# Recruited into *PFL*	% Captured
Original Catchment Area	320	172	54%
1st Expansion Area	94	39	41%
2nd Expansion Area	33	22	67%
Total	447	233	52%
Note. Information regarding the number of live births in the comparison community is not available.			

Table 2.4 indicates that the sample-based recruitment rate for the *PFL* cohort, based on all approached eligible participants during the recruitment phase, was 67%. It also shows that the *PFL* community recruitment rate (88%) was higher than the *PFL* hospital recruitment rate (51%). As community recruitment involved women initiating contact with the *PFL* Programme in order to learn more about the programme and/or directly join the programme, it is unsurprising that the community recruitment rate is higher than the hospital recruitment rate. Table 2.5 illustrates that the majority of *PFL* participants (55%) were recruited through the community. Of the 129 participants recruited from the community, 25% indicated that they were referred to the programme from a friend or family member already taking part in the *PFL* Programme. Twelve percent of community referrals indicated that they heard about the programme through a *PFL* affiliate or informational material, a further 12% were recommended by a medical professional, and an additional 12% were referred by a local service provider. Nine percent heard about the programme from educational professionals in the area and 8% were referred by a friend or

family member not taking part in the programme. Finally, 22% of community referrals did not indicate that they were referred to the *PFL* Programme by anyone.

As displayed in Table 2.4, the sample-based recruitment rate for the comparison community was 36%, with a 48% recruitment rate in the community and a 30% recruitment rate in the local maternity hospitals. Additionally, Table 2.5 shows that the majority of comparison community participants (58%) were recruited through the local maternity hospitals.

Table 2.4 - Sample-based Recruitment Rates for the *PFL* Evaluation by Cohort and Place of Recruitment

Category	# Spoke to Recruiter	# Recruited into Programme	% Recruited into Programme
PFL Hospital Sample-based Recruitment Rate	203	104	51%
PFL Community Sample-based Recruitment Rate	147	129	88%
Total *PFL* Sample-based Recruitment Rate	350	233	67%
Comparison Community Sample-based Hospital Recruitment Rate	190	57	30%
Comparison Community Sample-based Community Recruitment Rate	88	42	48%
Total Comparison Community Sample-based Recruitment Rate	278	99	36%

Note. Hospital figures are based on 28.5 months recruiting *PFL* participants and 25 months recruiting comparison community participants in local maternity hospitals.

Table 2.5 - Frequencies Representing Where Participants were Recruited

	Hospital Recruitment *n* (%)	Community Referral *n* (%)	Total Number Recruited
PFL Cohort	104 (45%)	129 (55%)	233
Comparison Community	57 (58%)	42 (42%)	99
Total	161 (48%)	171 (52%)	332

2.6 Recruitment and Pregnancy Information

The majority of *PFL* participants (82%) planned to have their baby at the Rotunda Hospital, while 16% were using the National Maternity Hospital. A further 1% of the *PFL* cohort were planning to give birth in the Coombe Maternity Hospital and less than 1% were planning on having a home birth. Similarly, 92% of the comparison community participants planned to have their baby at the Rotunda Maternity Hospital, while 8% planned to use the National Maternity Hospital.

On average, *PFL* participants were 21.5 weeks pregnant (M*Low* = 21.3, *SDLow* = 7.0; *MHigh* = 21.6, SD*High* = 7.9) when completing the baseline interview and comparison community participants were, on average, 25.2 (*SD* = 10.4) weeks pregnant . The average week of pregnancy at the time of the baseline interview does not differ between the low and high *PFL* treatment groups, but the comparison community was significantly farther along in pregnancy than the aggregate *PFL* cohort ($T = 4.3$, $p<.001$). The majority of participants were in their second trimester at the time the baseline interview was completed. Details of pregnancy trimester at the time of the baseline interview are presented in Table 2.6. Note that the low and high *PFL* treatment groups do not differ in terms of the distribution of participants across trimesters, but statistical differences were present between the aggregate *PFL* sample and the comparison community ($\chi^2 = 12.5$, $p<.01$, v = .20).

Table 2.6 - Frequencies Representing Pregnancy Trimester at Time of Baseline Interview

Category	1st Trimester (1-12 weeks) *n*(%)	2nd Trimester (13-24 weeks) *n*(%)	3rd Trimester (25-40 weeks) *n*(%)
Low Treatment (n=101)	14 (14%)	56 (55%)	31 (31%)
High Treatment (n=104)	13 (13%)	56 (54%)	35 (34%)
PFL Cohort (n=205)	27 (13%)	112 (54%)	66 (32%)
Comparison Community (n=99)	2 (2%)	51 (52%)	46 (46%)

2.7 Disengagement before the Baseline Interview

Twenty one *PFL* participants (n*Low* = 14; n*High* = 7) disengaged after recruitment yet prior to completing a baseline interview and four participants (n*Low* = 2; n*High* = 2) were unresponsive during the post recruitment period until after their child was born, thus no baseline data are available for these participants. In addition, two participants (n*Low* = 1; n*High* = 1) had a miscarriage before completing the baseline interview. Therefore, baseline data are available for 206 *PFL* participants, 101 in the low treatment group and 105 in the high treatment group. Twelve of the participants who dropped out of the programme before completing a baseline interview provided reasons for their decision to disengage with the programme. Specific reasons were that they do not want to discuss their personal life and family, that it would take up too much of their time, that they did not feel that themselves or their child needed the programme, that the duration of the programme was too long, that it would get in the way of their day to day life, that they were uncomfortable with people coming to their house, and/or that they did not think the programme would help.

In total, excluding those who miscarried, 25 *PFL* participants who were recruited but did not complete a baseline interview. Basic socio-demographic information is available for 12 of these participants. When the socio-demographic profile of these participants was compared to participants who did complete a baseline interview, only one significant difference emerged. Specifically, individuals who completed a baseline assessment indicated that they received significantly more support from friends than those who dropped out of the programme before completing the baseline interview. Differences in age, support received by family members, support received from other people in the mother's life, age the mother left full time education, the number of household members working full-time, the number of household members working part-time, and the ability to make ends meet did not reach significance. Note that the sample size used in this analysis is small as it only pertains to a subset of participants. Details of these tests are presented in Table 2.7.

As recruitment into the community comparison group was completed immediately prior to conducting the baseline interview, there are baseline data available for all 99 comparison community participants.

[1] Baseline interviews were conducted, on average, 1.4 weeks after recruitment for the *PFL* cohort. The baseline interview was conducted on the same day as recruitment for the comparison community.

Table 2.7 - Demographic Comparisons for *PFL* Participants who Did and Did Not Complete a Baseline Assessment

	N	(n_{BL}/n_{No})	M_{BL}	(SD_{BL})	M_{No}	(SD_{No})	M_{BL}	M_{No}	*p*
Age	127	(115/12)	25.45	(6.17)	23.83	(3.81)		1.62	ns
Family Support	125	(113/12)	3.79	(0.65)	3.50	(0.80)		0.29	ns
Friend Support	121	(109/12)	3.67	(0.64)	3.08	(1.24)		0.59	<.01
Other Support	110	(98/12)	3.92	(0.88)	3.83	(0.94)		0.09	ns
Age Left Education	111	(99/12)	16.87	(1.87)	16.25	(1.14)		0.62	ns
Household Members Working Full-Time	126	(114/12)	1.72	(0.90)	1.58	(0.90)		0.14	ns
Household Members Working Part-Time	108	(97/11)	1.34	(0.52)	1.18	(0.40)		0.16	ns
Ability to Make Ends Meet	126	(114/12)	3.74	(1.02)	3.75	(0.97)	-	0.01	ns

2.8 Key Findings

- According to Enumeration Area (EA) level data from the 2006 Census the final *PFL* catchment area, including the two expansion areas, was then composed of 15,384 inhabitants, of whom: 7% were born outside Ireland, 42% were living in social housing, 12% were unemployed, and 7% had completed a third level education. Of the 233 participants recruited into the *PFL* Programme, 172 (74%) are from the original catchment area, 39 (17%) are from the first expansion area, and 22 (9%) are from the second expansion area.
- The comparison community consisted of 13,657 inhabitants in 2006, of whom: 5% were born outside Ireland, 35% were living in social housing, 10% were unemployed, and 7% had completed a third level education.
- In total, 233 *PFL* participants were recruited into the programme, with 118 assigned to the low treatment group and 115 assigned to the high treatment group. Additionally, 99 participants were recruited from the comparison community.
- The population-based recruitment rate for the *PFL* cohort, based on all live births during the recruitment phase, was 52%.
- Approximately 26% of eligible *PFL* participants approached during the recruitment phase could not be contacted for a final acceptance or were contacted and refused to join the programme, and a further 22% of eligible participants were not identified throughout the recruitment phase.
- Approximately 55% of *PFL* participants were recruited in the community and 45% through two maternity hospitals.
- Approximately 58% of comparison community participants were recruited through two maternity hospitals and 42% through community sources.
- The sample-based recruitment rate for the *PFL* cohort, based on all approached eligible participants during the recruitment phase, was 67%.
- The sample-based recruitment rate for the comparison community was 36%.
- On average, *PFL* participants were 21.5 weeks pregnant when completing the baseline interview and comparison community participants were 25.2 weeks pregnant.
- Participants who were recruited into the programme, but did not complete a baseline interview, reported receiving significantly less support from friends than those who stayed in the programme. Differences in other characteristics did not reach significance.

Chapter Three

Methodology

3.1 Introduction

This chapter describes the methodology used to analyse the baseline data collected in the *PFL* Evaluation and how the results presented in the report should be interpreted.

3.2 Description of Analyses

3.2.1 Standardised Scale Reliability

Cronbach's alpha coefficients (Cronbach, 1951) were calculated for all standardised scales used in this report and are reported in the text along with the description of these scales. Cronbach's alpha (α) measures the intercorrelations between items on the various psychometric scales. It provides an indicator of the internal consistency or reliability of the measure (Cronbach, 1951) and provides an indication of how closely items that make up a latent variable or scale are related. In terms of interpretation, a Cronbach's alpha of 0.7 or higher is considered evidence of sufficient dependability (Breakwell, 2006).

3.2.2 Permutation Tests

Given the relatively small size of the sample in these analyses (N = 304), and the non-normality of many outcome measures, traditional techniques which work under the assumption of large samples are not appropriate. Instead, permutation tests were employed to check for statistical differences among the low and high *PFL* treatment groups, as well as the aggregate *PFL* groups and the comparison community. A permutation test is a method whereby an outcome of interest is tested for significance by comparing the original sample to multiple, random permutations of the data. A number of simulation studies have found that permutation testing has superior power advantages over parametric *t*-tests, particularly if the data are skewed and the degree of skewness is correlated with the size of the treatment effect (see Keller, 2012). Permutation tests work as follows: first the observed test statistic is calculated by comparing the mean outcomes of the treatment and control groups. Next, the data are repeatedly shuffled so that the treatment assignment of some participants is switched between the groups. The *p*-value for the permutation test is computed by examining the proportion of permutations that have a test statistic more extreme than the observed test statistic. If the proportion is small, we know that the original statistic is an unlikely outcome. This method provides evidence that something other than chance is driving the relationship. In this report, we use permutation tests based on 100,000 replications, to determine whether there are any baseline differences between the groups. We report *p*-values from two-sided tests in order to test the null hypothesis of no differences. These tests are also distribution-free as they do not rely on assumptions about the parametric distribution from which the data have been sampled. As permutation tests give accurate *p*-values even when the sampling distribution is skewed, they are often used when sample sizes are small and sample statistics are unlikely to be normal (Marozzi, 2002).

3.3 Description of Report Tables

The following summary statistics and tests are presented in the descriptive tables within Chapters Four through Eight. This section provides a useful reference when examining these tables.

N	*N* represents the response frequency or the number of respondents who answered the question of interest.
M	*M* illustrates the mean, or average value of responses. This statistic is provided for continuous and binary variables and represents the average response of all participants who answered the question of interest. For binary variables, this value can be interpreted as the proportion of the sample who reported being in the category described.
SD	*SD* is the standard deviation. This is calculated by, first summing up the difference between each observed response and the average response. This sum is then divided by the total number of observations to derive the average difference between responses and the mean. It serves as a useful indication of how varied the responses were.
Low/High PFL/LFP	*Low/High and PFL/LFP* subscripts attached to the summary statistics *(N, M,* and *SD)* indicate the subgroups for which the summary statistics have been calculated. The mean responses for the low *PFL* treatment group (low), high *PFL* treatment group (high), the aggregate *PFL* group (*PFL*), and the comparison group (*LFP*) are compared in multiple ways. The data are first grouped by *PFL* treatment status (low treatment and high treatment) to examine baseline differences within the *PFL* cohort and secondly, the aggregate *PFL* group is compared to the comparison community.
Individual *p*-value	The individual *p*-value represents the probability of observing differences between two groups by chance. In cases where there is a statistically significant difference between the two groups, a *p*-value is presented which indicates the likelihood that the group difference could have randomly occurred. A *p*-value of less than .10 is considered to be statistically significant. A *p*-value of less than 0.10 (10%), 0.05 (5%), and 0.01 (1%) conveys that the probability that the difference between the two groups is due to chance is less than 10%, 5%, or 1% respectively. Given that this is a baseline comparison, high *p*-values (i.e., non-significant results) would be a positive result indicating pre-intervention similarity between the groups. *p*-values are presented for significant differences only. Non-significant differences are denoted by ns.

Chapter Four

Parental Demographics and Household SES Indicators

Chapters Four through Eight present the results of the analyses of the baseline data. Each chapter follows a similar format, focussing on a specific topic and beginning by reviewing the relevant literature and discussing the relevance of that theme to the *PFL* Evaluation. The measures and standardised instruments collected during the baseline interview are then described. The summary statistics of these measures follow, accompanied by a discussion of the statistical differences, or lack thereof, found between the low and high *PFL* treatment groups and the aggregate *PFL* group and the comparison community.

4.1 Introduction

Socioeconomic status (SES) is a widely studied construct in the social sciences. It has been conceptualised and measured in several ways, with most definitions including some quantification of parental education, occupational status, and family income. Research indicates that SES is associated with a variety of health, cognitive, and socioemotional outcomes in children (see Bradley & Corwyn, 2002 for review). However, it is not clear whether it is poverty itself, or factors associated with poverty (e.g., single or teen parenthood), that have a causal impact on child outcomes. Therefore, when conducting research in child development, it is imperative that a comprehensive measurement of SES be used, capturing both traditional SES indicators and the associated demographics. This chapter presents information pertaining to several dimensions of SES including parental characteristics such as education, employment, weekly household income, social housing status, medical card status, and material deprivation.

4.1.1 Parental Demographics

Teenage parenthood is often linked to SES, with low SES standing as the single best predictor of adolescent parenthood (Fahey, 1995). Early parenthood is associated with both short and long-term effects on children's intellectual, behavioural, and social development (Fergusson & Woodward, 1999). In particular, research indicates that children of younger mothers are at an increased risk of experiencing problematic parent-child interactions (Brooks-Gunn & Furstenburg, 1986), lower levels of cognitive and social skills (Terry-Human, Manlove, & Moore, 2005), and educational underachievement (Klein, 2005). Furthermore, teenage mothers are more likely to have premature and low birth weight infants, and their infants experience greater risk of death in the perinatal period (Elfenbein & Felice, 2003; Klein, 2005). Evidence also suggests that fathers of children of teen mothers are less likely to provide both economic and social support to their family (Rangarajan & Gleason, 1998). This may adversely affect child development as paternal involvement - in terms of caregiving, quality of interactions with the child, and provision of financial support - has been linked to reductions in many of the negative outcomes associated with young motherhood (Furstenberg & Harris, 1993). On the other end of this spectrum, advanced maternal age is linked to better behavioural and cognitive scores in children (Fergusson & Lynskey, 1993) and reduced risk of educational underachievement, crime, and mental health difficulties in adolescence (Fergusson & Woodward, 1999). However, some negative associations with advanced maternal age also have been identified. For example, advanced maternal age at first birth may have detrimental health implications for both mother and child, as women who are over the age of 30 when they give birth have a higher risk of fetal deaths, low birth weight, or very pre-term births (Cnattingius, Foreman, Berendes, & Isotalo, 1992; Heck, Schoendorf, Ventura, & Kiely, 1997). Additionally, advanced paternal age is associated with a range of neurodevelopmental disorders, such as autism and schizophrenia (Saha, Barnett, Buka, & McGrath, 2009), highlighting that parental age, either young or old, is an important factor to consider when examining child developmental outcomes.

It is also important to consider parity status in the *PFL* cohort as typical home visiting programmes work with primiparous mothers. Therefore, an important outcome of the *PFL* Evaluation is to determine whether such a programme can be effective with non-primiparous women. Research indicates that first born children show an advantage over later born children for outcomes such as educational attainment (Black, Devereux, & Salvanes, 2005), cognitive development (Silles, 2010), and participation in extracurricular

activities (Rees, Lopez, Averett, & Argys, 2008). These studies find birth order effects even when related variables, such as family size, are rigorously controlled for. Psychologists best explain these effects in terms of the confluence model (Zajonc, 1976), which considers the intellectual environment of the child, and how the absolute intellectual levels of a family fall when a new sibling arrives, resulting in a less stimulating environment. Zajonc also suggests that older children benefit more from the intellectual stimulation of teaching young children than younger children gain through observational learning. Economic theories, in contrast, underline the restrictions new siblings impose on the availability of parent time and resources (e.g., Becker, 1981). Such effects must also be considered in the context of a low SES sample. Research examining the relationship between socioeconomic status, birth order, and child outcomes finds mixed results. Some researchers claim that the positive intellectual gains for first born children hold across all socioeconomic levels (e.g., Zajonc, 1976), while others find that birth order effects disappear when SES is controlled for (Steelman & Mercy, 1980). Of particular interest in this study, is whether participation in the *PFL* Programme can compensate for some of the less favourable outcomes experienced by later born children.

The number of people living in the household and their relationship to the child has also the capacity to influence child development. Research consistently demonstrates that growing up in a single-parent family has negative consequences for children, putting them at greater risk for low educational attainment (Biblarz & Raftery, 1999), externalising behaviours (Mott, Kowaleski-Jones, & Meneghan, 1997), and poor well-being (Ribar, 2004). The rate of non-marital childbearing has increased dramatically over the past three decades (Kiernan & Pickett, 2006), with an accompanying research focus on child outcomes. Children of married mothers, compared to those of both single and cohabiting parents, tend to have higher IQs (Bacharach & Baumeister, 1998), have greater birth weights (Bennett, 1992), exhibit fewer behaviour problems (Brown, 2004), and engage more in schooling (Amato, 2005). Furthermore, unmarried mothers are more likely to smoke during pregnancy, suffer from depression, and are less likely to engage in breastfeeding (Kiernan & Pickett, 2006). Research also shows that unmarried cohabiting parents have fewer years of education, earn less income, have lower levels of psychological well-being, and report higher levels of parenting stress than married parents: all factors which may contribute to the poor developmental outcomes experienced by their children (Amato, 2005).

The number of siblings a child has can also impact developmental outcomes as several studies demonstrate an inverse relationship between the number of siblings a child has and the child's educational attainment (see Steelman, Powell, Werum, & Carter, 2002 for review). The most frequently posed explanation for this effect is resource dilution, whereby parental resources are distributed equally among all children, and a greater number of children results in fewer resources per child (e.g., Sun & Li, 2009).

4.1.2 Parental Education

An important SES indicator which shows key relationships with child developmental outcomes is parental education. Numerous studies have demonstrated that low parental education is associated with lower levels of school achievement and IQ in later childhood (see Bradley & Corwyn, 2002 for review). Recent evidence suggests that enrichment of the home environment can have a mediating effect on the relationship between maternal education and children's achievement in reading and maths (Zadeh, Farnia, & Ungerleider, 2010). Maternal education, in particular, has a substantial effect on child physical health, as measured by children's height and weight for age (Boyle et al., 2006). This has been demonstrated as a "nurturing effect," where the impact of maternal education on health operates through a better knowledge of health care and nutrition, healthier behaviours, and providing a sanitary, safe environment for children (Chen & Li, 2009). Furthermore, evidence suggests that parental education positively influences the beliefs and behaviours of the parent, leading to better outcomes for their children. For example, Halle, Kurtz-Costes, & Mahoney (1997) found, using a sample of low-income parents, that parents with a higher level of education have greater expectations for their children's academic achievement, and that these expectations are related to their child's success in mathematics and reading.

Similarly, parental literacy and numeracy difficulties can also have a negative impact on child development. Specifically, research shows that the children of parents with a history of reading difficulties are at greater risk for reading difficulties themselves (Gilger, Pennington, & DeFries, 1991), which may result from fewer shared reading experiences, and a lack of access to print materials (Bus, Van Ijzendoorn, & Pellegrini, 1995). Genetic factors may also partially explain both reading and mathematics difficulties in children (Plomin & Kovas 2005). Interestingly, more recent research finds a link between parental difficulties in mathematics and increased efforts to help children learn mathematics, potentially reflecting concerns that their children will have similar difficulties (Silinskas, Leppanen, Aunola, Parrila, & Nurmi, 2010).

4.1.3 Parental Employment and Income

Parental unemployment is another key factor which can have an impact on children's social, cognitive, and health outcomes, although this effect varies by social group, the duration of unemployment, and whether it is the mother or father who is unemployed. Research finds that children of mothers who work during their first year of life have more behaviour problems and lower cognitive scores than children of mothers who do not work during this period (Berger, Brooks-Gunn, Paxson, & Waldfogel, 2008). However, this effect is less pronounced for children of parents in low SES communities (Hill, Waldfogel, Brooks-Gunn, & Han, 2005). There is also evidence of adverse effects from maternal unemployment on the general health status of low-income children, particularly boys: an effect that is mediated by the reduction of economic resources which accompanies unemployment (Gennetian, Hill, London, & Lopoo, 2010). The recent focus on maternal employment possibly reflects the shift in traditional gender roles, and developmental concerns brought about by an increase in working mothers. However, both maternal and paternal employment can affect children's cognitive and behavioural outcomes. Fathers' involuntary employment separation due to layoff, downsizing, being fired, or a medical problem is associated with a greater likelihood of children repeating a grade or being suspended from school, but only in families where mothers were the principal earners, suggesting that the effect is less about income differences and more about family dynamics (Kalil & Ziol-Guest, 2008).

In addition to employment, it is important to examine the nature of parental occupation, and in particular the number of hours spent at work. A recent study reported an association between parental job quality, or characteristics which foster the well-being of the employee, such as high wages, skill, and job security, and emotional and behavioural difficulties in children (Strazdins, Shipley, Clements, Obrien, & Broom, 2010). Furthermore, examining the number of hours worked per week can provide valuable information about the relationship between employment, income, and child outcomes. For example, Parcel and Menaghan (1990) demonstrate a nonlinear effect of maternal work hours on verbal skills among three to six year old children.

Related to employment is household income which is positively associated with child health (Case, Lubotsky, & Paxon, 2002; Currie & Stabile, 2003), cognitive outcomes (Yeung, Linver, & Brooks-Gunn, 2002), school achievement (Haveman & Wolfe, 1995), and externalising and internalising behaviours (Duncan, Brooks-Gunn, & Klebanov, 1994). Research finds a robust positive effect of household income on child health outcomes (Case et al., 2002; Currie & Stabile, 2003) and more recent research suggests that this effect partially operates through maternal child health related behaviours and parental health (Violato, Petrou, & Gray, 2009). Income, as an individual component of SES, has also been positively associated with children's cognitive test scores (Yeung et al., 2002), school achievement (Haveman & Wolfe, 1995), and externalising and internalising behaviours (Duncan et al., 1994). Suggested pathways through which these effects operate are health and nutrition, the home environment, parental-child interactions, parental mental health, and neighbourhood conditions (see Brooks-Gunn & Duncan, 2002 for review). To estimate a true causal effect of income on child outcomes, researchers must control for any exogenous variables, or factors that both affect parental income and are correlated with child outcomes. However, controlling for all exogenous variables is impossible, as many of these variables are unknown (e.g., Mayer, 2002). Studies that use techniques to control for unobserved exogenous variables often find smaller effects than less rigorous analyses. The largest effects are found for cognitive test scores and educational attainment. For example, Mayer (1997) and Blau (1999) use fixed-effects models to control for unobserved heterogeneity,

find a modest association between parental income and children's cognitive test scores. Similarly, Duncan, Yeung, Brooks-Gunn, & Smith (1998) find that an increase of 10% in parental income is associated with an increase of approximately half a year of schooling. In sum, high quality research, which utilises techniques to control for all observed and unobserved family background characteristics, finds a small-to-modest effect of income on child outcomes.

A further methodological point to consider concerns survey response biases. Research in this field indicates that there is substantial variation in individuals' interpretations of expenditure and income-related survey questions, with many individuals reporting their individual income instead of the household income (e.g., Comerford & Delaney, 2010). Therefore, it is important that proxy indicators for low SES be incorporated, such as medical card status, possession of private health insurance, and social welfare status.

4.1.4 Household Socioeconomic Status Indicators

Although living in social housing is indicative of low SES, several studies have reported that living in social housing is associated with positive developmental outcomes for children compared to similarly poor families not residing in social housing, including grade retention (Currie & Yelowitz, 2000), educational attainment (Newman & Harkness, 2002), and greater parent-reported health (Fertig & Reingold, 2007). These relationships may be due to the increased resources available to parents who receive subsidies for housing (Leventhal & Newman, 2010).

Another indicator of low SES is material deprivation. The inclusion of material deprivation measures can help to underline the extent of a respondent's poverty status. Enforced deprivation is defined as the inability to afford basic specific goods or services...reported at the household and not the individual level (EU-SILC, 2008). Enforced deprivation is associated with negative outcomes such as poor health (Torsheim et al., 2004), but also with positive outcomes such as increased breastfeeding duration (Brown, Raynor, Benton, & Lee, 2010). It should be noted, however, that a family experiencing enforced deprivation may choose to breastfeed their baby given their lack of resources. Deprivation indicators are associated with increased psychological distress and depression among the unemployed (Bjarnason & Sigurdardottir, 2003). Such difficulties are important as parental outcomes such as these can affect child developmental outcomes. For example, maternal depression is linked to lower levels of child well-being (Feldman et al., 2009), while breastfeeding is linked to a range of positive health benefits for the child (see Oddy, 2001 for review).

This report also uses two additional proxies for low SES: medical card status and social welfare payments. Both of these variables serve as proxies for low income as both medical card status and social welfare payments in Ireland are means tested, such that family income must be below a certain threshold in order to be eligible.

4.1.5 Overview

A large body of research provides support for early childhood interventions as a means of closing the SES gap in children's skills and competencies at school entry (see Ramey & Ramey, 2004 for review). At its core, the *PFL* Programme aims to raise the levels of school readiness in a disadvantaged, low-SES community, and to compensate for the social-class discrepancies in children's skills and abilities. It is therefore imperative that SES variables are comprehensively assessed at baseline so that the potential future benefits of *PFL* are not spurious effects resulting from associations with unobserved family characteristics.

The current chapter presents information pertaining to the following dimensions of SES: teen parent status, single parenthood, parental education, parental employment, cognitive resources, ethnicity, household income, as well as information on the SES proxy indicators of social housing, medical card, private health insurance, social welfare, savings, and enforced deprivation. The chapter also includes information on general demographics of parental age, first-time mother status, and number of children. Statistical differences between the two *PFL* treatment groups and aggregate *PFL* and comparison groups are also examined.

4.2 Instruments

4.2.1 Parental Demographics

Mothers were asked their age and the biological father's age at the time of the baseline interview. Parental ages are represented as continuous variables as well as binary variables, dichotomised at age 19 or below, to illustrate the proportion of teenage parents taking part in the *PFL* Evaluation. Mothers were also asked to select their ethnicity from a list of nine categories. This information was used to generate a binary variable indicating whether the mother is Irish; an addition binary variable was generated to indicate whether the mother is Irish Traveller. Mothers also reported their number of biological children, if applicable. This was used to indicate the proportion of primiparous mothers in the programme using a binary variable. Finally, the mother reported her current relationship status from a list of seven options. This information was used to generate two separate binary indicators indicating 1) whether the mother was currently in a relationship (i.e., married, cohabitating, or boyfriend) and 2) married. Those participants who reported that they were in a relationship were asked whether or not their partner was the child's biological father.

4.2.2 Parental Education and Functioning in Daily Life

Mothers were asked their highest level of education obtained as well as the highest level of education obtained by the baby's biological father. Responses to this question were dichotomised to indicate the number of parents who had completed a Junior Certificate Qualification or below. This information also was used to generate a binary indicator representing the proportion of parents who hold a primary degree. Finally, mothers were asked three questions pertaining to their literacy and numeracy: 1) Do problems with reading, writing, or maths make it difficult for you to manage day-to-day activities, like paying bills, writing letters, and so on?, 2) Can you usually read and fill out forms you might have to deal with in everyday life, and 3) When you buy things in shops with a €5 or €10 note, can you usually tell if you have the right change? A binary variable indicating overall literacy and numeracy difficulties was created such that respondents were divided into two groups based on whether they indicated experiencing any literacy or numeracy difficulties or not.

4.2.3 Maternal Cognitive Resources

To gain an index of maternal cognition, the Wechsler Abbreviated Scale of Intelligence (WASI) cognitive assessment was administered to all mothers participating in the evaluation when their baby was approximately three months old. The WASI is a short, four-subset version of the Wechsler Adult Intelligence Scale (WAIS) which focuses on the domains of vocabulary, similarities of constructs, block design, and matrix reasoning. The assessment was administered by a trained assessor and took approximately 45 minutes to complete. The WASI provides standardised measures of verbal ability, perceptual reasoning ability, and a full scale measure of cognitive functioning.

4.2.4 Parental Employment Characteristics

Several questions assessed the current work status of both the mother and the biological father. Participants were asked to select their current work status from a list of options including currently in paid work, in work but on leave, unemployed, student, looking after home/family, retired, not able to work due to disability/sickness, paid FÁS training, or unpaid FÁS training. Responses to this question were dichotomised to represent the proportion of mothers and fathers in paid work versus not in paid work, and the proportion of mothers and fathers currently unemployed. In addition, mothers reported on whether they or the child's father worked in full or part time employment, and the approximate annual income of both parents.

4.2.5 Household SES Indicators and Family Functioning

Several questions assessed the socioeconomic status of the household. Specifically, a series of binary SES indicators assessed whether the mother was currently living in social housing, whether she had a medical card, whether she had private health insurance, and whether she was currently in receipt of any social welfare payments. Mothers also stated whether or not they saved money on a regular basis.

Mothers' perception of financial difficulty also was assessed by asking participants to consider the total income of their household, and to rate on a seven-point scale, ranging from with great difficulty to very easily, how difficult it was for the household to make ends meet. Responses to this variable were used to generate a binary variable indicating whether participants make ends meet with difficulty or not. Participants were also asked the household's weekly income from all sources, selecting from a scale where the lowest range was less than €50, and the highest was €1500 or more. As households differ in number of people and composition, a household equivalised weekly income variable was created by assigning a weight to each household member. A weight of '1' was assigned to the first adult in the household, 0.66 to each subsequent adult (aged 14+ years) and 0.33 to each child (aged less than 14 years). The sum of the weights in each household gives the household's equivalised size – the size of the household in adult equivalents. The household equivalised weekly income is the reported household weekly income divided by the equivalised size of the household.

Additionally, participants were presented with a list of 8 potential domestic risks and asked to indicate if any of these factors had been an issue for anyone in the family. These included separation, parenting problems, domestic violence, abuse, suicidal thoughts, mental health issues, addiction and other. A total number of domestic risks score was also calculated by summing the number of risks each participant indicated.

4.2.6 Material Deprivation

Material deprivation was assessed using eleven deprivation indicators, taken from the EU Survey on Income and Living Conditions (EU-SILC, 2008). Participants indicated whether family members experienced a lack of any of the following items, and whether this was due to a lack of money or for another reason:

1. Household heating (in the last year)
2. A morning, afternoon, or evening out (in the last fortnight)
3. Two pairs of strong shoes
4. A roast meal (once a week)
5. A meal with meat, chicken or fish (every second day)
6. New (not second-hand) clothes
7. A warm, waterproof coat
8. Keeping the home adequately warm
9. Replacing any worn out furniture
10. Having family or friends for a drink or meal (once a month)
11. Buying presents for family or friends (at least once a year)

Responses to these questions were recoded to represent the proportion of mothers who indicated enforced deprivation on at least one item. Enforced deprivation was defined as experiencing a lack of material goods due to financial reasons.

[2]FÁS refers to a state agency which assists people who are seeking employment.

4.3 Results

Descriptive statistics and statistical tests examining group differences of parental demographics, education, employment, and household socioeconomic status indicators are presented in Tables 4.1 and 4.2. Specifically, differences between the low and high treatment groups are examined, as well as differences between the aggregate *PFL* group and the comparison community group. In total, 36 measures were assessed in this chapter. The low and high treatment *PFL* groups differed on one of these indices. The aggregate *PFL* cohort and the comparison community, however, differed on thirteen of these indices.

4.3.1 Parental Demographics

Parental demographics are presented in Table 4.1 and Table 4.2. There were no statistically significant differences between the low and high *PFL* treatment groups on any of the parental demographics. There were significant differences between the aggregate *PFL* group and the comparison group on five of the 11 demographics examined.

Mothers in the low and high treatment groups were, on average, approximately 25 years old at the time of recruitment, while mothers in the comparison sample were significantly older ($p<.05$) with a mean age of 27 years old. Approximately 20% of the mothers in the low treatment group were teenage mothers, compared with 16% in the high treatment group and 11% in the comparison group. Additionally, 54% of the high treatment group were first time mothers, compared with 50% in the low treatment group, while significantly fewer mothers, 41%, in the comparison group were first time mothers ($p<.10$). For non-primiparous mothers, on average, the low treatment group and the high treatment group had just under two biological children, while the comparison group had just over two children. The majority of mothers in the *PFL* Programme indicated that they were in a relationship. Specifically, 84% in the low treatment group, 78% in the high treatment group, and 87% in the comparison community were in a relationship, while 18% of the low treatment group, 14% of the high treatment group, and 18% of the comparison group were married. For those that were in a relationship, 92% of the high treatment group, 95% of the low treatment group, and 97% of the comparison group were with the biological father. While the mean age of fathers in the low treatment group was 28 years, and 27 years in the high treatment group, the fathers in the comparison group were significantly older ($p<.05$) with an average age of 29 years. Additionally, 12% of fathers in the low treatment group and 10% of fathers in the high treatment group were teenage fathers, whereas significantly fewer fathers, 5%, in the comparison group were teenage fathers ($p<.10$). The results pertaining to maternal ethnicity show that the majority of mothers in the *PFL* Evaluation are Irish, with 98% and 99% in the low and high treatment groups identified as being Irish, however significantly fewer, 95%, of the comparison community indicated that they were Irish. A further 7% of the low treatment group, 3% of the high treatment group, and 4% of the comparison group were classified as Irish Travellers, while a very small proportion of the *PFL* sample or the comparison sample are classified as being of a different ethnic group.

4.3.2 Parental Education and Maternal Cognitive Resources

Descriptive statistics and statistical tests pertaining to maternal and paternal education and maternal cognitive resources are presented in Tables 4.1 and 4.2. There were no statistically significant differences between the low and high *PFL* treatment groups on any of the eight characteristics assessed. There were, however, significant differences between the aggregate *PFL* group and the comparison group on six of the indicators examined.

Forty percent of mothers in the low treatment group and 34% of mothers in the high treatment group have obtained a Junior Certificate Qualification or lower, whereas significantly fewer, 25%, of the comparison group had obtained a Junior Certificate Qualification of lower ($p<.05$). Additionally, only 3% of mothers in the *PFL* Programme have completed a primary degree, compared to 9% in the comparison community, which is a significantly higher proportion ($p<.05$). Furthermore, approximately 29% of mothers in the low treatment group and 35% of mothers in the high treatment group indicated they experience problems

with literacy and/or numeracy in their daily lives, while only 19% of mothers in the comparison community indicated such problems ($p<.05$).

In terms of paternal education, 48% of fathers in the low treatment group, 46% of fathers in the high treatment group, and 38% of fathers in the comparison community have achieved a Junior Certificate Qualification or lower. Three percent of fathers in the *PFL* cohort have obtained a primary degree, compared to 5% of the comparison community.

In relation to maternal cognitive resources, there were no significant differences between the low and high treatment groups on any of the cognitive resources instruments. However, comparison group mothers scored significantly higher on all three indicators of cognitive resources than mothers in the *PFL* cohort ($p<.05$).

4.3.3 Parental Employment and Income Characteristics

Maternal and paternal employment and income characteristics are presented in Tables 4.1 and 4.2. There was one statistically significant difference between the low and high *PFL* treatment groups, and no statistical differences between the aggregate *PFL* group and the comparison group on the eight employment and income characteristics assessed.

Thirty-nine percent of mothers in the low treatment group, 37% of mothers in the high treatment group, and 43% of mothers in the comparison community were in paid work during pregnancy. In terms of full-time employment, 26% in the low treatment group, 18% in the high treatment group, and 27% in the comparison community were working full-time. On average, the annual income of mothers in the *PFL* cohort is just under €20,000 per annum compared to approximately €22,600 per annum earned by working mothers in the comparison community. Approximately 41% of mothers in the low treatment group and 43% in the high treatment group were unemployed during pregnancy, compared to 37% of the comparison group. In relation to paternal employment, 57% of fathers in the low treatment group, 49% of fathers in the high treatment group, and 62% of fathers in the comparison community were in paid work, and 28%, 20%, and 25% were engaged in full-time employment. On average, fathers in the low treatment group earn just under €25,700 per annum, compared to approximately €27,200 earned by fathers in the high treatment group and €27,600 earned by fathers in the comparison community. Approximately 30% and 42% of fathers in the low and high treatment groups respectively were unemployed, indicating that significantly more fathers in the high treatment group were unemployed ($p<.10$). 31% of fathers in the comparison group were unemployed.

4.3.4 Household SES Indicators and Material Deprivation

Descriptive statistics and statistical tests regarding household socioeconomic status and material deprivation are presented in Tables 4.1 and 4.2. There were no statistically significant differences between the low and high *PFL* treatment groups on any of the SES characteristics. There were statistically significant differences between the aggregate *PFL* group and the comparison group on two of the nine indicators examined.

A significantly higher proportion of mothers in the *PFL* cohort indicated that they were living in social housing compared to those in the comparison group ($p<.05$). Specifically, 55% of the aggregate *PFL* group and 43% of mothers in the comparison group were living in social housing at the time of the baseline interview. Additionally, 66% of mothers in the low treatment group, 60% of mothers in the high treatment group, and 56% of those in the comparison group hold a medical card. Few mothers in either the *PFL* treatment groups or the comparison community group indicated that they have private health insurance, with only 7% of mothers in the low treatment group and 9% of mothers in the high treatment and comparison group having private health insurance. Sixty-five percent of mothers in the low treatment group and 64% of those in both the high treatment and comparison groups were in receipt of social welfare payments at the time of the baseline interview, while 51% of the low treatment group, 47% of the

high treatment group, and 56% of the comparison group indicated that they save money regularly. With regard to material deprivation, 40% of mothers in the low treatment group, 49% in the high treatment group, and 43% in the comparison community experienced enforced deprivation. Thirty percent of the low treatment group, 28% of the high treatment group, and 26% of the comparison group reported that they had difficulty making ends meet. Additionally, the high and low treatment group reported an equivalised weekly household income of approximately €253 and €229 respectively. Whereas the comparison group reported a significantly higher equivalised weekly household income of approximately €291 ($p<.05$). In relation to number of domestic risk indicators, the low and high treatments group reported an average of 0.70 and 0.79 domestic risks respectively, compared to 0.95 in the comparison group.

4.4 Key Findings

- Participants in the low treatment group significantly differed from those in the high treatment group on only one of the 36 parental education, employment, cognitive resources, and household demographics measured, suggesting that families in the low and high treatment groups were relatively homogeneous prior to taking part in the intervention.
- Participants in the comparison group differed significantly from those in the aggregate *PFL* group on 13 of the 36 demographic measures. Specifically, mothers in the comparison group are older, are less likely to be first time mothers, have higher levels of education, experienced fewer literacy and numeracy difficulties, have higher income, demonstrated greater levels of cognitive resources, perceptual reasoning and verbal ability, and are less likely to live in social housing. Additionally, fathers in the comparison community were significantly older than fathers in the *PFL* cohort and less likely to be teenage fathers.
- Just over half of the *PFL* cohort are primiparous mothers and almost one-fifth are teenage parents.
- Just over one-third of mothers, and just under half of fathers among the *PFL* cohort have low levels of education.
- Over one-third of the *PFL* fathers and 43% of the *PFL* mothers are unemployed.
- Over half of the *PFL* cohort live in social housing and possess a medical card.

Table 4.1 - Descriptive Statistics and Permutation Results for HIGH and LOW Treatment Groups: Parental Demographics & Household SES Indicators

	N	(n_{HIGH}/n_{LOW})	M_{HIGH}	(SD_{HIGH})	M_{LOW}	(SD_{LOW})	Individual Test $p^{\dagger}$
Parental Demographics							
Mother's Age	205	(104/101)	25.46	(5.85)	25.30	(6.00)	ns
Teenage Mother	205	(104/101)	0.16	(0.37)	0.20	(0.40)	ns
First-time Mother	205	(104/101)	0.54	(0.50)	0.50	(0.50)	ns
Number of Biological Children	205	(104/101)	1.94	(1.31)	1.91	(1.15)	ns
Mother in a Relationship	205	(104/101)	0.78	(0.42)	0.84	(0.37)	ns
Mother Married	205	(104/101)	0.14	(0.35)	0.18	(0.38)	ns
Biological Father's Age	203	(103/100)	27.47	(6.52)	27.58	(7.33)	ns
Teenage Father	205	(104/101)	0.10	(0.30)	0.12	(0.33)	ns
Partner is Biological Father	179	(88/91)	0.92	(0.27)	0.95	(0.23)	ns
Mother Irish	205	(104/101)	0.98	(0.14)	0.99	(0.10)	ns
Mother Traveller	205	(104/101)	0.03	(0.17)	0.07	(0.26)	ns
Parental Education							
Mother with Junior Certificate Qualification or Lower	205	(104/101)	0.34	(0.47)	0.40	(0.49)	ns
Mother with Primary Degree	205	(104/101)	0.03	(0.17)	0.03	(0.17)	ns
Mother with Literacy/Numeracy Problems	205	(104/101)	0.35	(0.48)	0.29	(0.45)	ns
Father with Junior Certificate Qualification or Lower	183	(89/94)	0.46	(0.50)	0.48	(0.50)	ns
Father with Primary Degree	183	(89/94)	0.03	(0.18)	0.03	(0.18)	ns
Maternal Cognitive Resources							
Cognitive Resources Score	181	(90/91)	82.31	(12.61)	80.40	(13.07)	ns
Perceptual Reasoning Ability	181	(90/91)	88.97	(14.52)	86.65	(15.78)	ns
Verbal Ability	181	(90/91)	79.21	(11.33)	77.91	(11.60)	ns
Maternal Employment							
Mother in Paid Employment	205	(104/101)	0.37	(0.48)	0.39	(0.49)	ns
Mother in Full-time Employment	203	(103/100)	0.18	(0.39)	0.26	(0.44)	ns
Annual Income of Working Mother (In Euro)	75	(37/38)	19224.00	(9850.96)	19601.68	(8092.83)	ns
Mother Unemployed	205	(104/101)	0.43	(0.50)	0.41	(0.49)	ns
Paternal Employment							
Father in Paid Employment	198	(101/97)	0.49	(0.50)	0.57	(0.50)	ns
Father in Full-time Employment	198	(99/98)	0.20	(0.40)	0.28	(0.45)	ns
Annual Income of Working Partner (in Euro)	76	(36/40)	27207.78	(13179.07)	25697.50	(12059.33)	ns
Father Unemployed	201	(102/99)	0.42	(0.50)	0.30	(0.46)	$p<.10$
Household Socioeconomic Status Indicators							
Residing in Social Housing	204	(103/101)	0.55	(0.50)	0.55	(0.50)	ns
In Possession of a Medical Card	205	(104/101)	0.60	(0.49)	0.66	(0.47)	ns
In Possession of Private Health Insurance	202	(102/100)	0.09	(0.29)	0.07	(0.26)	ns
In Receipt of Social Welfare	203	(104/99)	0.64	(0.48)	0.65	(0.48)	ns
Saves Regularly	205	(104/101)	0.47	(0.50)	0.51	(0.50)	ns
Materially Deprived (on at least one item)	203	(104/99)	0.49	(0.50)	0.40	(0.49)	ns
Difficulty Making Ends Meet	204	(103/101)	0.28	(0.45)	0.30	(0.46)	ns
Equivalised Weekly Household Income (In Euro)	161	(81/80)	229.37	(105.42)	252.73	(143.64)	ns
Number of Domestic Risk Indicators	203	(104/99)	0.79	(1.08)	0.70	(1.8)	ns

Notes: '*N*' indicates the sample size. '*M*' indicates the mean. '*SD*' indicates the standard deviation. [†] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Table 4.2 - Descriptive Statistics and Permutation Results for *PFL* and Comparison (*LFP*) Groups: Parental Demographics & Household SES Indicators

	N	(n_{PFL}/n_{LFP})	M_{PFL}	(SD_{PFL})	M_{LFP}	(SD_{LFP})	Individual Test $p^{\dagger}$
Parental Demographics							
Mother's Age	304	(205/99)	25.38	(5.90)	27.28	(6.20)	$p<.05$
Teenage Mother	304	(205/99)	0.18	(0.39)	0.11	(0.32)	ns
First-time Mother	304	(205/99)	0.52	(0.50)	0.41	(0.50)	$p<.10$
Number of Biological Children	304	(205/99)	1.93	(1.23)	2.11	(1.35)	ns
Mother in a Relationship	304	(205/99)	0.81	(0.39)	0.87	(0.34)	ns
Mother Married	304	(205/99)	0.16	(0.37)	0.18	(0.39)	ns
Biological Father's Age	299	(203/96)	27.52	(6.91)	29.45	(7.28)	$p<.05$
Teenage Father	304	(205/99)	0.11	(0.31)	0.05	(0.22)	$p<.10$
Partner is Biological Father	268	(179/89)	0.93	(0.25)	0.97	(0.18)	ns
Mother Irish	304	(205/99)	0.99	(0.12)	0.95	(0.22)	$p<.10$
Mother Traveller	304	(205/99)	0.05	(0.22)	0.04	(0.20)	ns
Parental Education							
Mother with Junior Certificate Qualification or Lower	304	(205/99)	0.37	(0.48)	0.25	(0.44)	$p<.05$
Mother with Primary Degree	304	(205/99)	0.03	(0.17)	0.09	(0.29)	$p<.05$
Mother with Literacy/Numeracy Problems	304	(205/99)	0.32	(0.47)	0.19	(0.40)	$p<.05$
Father with Junior Certificate Qualification or Lower	275	(183/92)	0.47	(0.50)	0.38	(0.49)	ns
Father with Primary Degree	275	(183/92)	0.03	(0.18)	0.05	(0.23)	ns
Maternal Cognitive Resources							
Cognitive Resources Score	269	(181/88)	81.35	(12.84)	88.15	(13.87)	$p<.01$
Perceptual Reasoning Ability	269	(181/88)	87.80	(15.17)	92.39	(14.72)	$p<.01$
Verbal Ability	269	(181/88)	78.56	(11.45)	86.23	(13.66)	$p<.01$
Maternal Employment							
Mother in Paid Employment	302	(205/97)	0.38	(0.49)	0.43	(0.50)	ns
Mother in Full-time Employment	300	(203/97)	0.22	(0.42)	0.27	(0.45)	ns
Annual Income of Working Mother (In Euro)	117	(75/42)	19415.36	(8943.85)	22599.52	(11060.44)	ns
Mother Unemployed	302	(205/97)	0.42	(0.49)	0.37	(0.49)	ns
Paternal Employment							
Father in Paid Employment	291	(198/93)	0.53	(0.50)	0.62	(0.49)	ns
Father in Full-time Employment	291	(198/93)	0.24	(0.43)	0.25	(0.43)	ns
Annual Income of Working Partner (in Euro)	123	(76/47)	26412.89	(12540.05)	27646.55	(9332.01)	ns
Father Unemployed	298	(201/97)	0.36	(0.48)	0.30	(0.46)	ns
Household Socioeconomic Status Indicators							
Residing in Social Housing	302	(204/98)	0.55	(0.50)	0.43	(0.50)	$p<.05$
In Possession of a Medical Card	304	(205/99)	0.63	(0.48)	0.56	(0.50)	ns
In Possession of Private Health Insurance	301	(202/99)	0.08	(0.27)	0.09	(0.29)	ns
In Receipt of Social Welfare	299	(203/96)	0.65	(0.48)	0.64	(0.48)	ns
Saves Regularly	301	(205/96)	0.49	(0.50)	0.56	(0.50)	ns
Materially Deprived (on at least one item)	299	(203/96)	0.45	(0.50)	0.43	(0.50)	ns
Difficulty Making Ends Meet	300	(204/96)	0.29	(0.45)	0.26	(0.44)	ns
Equivalised Weekly Household Income (In Euro)	244	(161/83)	240.98	(126.02)	291.03	(165.60)	$p<.05$
Number of Domestic Risk Indicators	299	(203/96)	0.74	(1.13)	0.95	(1.57)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [†] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Chapter Five

Maternal Mental Well-being and Personality

5.1 Introduction

5.1.1 Maternal Mental Well-being

Maternal mental health, both pre and postnatally, is an important determinant of child developmental outcomes as it not only influences a child's development in the early years, but may influence the development of the foetus in utero. For example, maternal depression during pregnancy has been associated with excessive crying and irritability in infants (Zuckerman, Bauchner, Parker, & Cabral, 1990). Studies have also shown that stress during pregnancy can increase the production of certain hormones which, in excess, have the capacity to predispose the child to attention deficits and depressive symptoms (Weinstock, 2005). Furthermore, exposure to elevated levels of cortisol and higher levels of pregnancy-specific anxiety early in pregnancy are both associated with a slower rate of development over the child's first year of life and with lower developmental scores at 12 months of age (Davis & Sandman, 2010).

Parental mental health throughout the child's life has also the capacity to influence child development. Specifically, postnatal depression is associated with a number of negative child outcomes including poor cognitive and emotional development (Beck, 1998), insecure attachment (Murray, 1991; Teti, Gelfand, Messinger, & Isabella, 1995), and behavioural problems (Murray, 1991). Mothers who suffer from postnatal depression also may engage in less responsive parenting, which is commonly associated with negative developmental outcomes in children (Coolahan, 1997; Cunningham & Boyle, 2002; Snyder, Reid, & Patterson, 2003; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Research also suggests that paternal depression during early childhood can have detrimental effects on child emotional and behavioural outcomes at ages three through five, particularly on the development of conduct disorders in boys (Ramchandani, Stein, Evans, O'Connor, & ALSPAC Study Team, 2005).

5.1.2 Maternal Attachment

Parental attachment style is a key determinant of multiple child outcomes. For example, parental attachment is associated with parental depression, such that parents who have insecure or avoidant attachment styles are more likely to suffer from antenatal depressive disorders, while those with insecure enmeshed styles are more likely to suffer from postnatal depression (Bifulco et al., 2004). Parental attachment style is also related to the development of a child's attachment style (Murray, Fiori-Cowley, Hooper, & Cooper, 1996). This is an important as it is a determinant of the development of the child's representations of self and others (Clarke & Symons, 2009) which may lay the foundation for future interactions with peers. Parents exhibiting avoidant attachment styles are likely to have children who are more distressed and they are also less likely to comfort their children when they are distressed (Edelstein et al., 2004; Rholes, Simpson, & Blakely, 1995). Furthermore, parental attachment insecurity (i.e., attachment styles high in avoidance and/or anxiety) has been associated with ambivalence about having children and with more negative models of parenthood and parent-child relationships (Rholes, Simpson, Blakely, Lanigan, & Allen, 1997). The relationship between parental attachment style and child outcomes is important in the context of the *PFL* programme as attachment style shows links with SES, such that parents from lower SES backgrounds are more likely to have insecure attachment styles (Bifulco et al., 2004; Murray et al., 1996), placing them at increased risk for poor mental health, and their children at risk for the development of insecure attachment styles and negative developmental outcomes.

5.1.3 Maternal Self-Efficacy

In addition to attachment, self-efficacy is another aspect of mental health that has been shown to have both direct and indirect effects on child development (Junttila, Vauras, & Laakkonen, 2007; Weaver, Shaw, Dishion, & Wilson, 2008). Self-efficacy refers to a person's belief in their ability to influence events which affect their lives (Bandura, 2010), while parental self-efficacy refers to parents beliefs in his or her ability to influence the development of their child (Ardelt & Eccles, 2001). High self-efficacy is characterised by competence in the face of demands, less negative emotional arousal when stressed, and conceptualization of difficult situations as challenges. While low self-efficacy is characterised by self doubt, high levels of anxiety in the face of adversity, and avoiding difficult tasks (Jerusalem & Mittag, 1995). Research indicates a strong relationship between parental self-efficacy and parenting competence as parenting self-efficacy is related to maternal interactive behaviour with infants (Bohlin & Hagekull, 1987), parental warmth and control with toddlers (Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000), parental limit setting and harsh discipline with preschoolers (MacPhee, Fritz, & Miller-Heyl, 1996), and to positive parenting of kindergarten children (Hill & Bush, 2001), all of which have an effect on child development. Ardelt and Eccles (2001) have suggested a model whereby parents with high parental self-efficacy are more likely to be engaged in positive parenting strategies which, in turn, increase the likelihood of their children's success in both academic and social-psychological domains. In contrast, parents with low parenting self-efficacy are more likely to engage in negative parenting strategies which reduce the likelihood of their children's success in these domains. They also suggest that parenting self-efficacy can have a direct impact on child outcomes through the modelling of attitudes and beliefs. Furthermore, Weaver and colleagues (2008) reported that the relationship between parenting self-efficacy and child behaviour problems is at least partially mediated by maternal depression which has also negative consequences for child development. Parental self-efficacy is useful in the context of *PFL* as it has often been used in intervention studies where it is studied as an outcome (Tucker, Gross, Fogg, Delaney, & Lapporte, 1998), as a predictor of whether the intervention will have an effect on individuals (Hoza et al., 2000), and as a mechanism through which behaviour can be changed (Evans et al., 2003; Miller-Heyl, MacPhee, & Fritz, 1998).

5.1.4 Maternal Self-Esteem

Parental self-esteem, or how valuable an individual feels he or she is worth as a person, is also important for child development. Parents who have high self-esteem are less likely to perceive stress (Abel, 1996; Kreger, 1995). In this way, negative life experiences, such as living in poverty, are more likely to cause stress in people with low self-esteem than in people with higher self-esteem (Brown & Dutton, 1995). Parents with high self-esteem are more likely to engage in authoritative parenting (Aunola, Nurmi, Onastu-Arvilommi, & Pulkkine, 1999; Lutenbacher & Hall, 1998), a style of parenting commonly associated with positive child developmental outcomes (Steinberg, Lamborn, Dornbusch, & Darling, 1992). Furthermore, increases in maternal self-esteem have been associated with greater child development at age two and it has been suggested that high self-esteem could act as a buffer in a high stress environment which allows the mother to maintain her ability to effectively parent the child (Surkan et al., 2008).

5.1.5 Maternal Personality Traits

Parental personality characteristics also have the capacity to influence parenting behaviour and ultimately child developmental outcomes (Belsky, 1984). Specifically, neuroticism, or emotional instability, has been found to be a strong predictor of parenting (Belsky, Crnic, & Woodworth, 1995), with parents who score high on this trait tending to employ maladaptive parenting behaviours including being overprotective (Kendler, Sham, & MacLean, 1997) and tend to experience more feelings such as anxiety, guilt, and depressed mood. Parents who demonstrate agreeable personality traits, on the other hand, tend to be trusting, altruistic, modest, and have more warm, sensitive and responsive interactions with their children, thus engaging in more authoritative parenting (Metsäpelto & Pulkkinen, 2003), a type of parenting commonly associated with positive child outcomes (Baumrind, 1991; Deković & Janssens, 1992; Hetherington, Henderson, & Reiss, 1999; Petito & Cummins, 2000; Taylor, Clayton, & Rowley, 2004). Parents who are highly extraverted are more likely to encourage independence in their children (Losoya, Callor, Rowe, & Goldsmith, 1997).

Additionally, display of extraverted personality traits is predictive of positive parenting in fathers, while agreeable personality traits are predictive of positive parenting in mothers, and emotional instability is the most significant predictor of negative parenting in both mothers and fathers (Belsky et al., 1995). Kockanska, Clarke, and Goldman (1997) report that mothers who were high in negative emotionality and disagreeableness showed more negative affects as well as less nurturing and more power assertive parenting. Their children were more defiant and angry, had less secure attachments, more behavioural problems, and lower internalisation of rules.

5.1.6 Maternal Consideration of Future Consequences

Another aspect of a parental mental functioning that may affect child outcomes is their consideration of future consequences (CFC). This refers to the extent to which individuals consider the future consequences of their behaviour (Strathman, Gleiche, Boninger, & Edwards, 1994). Although this area of research is less developed, it suggests that parents' future orientation has an impact on their children's economic behaviour (Webley & Nyhus, 2006). Furthermore, social learning theory posits that children learn through observing the behaviour of adults in their environment (Bandura, 1977). Bandura and Mischel (1965) reported that children changed their delay of gratification behaviour based on the behaviour of the model which they had been exposed to. Thus children may have a similar level of CFC as their parents through observing the behaviour of their parents. Children who are able to delay gratification at age four years have been later described as more successful in school and better able to cope with stress and frustration than those who were not able to delay gratification (Mischel, Shoda, & Rodriguez, 1989). CFC is important in the context of the *PFL* Programme as it has been shown that those from higher income groups are more likely to be able to delay gratification than those from lower income groups (Lawrence, 1991; Schneider & Lysgaard, 1953).

5.1.7 Overview

The relationship between parental mental well-being, personality, and child developmental outcomes is particularly important in the context of the *PFL* Evaluation as research indicates that women from lower SES backgrounds, especially those with young children, are more likely to experience psychological difficulties (Kaplan, Roberts, Camacho, & Coyne, 1987; Liaw & Brooks-Gunn, 1994). Furthermore, affluence has been found to protect against the negative influence of depression (Petterson & Albers, 2001), further elucidating the importance of promoting positive mental health in the *PFL* cohort.

5.2 Instruments

5.2.1 Maternal Mental Well-being

Maternal mental well-being was assessed using the five item ($\alpha = .82$) WHO-5 (World Health Organisation, 1998), a measure of positive mental health. Mothers were presented with five statements related to how they have been feeling over the past two weeks and asked to rate how often they have felt that way on a six-point Likert scale ranging from zero meaning at no time to five meaning all of the time. A raw score was obtained by summing all of the responses, giving a range of zero to 25. Raw scores were then transformed into percentages by multiplying the raw score by four, resulting in a range of scores from zero to 100, with lower scores, particularly those below 50, indicative of poor mental well-being. Therefore, scores are presented as both a continuous indicator of mental well-being and as a binary variable representing the proportion of mothers who scored below 50%, therefore demonstrating poor well-being. Risk of postnatal depression was assessed using a single yes/no question assessing if the mother had been diagnosed with postnatal depression in any previous pregnancy.

5.2.2 Maternal Attachment Style

Maternal attachment style was measured using the short version of the Vulnerable Attachment Style Questionnaire (VASQ; Bifulco, Mahon, Kwon, Moran, & Jacobs, 2003). This brief self-report measure was developed to assess adult attachment style in relation to depression as it identifies individuals with attachment styles vulnerable for depressive disorders. The VASQ yields three scores: an insecurity score (3 items, α = .72), a proximity seeking score (3 items, α = .54), and a total vulnerable attachment score (6 items, α = .65). Mothers were presented with items related to how they feel about other people (e.g., I miss the company of others when I am alone) and asked to rate how much they agree with each item on a five-point Likert scale ranging from one representing strongly disagree to five illustrating strongly agree. Responses are presented as an insecure attachment style and proximity seeking attachment style score, each ranging from three to 15, and as a total vulnerable attachment score ranging from six to 30. In all cases, higher scores represent more vulnerable attachment styles. In addition to these continuous scores, binary variables were created to represent the proportion of mothers with scores falling above seven on the insecure attachment style and proximity seeking subscales, and above 15 on the total scale. Scores above these cut-offs are considered to be indicative of vulnerable attachment styles as characterised by high insecure attachment behaviours as well as high proximity seeking behaviours.

5.2.3 Maternal Self-Efficacy

Maternal self-efficacy was measured using seven items of the mastery subscale from the Pearlin Self-efficacy Scale (Pearlin & Schooler, 1978) and six items of parental self-efficacy from the Abecedarian study (Borkowski, et al., 2001). Mothers were presented with 13 items related to how they feel about themselves, their life so far, and becoming a parent, and asked to rate how much they agree or disagree with each item on a scale ranging from zero meaning strongly disagree to four signifying strongly agree. These measures provide scores on two subdomains including mastery (7 items, α = .72), the degree to which the mother feels she has control over things that happen to her, and parenting self-efficacy (6 items, α = .69), the mothers' belief that she is able to effectively parent her child/children, as well as an overall maternal self-efficacy (13 items, α = .80) score. The 'maternal efficacy score' was generated by summing the responses to each of the 13 individual items and dividing by 13 to get the average score. All scores represent the average response to all items within that scale or subscale and range from zero to four with higher scores indicating higher self-efficacy.

5.2.4 Maternal Self-Esteem

Maternal self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965), a six item (α = .83) measure assessing maternal self-esteem on a continuous scale. Mothers were presented with statements about how they feel about themselves and were asked to rate how much they agree or disagree with each statement on a four point Likert scale ranging from zero meaning strongly agree to three representing strongly disagree. Scores were created by summing responses to all items, providing a range of zero to 18 with higher scores representing higher self-esteem.

5.2.5 Maternal Personality

Maternal personality was measured using the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), a short version of the 44 item Big-Five Inventory (BFI; John & Srivastava, 1999). The TIPI assesses individual scores on the big five personality traits of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experiences. Mothers were presented with words reflecting how individuals interact with those around them and were asked to indicate how much they agree or disagree that the words describe them on a seven point Likert scale ranging from strongly disagree to strongly agree. Scores for each personality domain were presented as an average of responses to each of the two items measuring extraversion (α = .53), agreeableness (α = .28), conscientiousness (α = .35), emotional stability (α = .58), and openness to experience (α = .34). Scores on each domain range from one to seven with higher scores indicating higher self-rated agreement that the mother displays that type of personality trait.

5.2.6 Maternal Consideration of Future Consequences

Maternal consideration of future consequences were measured using three items (α = .77) from the Consideration of Future Consequences Scale (CFC; Strathman et al., 1994), a measure of the extent to which people consider distant versus immediate consequences of possible behaviours. Three items from the original 12 items were chosen for use in the *PFL* Evaluation as they provided the strongest factor loadings in a factor analysis using the DNB household survey containing 2,000 observations, suggesting that they adequately capture the concept of an individual's consideration of future consequences. Mothers were presented with items regarding their consideration of future consequences (e.g., In general, I ignore warnings about future problems because I think these problems will be solved before they get critical) and asked to indicate how much the statement describes them on a five point scale ranging from not at all like me to very much like me. Scores were calculated by summing responses to all three items on this scale, and reversing the score resulting in a possible range of scores from three to fifteen, with higher scores being indicative of higher considerations of future consequences of current behaviours. Individuals who score low on this measure are expected to focus more on immediate, versus distant needs and concerns, thus will act in a way to satisfy immediate needs. Mothers who score high on this measure are expected to consider the future implications of their behaviour, thus distant goals are the influence for their current actions.

5.3 Results

Tables 5.1 and 5.2 illustrate the descriptive statistics for maternal well-being and personality. Specifically, differences for participants in the low and high treatment groups are examined, as well as differences between the aggregate *PFL* group and the comparison community on 19 measures related to maternal mental well-being and personality. Differences between the low and high *PFL* treatment groups reached significance on three of the measures examined and eight differences were identified between the *PFL* cohort and comparison community.

5.3.1 Maternal Mental Well-being

There were no differences in mental well-being between the low and high treatment groups. However, the *PFL* cohort statistically differed from the comparison community in terms of overall well-being ($p<.10$) and the proportion of mothers who indicated poor well-being ($p<.10$). The low treatment group and high treatment groups scored a well-being score of 58.16 and 53.96 respectively, while the comparison group received a score of 60.65. In regards to reaching the cut-off for poor mental well-being, 36% of the low treatment group and 43% of the high treatment group experienced poor well-being, compared to 29% of the comparison group. Among the non first time mothers, 22% in the low treatment group and 17% in the high treatment group reporting having previously been diagnosed with postnatal depression, compared to 16% in the comparison group, suggesting that all groups are experiencing the same level of risk for postnatal depression.

5.3.2 Maternal Attachment Style

Differences between the low and high *PFL* treatment groups reached statistical significance on one measure of vulnerable attachment, however the comparison group differed from the aggregate *PFL* group on four of the six measures analysed. A significantly higher proportion of the high treatment group (52%) had scores indicative of at risk levels of insecure attachment compared to the low treatment group (39%). Although differences between the *PFL* cohort and the comparison community did not reach significance on the proportion of mothers indicating highly insecure attachment (46% compared to 36%), the total insecure attachment continuous score was significantly different for the two groups ($p<.10$), with the mothers in the *PFL* cohort scoring 7.69 and mothers in the comparison community scoring 7.09. In addition, the *PFL* cohort displayed significantly more proximity seeking attachment behaviours compared to the comparison community ($p<.05$). Similarly, a higher proportion of mothers in the *PFL* cohort had scores indicative of at risk levels of proximity seeking attachment behaviours compared to the comparison community ($p<.10$), with 94% of mothers in the *PFL* cohort demonstrating high proximity seeking attachment scores compared to only 86% in the comparison community. Although differences between the aggregate *PFL* cohort and the comparison community did not reach significance for the proportion of mothers indicating highly vulnerable attachment (73% compared to 65%), the total vulnerable attachment continuous score was significantly different for the two groups ($p<.05$), with mothers in the *PFL* cohort scoring 18.03 and mothers in the comparison community scoring 16.84.

5.3.3 Maternal Self-Efficacy

Differences between the low and high *PFL* treatment groups reached significance on one of the three measures of self-efficacy. Similarly, differences between the aggregate *PFL* cohort and the comparison community reached significance on one measure. Mothers in the low treatment group scored significantly higher than the high treatment group on the parenting self-efficacy subdomain ($p<.10$). Additionally, the *PFL* cohort scored below participants in the comparison group on the parenting self-efficacy subdomain ($p<.05$). In terms of Pearlin mastery, the low and high treatment groups scored 2.89 and 2.79 respectively, while the comparison group received a score of 2.87. In relation to maternal self-efficacy, the low and high treatment groups scored 3.02 and 2.91 respectively, while the comparison group scored 3.05.

5.3.4 Maternal Self-Esteem

Differences between the low and high *PFL* treatment groups and the aggregate *PFL* cohort and comparison community did not reach significance for the total self-esteem score. The low and high treatment group scored 12.85 and 12.82 respectively, while the comparison group scored 13.04.

5.3.5 Maternal Personality

Differences between the low and high *PFL* treatment groups and the aggregate *PFL* cohort and comparison community did not reach significance on any of the domains of personality. Scores across all domains are relatively similar, with the lowest scores falling on the domain of emotional stability and the highest scores pertaining to the agreeableness personality domain.

5.3.6 Maternal Consideration of Future Consequences

Differences between the low and high *PFL* treatment groups reached significance on the CFC scale at the 10% level. The mean score for mothers in the low treatment groups was 10.33 compared to 9.50 in the high treatment group ($p<.10$). Differences between the aggregate *PFL* cohort and the comparison community were statistically different ($p<.05$). Specifically, the average score of mothers in the comparison community was 10.79 suggesting that mothers in the comparison community have more consideration of how their behaviours will affect them in the future than mothers in the *PFL* cohort.

5.4 Key Findings

- Mothers in the low treatment group differed statistically from mothers in the high treatment group in regards to three of the 19 mental health, well-being, and personality outcomes analysed. Specifically, mothers in the low treatment group were less likely to score below the cut-off for insecure attachment behaviour, they reported higher levels of parenting self-efficacy, and had more consideration of future consequences.
- Mothers in the comparison community differed statistically from mothers in the aggregate *PFL* group in eight of the 19 outcomes analysed. Specifically, mothers in the comparison group reported better well-being, lower levels of vulnerable attachment, insecure attachment behaviour, and proximity seeking attachment behaviour; they reported higher levels of parenting self-efficacy, and more consideration of future consequences.
- 40% of the *PFL* cohort are at risk of poor mental well-being and one-fifth reported being diagnosed with postnatal depression in a previous pregnancy.
- Almost three-quarters of the *PFL* cohort have high levels of vulnerable attachment styles.
- In regards personality traits, the *PFL* cohort scored highest on agreeableness and lowest on emotional stability.

Table 5.1 - Descriptive Statistics and Permutation Results for HIGH and LOW Treatment Groups: Maternal Mental Well-being & Personality

	N	(n_{HIGH}/n_{LOW})	M_{HIGH}	(SD_{HIGH})	M_{LOW}	(SD_{LOW})	Individual Test p^1
Maternal Well-being							
WHO-5 Total Score	202	(102/100)	53.96	(20.32)	58.16	(22.97)	ns
WHO-5 Below Cut-off	202	(102/100)	0.43	(0.50)	0.36	(0.48)	ns
Incidence of Postnatal Depression in Previous Pregnancies	156	(46/51)	0.17	(0.38)	0.22	(0.42)	ns
Vulnerable Attachment Style Questionnaire (VASQ)							
VASQ Score	199	(101/98)	18.28	(3.80)	17.77	(4.00)	ns
Insecurity Score	199	(101/98)	7.82	(2.51)	7.56	(2.81)	ns
Proximity Seeking Score	199	(101/98)	10.46	(2.17)	10.20	(2.17)	ns
Total Score Cut-off	199	(101/98)	0.77	(0.42)	0.69	(0.46)	ns
Insecurity Score Cut-off	199	(101/98)	0.52	(0.50)	0.39	(0.49)	$p<.10$
Proximity Seeking Score Cut-off	199	(101/98)	0.95	(0.22)	0.93	(0.26)	ns
Pearlin Self-Efficacy Scale							
Parenting Self-Efficacy Mean Score	205	(104/101)	3.04	(0.55)	3.17	(0.53)	$p<.10$
Pearlin Mastery Mean Score	202	(103/99)	2.79	(0.62)	2.89	(0.60)	ns
Maternal Self-Efficacy Mean Score	202	(103/99)	2.91	(0.50)	3.02	(0.51)	ns
Rosenberg Self-Esteem Scale							
Rosenberg Self-Esteem Scale	195	(97/98)	12.82	(2.75)	12.85	(2.83)	ns
Ten Item Personality Inventory (TIPI)							
Emotional Stability	204	(104/100)	3.83	(1.60)	4.04	(1.55)	ns
Conscientiousness	204	(104/100)	5.38	(1.29)	5.52	(1.23)	ns
Openness to Experience	204	(104/100)	4.96	(1.26)	5.09	(1.25)	ns
Agreeableness	204	(103/101)	5.67	(1.16)	5.79	(1.17)	ns
Extraversion	204	(104/100)	5.11	(1.34)	5.17	(1.35)	ns
Considerations of Future Consequences (CFC) Scale							
CFC Total Score	205	(104/101)	9.50	(3.22)	10.33	(3.18)	$p<.10$

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [1] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Table 5.2 - Descriptive Statistics and Permutation Results for *PFL* and Comparison (*LFP*) Groups: Maternal Mental Well-being & Personality

	N	(n_{PFL}/n_{LFP})	M_{PFL}	(SD_{PFL})	M_{LFP}	(SD_{LFP})	Individual Test p^1
Maternal Well-being							
WHO-5 Total Score	300	(202/98)	56.04	(21.72)	60.65	(20.26)	$p<.10$
WHO-5 Below Cut-off	300	(202/98)	0.40	(0.49)	0.29	(0.45)	$p<.10$
Incidence of Postnatal Depression in Previous Pregnancies	154	(97/57)	0.20	(0.40)	0.16	(0.37)	ns
Vulnerable Attachment Style Questionnaire (VASQ)							
VASQ Score	295	(199/96)	18.03	(3.90)	16.84	(3.62)	$p<.05$
Insecurity Score	295	(199/96)	7.69	(2.66)	7.09	(2.40)	$p<.10$
Proximity Seeking Score	295	(199/96)	10.33	(2.17)	9.75	(2.22)	$p<.05$
Total Score Cut-off	295	(199/96)	0.73	(0.44)	0.65	(0.48)	ns
Insecurity Score Cut-off	295	(199/96)	0.46	(0.50)	0.36	(0.48)	ns
Proximity Seeking Score Cut-off	295	(199/96)	0.94	(0.24)	0.86	(0.34)	$p<.10$
Pearlin Self-Efficacy Scale							
Parenting Self-Efficacy Mean Score	303	(205/98)	3.10	(0.54)	3.26	(0.54)	$p<.05$
Pearlin Mastery Mean Score	300	(202/98)	2.84	(0.61)	2.87	(0.66)	ns
Maternal Self-Efficacy Mean Score	300	(202/98)	2.96	(0.51)	3.05	(0.52)	ns
Rosenberg Self-Esteem Scale							
Rosenberg Self-Esteem Scale	292	(195/97)	12.84	(2.78)	13.04	(3.11)	ns
Ten Item Personality Inventory (TIPI)							
Emotional Stability	302	(204/98)	3.93	(1.57)	4.04	(1.61)	ns
Conscientiousness	302	(204/98)	5.45	(1.26)	5.54	(1.41)	ns
Openness to Experience	301	(204/97)	5.02	(1.26)	5.14	(1.31)	ns
Agreeableness	302	(204/98)	5.73	(1.16)	5.67	(1.04)	ns
Extraversion	303	(205/98)	5.14	(1.34)	5.12	(1.48)	ns
Considerations of Future Consequences (CFC) Scale							
CFC Total Score	304	(205/99)	9.91	(3.22)	10.79	(3.27)	$p<.05$

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [1] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Chapter Six

Maternal Health & Pregnancy

6.1 Introduction

Maternal health during pregnancy is influenced by multiple factors including past and current health, dietary and exercise practices, antenatal care, and the use of alcohol, cigarettes, and drugs. Furthermore, the fetal environment and maternal behaviour during pregnancy have significant long-term consequences for a child's health and development. Chapter Six presents information relating to maternal health as a child, mothers' current health status including experience of physical and mental health conditions and Body Mass Index (BMI), health behaviours related to eating and exercise, mothers' utilisation of health services, their antenatal care, use of health supplements during pregnancy, and their substance use during pregnancy.

6.1.1 SES Health Inequalities Across the Lifespan

Evidence on the intergenerational transmission of health status across generations (Eriksson, Bratsberg, & Raaum, 2005), in addition to the well-established finding that lower income groups experience poorer health (Banks, Marmot, Oldfield, & Smith, 2006; Frank, Cohen, Yen, Balfour, & Smith, 2003), suggests that children born into lower SES families are at an increased risk for ill health. Assessing maternal health before and during pregnancy is necessary when considering infant health and development. Maternal health as a child is a useful starting point as poor health in childhood is often associated with multiple adverse consequences later in life including lower educational attainment, inferior labour market outcomes, and worse health in adulthood (Case, Fertig, & Paxson, 2005; Currie, 2004; Currie & Hyson, 1999; Graham & Power, 2004). These factors, in turn, may have an impact on an individual's health status during pregnancy, which will have consequences for the newborn's health and subsequent development.

There is also a socioeconomic gradient in the health of Irish women, with findings from the Lifeways Generational Cohort Study emphasising the significance of SES in predicting the health of pregnant Irish women, with the lowest income groups being less healthy (Segonds-Pichon et al., 2007). Self-reported health status tends to include both physical and psychosocial well-being (Miilunpalo, Vuori, Oja, Pasanen, & Urponen, 1997). Accordingly, the presence or experience of physical or mental health conditions or illnesses that impinge on daily functioning will influence how a mother rates her health. BMI before pregnancy is also a useful indicator of maternal health and may have implications for infant development. It is crucial that pregnant mothers adhere to suitable weight standards, for numerous reasons, including their own health, their child's health, to ease the birthing process, and finally to prepare their body for breastfeeding (Johnson, Rottier, Luellwitz, & Kirby, 2009; Kac, Benicio, Velasquez-Melendez, Valente, & Struchiner, 2004). Research has indicated that low SES populations are simultaneously at risk of being underweight and overweight or obese (Moore, Hall, Harper, & Lynch, 2010; Nikolaou & Nikolaou, 2008; Sobal & Stunkard, 1989). Additionally, obesity presents further complications for pregnant woman as a recent study found that overweight or obese mothers are at higher risk for pregnancy complications, still birth or neonatal death (Johnson et al., 2009; Sebire et al., 2001). Meanwhile, women who become pregnant while underweight are at higher risk for a premature, or small for gestational age babies (Cnattingius, Bergström, Lipworth, & Kramer, 1998).

An explanation posited for the poorer health status of low SES groups is their engagement in more negative behavioural practices in relation to diet and exercise (Stringhini et al., 2010). Proper nutrition and physical activity are vital for promoting and sustaining health, both for the mother and the child. However in Ireland, research has found that lower education and ownership of a medical card, both characteristics of the *PFL* Evaluation population, increase the risk of non compliance with recommended food intake during pregnancy (Murrin et al., 2007). Additionally, lower income groups are less likely to partake in physical activity or follow appropriate dietary patterns (Lynch, Kaplan & Salonen, 1997; Trost, Owen, Bauman, Sallis, & Brown, 2002). Assessing maternal nutrition is crucial as the literature has identified a relationship between poor antenatal nutrition and children's cognitive and behavioural outcomes (Korenman, Miller, & Sjaastad, 1995). Furthermore, poor maternal nutritional intake during the prenatal period can have an adverse effect on the child's neurodevelopment and health in later life (Barker, 1998).

6.1.2 Health Service Use

An individual's use of health services is dependent on a number of factors, including his or her health, awareness of symptoms, belief in the advantages of use, a psychological readiness to attend services, and finally, accessibility (Field & Briggs, 2001; Rosenstock, 2005). The complex relationship between health, income, and health service utilisation is difficult to disentangle. Past research found that higher income groups tend to access medical services more frequently than lower income groups (Lerner & Anderson, 1963; Somers & Somers, 1961). Conversely, newer studies report the opposite (Droomers & Westart, 2004; Layte & Nolan, 2004). An Irish study found that lower income groups are more likely to access GP services, while higher income groups are more likely to make use of more specialist services like the dentist and the optician (Layte & Nolan, 2004). While this relationship may in part be explained by the poorer health of lower income groups (Mackenbach, Bakker, Kunst, & Diderichsen, 2002), that certain low income groups can access GP services free of charge through the Medical Card Scheme also may be a factor.

6.1.3 Prenatal Care

Adequate prenatal care is an important determinant of birth outcomes. For example, whether a pregnancy is planned has been associated with maternal behaviours during pregnancy, which in turn may have an effect on the foetus. Specifically, babies born to mothers who had not intended to conceive have an elevated risk of adverse health outcomes such as low birth weight and premature birth (Kallan, 1993; Kendrick, Gargiullo, Williams, & Bruce 1990; Weller, Eberstein, & Bailey, 1987) and are less likely to be breastfed (Kost, Landry, & Darroch, 1998). Furthermore, unplanned pregnancies are associated with late prenatal care and maternal smoking during pregnancy (Joyce, Kaestner, & Korenman, 2000; Weller et al., 1987). Finally, women with unplanned pregnancies tend to be less educated (Anderson, 1981) and to be at the extremes of age (Bitto et al., 1997). Relatedly, women are less likely to engage in birth control practices if they are depressed (Lehrer, Shrier, Gortmaker, & Buka, 2006), if they do not believe that they will get pregnant (Klein, 1983), if they have low sexual assertiveness (Rickert, Neal, Wiemann, & Berenson, 2000) or, in adolescents who have already given birth, if they are not receiving financial support from their partner (Jurich & Hughes, 1991).

Gaining antenatal care early in pregnancy is important for the outcomes of the infant. Pregnancy complications, such as placental abruptions, are more common in women avoiding antenatal care and there are significantly more infants born with a low birth weight and more fetal deaths and neonatal deaths in women who attend few or none of their antenatal visits (Raatikainen, Heiskanen, & Heinonen, 2007). Education is strongly correlated with early antenatal care as more educated women are generally more likely to recognise pregnancy and begin prenatal care early (Lee & Grubbs, 1995; Melnikow & Alemagno, 1993). There are a number of significant risk factors associated with entering into antenatal care at a late stage. Age is an important determinant, in that teenagers are less likely than older women to start prenatal care early (Kost et al., 1998). In addition, women who live in poor housing conditions, are unemployed, unmarried, or have other children, and engage in smoking, drinking or drug use are also less likely to engage in early antenatal care (Kiely & Kogan, 1993; Kupek, Petrou, Vause, & Maresh, 2002; Pagnini & Reichman, 2000). Furthermore, similar characteristics are associated with participation in antenatal education classes. Women who attend these classes are likely to be older, to have higher levels of education, and tend to be from a higher socioeconomic status than women who do not attend (Lumley & Brown, 1993; Sturrock & Johnson, 1990). Although there is some evidence that attendance at antenatal classes is not associated with parental attachment, childbirth satisfaction and emotional well-being (Nichols, 1995; Sturrock & Johnson, 1990), women who attend these classes are less likely to smoke or drink during pregnancy, to attend more antenatal appointments, and are more likely to breastfeed once the child is born (Bruce, Kahn, & Olsen, 1991; Lumley & Brown, 1993).

6.1.4 Health Behaviour During Pregnancy

Another aspect of maternal behaviour during pregnancy that affects the in utero development of the foetus is the use of health supplements or prenatal vitamins. Vitamins and minerals are important both to the mother's health during pregnancy and to child outcomes. Low levels of vitamin E intake during pregnancy has been associated with asthma in five year old children (Devereux et al., 2006), while deficiencies in vitamin B12 and in folic acid increase the risk of neural tube defects such as Spina Bifida (Li, Watkins, & Rosenblatt, 2009; MRC Vitamin Study Research Group, 1991). The risk for developing iron deficiency is greatest during pregnancy as maternal iron requirements are substantially higher than average iron intakes (Scholl, 2005). This is particularly true of women from low SES backgrounds as they are often less likely to take dietary supplements during pregnancy (Yu, Keppel, Singh, & Kessel, 1996). Maternal anemia in early pregnancy increases the risk of preterm birth or low birth weight babies (Allen, 2000). Young women and those with low levels of education are less likely than older, more highly educated women to follow advice on taking vitamins and minerals (Kost et al., 1998; Matthews, Yudkin, Smith, & Neil, 2000), thus this is of particular importance in the *PFL* Evaluation sample of pregnant women.

The use of cigarettes, alcohol, and drugs are detrimental to health in general, but are particularly damaging during pregnancy. Substance misuse during pregnancy can lead to birth defects and developmental delays (Okah, Cai, & Hoff, 2005), intrauterine growth restrictions resulting in low birth weight (Ventura, Hamilton, Mathews, & Chandra, 2003), and a higher incidence of behavioural problems, such as increased hyperactivity and chronic aggression (Tremblay et al., 2004). The first trimester is particularly important as infectious diseases, neurotoxins and nutrient deficiencies may have a detrimental effect on future brain development (Shonkoff & Phillips, 2000). Low birth weight subsequently affects a child's cognitive abilities leading to poorer performance on IQ tests (Saigal, Szatmari, Rosenbaum, Campbell, & King, 1991), lower academic performance in the future (McCormick, Workman-Daniels, & Brooks-Gunn, 1996), increased likelihood of need for special education or grade retention (Ross, Lipper, & Auld, 1991), and poorer language and social skills (Hack, Klein, & Taylor, 1995). It can also lead to a higher incidence of behavioural problems such as increased attention deficit (Pharoah, Stevenson, Cooke, & Stevenson, 1994). Therefore, it is vital for pregnant mothers to cease substance use as early as possible in order to decrease the risk of these defects and delays.

6.1.5 Overview

Maternal health and health related behaviours both pre and postnatally show clear associations with future child health and development. Additionally, these domains have the capacity to be influenced by home visiting programmes such as *PFL*. The pregnancy characteristics are of particular importance in the *PFL* Evaluation sample of pregnant women as the catchment area is characterised by low education and young motherhood. Interventions have been shown to be successful in reducing smoking during pregnancy (Hartmann, Thorp, Pahel-Short, & Koch, 1996), to increase the number of antenatal visits (Panaretto et al., 2007), and to increase dietary supplements intake (Robbins, Cleaves, Collins, Andrews, Smith, & Hobbs, 2005). Furthermore, Robbins and colleagues (2005) reported that the women who were most influenced by interventions were those who were from a lower SES background and who had not planned their pregnancies, further illustrating the importance of the *PFL* Programme in these communities. Throughout this chapter, baseline characteristics of maternal health and pregnancy outcomes are reported and baseline comparisons are made between the low and high treatment groups, as well as between aggregate *PFL* group and the comparison community.

6.2 Instruments

6.2.1 Maternal Health Across the Lifespan

A number of items were used to assess maternal health across the lifespan.

MATERNAL HEALTH AS A CHILD

Two instruments were used to assess maternal health in childhood. First, a self-rated measure of general health in childhood measured on a five point scale ranging from excellent to poor. This measure was dichotomised to create a binary indicator of ill health in childhood representing poor health (fair or poor) or not (good, very good, or excellent). The second measure was a binary variable indicating whether the mother missed more than one month of school during childhood due to a health condition or not.

MATERNAL GENERAL HEALTH STATUS

Several aspects of general maternal health were assessed. The mother's current health status was assessed using a self-rated measure of general health measured on a five point scale ranging from excellent to poor. This measure was dichotomised to create a binary indicator of ill health representing poor health (fair or poor) or not (good, very good, or excellent). Secondly, a binary indicator was used to capture whether the mother's daily activities or work were limited by a long-term illness, health problem, or disability or not. The mother was also asked whether she has ever been diagnosed with any of 22 listed physical health conditions, in addition to any other condition not included on the list. This measure was dichotomised to create an indicator of whether the mother has a medical condition or not. Similarly, a binary variable was created indicating whether the mother has ever been diagnosed with any of eight listed mental health conditions or not. Finally, a measure of body mass index (BMI) was calculated using maternal self reported height and pre-pregnancy weight.

MATERNAL HEALTH BEHAVIOURS

A number of indicators were used to assess maternal health behaviours. First, to assess maternal eating habits, mothers were asked to rate their eating habits on a five point scale ranging from very healthy to very unhealthy. This measure was dichotomised to create a binary indicator of healthy eating representing health eating (very healthy or healthy) or not (average, unhealthy or very unhealthy). They were also asked to indicate how often they eat certain foods such as brown bread, fruit and sweets, and fatty foods. The responses from these seven questions were summed to create an overall healthy food scale ranging from two to 19, where higher values are indicative of more healthy eating habits. Finally, mothers were asked to indicate the frequency of their exercise habits prior to pregnancy. This measure was used to generate a binary variable indicating whether the mothers engages in exercise three times or more per week or not.

MATERNAL HEALTH SERVICE USE

Maternal health service use was assessed by asking mothers if they had attended any of the 24 listed health services in the last year. This measure was used to generate a summative scale indicating how many services the mother used in total over the previous year. The mothers were also asked to indicate how many times in the last year they have visited their GP for non-pregnancy related conditions. This was used to generate a summative scale indicating the total number of GP visits in the previous year.

6.2.2 The Pregnancy

PAST AND CURRENT PREGNANCY INFORMATION

Several questions assessed information on past and current pregnancies. In relation to the current pregnancy, mothers were asked if they were using any type of birth control practices at the time they became pregnant. Responses to this question were dichotomised indicating the use of birth control practices if they stated using valid forms of birth control such as the contraceptive pill, condoms, patches, injections, or coils. Participants were also asked if the pregnancy was planned or not. A number of questions were asked to gain information about the level of prenatal care that the mother was engaging in. Specifically, two continuous measures were generated including the week in which the pregnancy was confirmed and the week in which the mother attended her first antenatal visit. A binary variable was used to assess whether the mother had attended or planned to attend antenatal classes or not.

PRENATAL HEALTH SUPPLEMENT USE

A series of questions assessed maternal use of health supplements either before or during pregnancy. This resulted in five binary variables indicating whether the mother used multivitamins, folic acid, iron, calcium, or other health supplements either before or during the pregnancy or not.

6.2.3 Maternal Substance Use During Pregnancy

The mothers were asked a number of questions related to their past and current use of cigarettes, alcohol, and drugs.

SMOKING BEHAVIOUR

Mothers were asked if they smoked prior to pregnancy and a binary indicator was generated of whether the mother smoked during pregnancy or not. Additionally, mothers who were still smoking during pregnancy were asked to indicate how many cigarettes they smoke, on average, per day.

DRINKING BEHAVIOUR

Mothers were asked about their drinking habits prior to pregnancy. This information was used to generate a variable indicating how many drinks they typically drank per week prior to becoming pregnant. Additionally, a binary indicator was generated representing whether the mother drank alcohol during pregnancy or not. Finally, mothers who were still drinking during pregnancy were asked to indicate how many drinks they had, on average, per week.

DRUG USE BEHAVIOUR

To gain an insight into maternal drug use, mothers were asked about their use of illegal drugs before and during pregnancy. They were asked to indicate how often, if ever, they have used a list of 15 illegal drugs. Responses were recorded on a four category indicator ranging from never to regularly. This information was used to generate a binary variable representing if the mother ever consumed any of the listed drugs or not. Finally, a binary variable indicating whether the mother was consuming drugs during pregnancy or not was created.

6.3 Results

Tables 6.1 and 6.2 present the descriptive statistics related to maternal health status across the lifespan, the pregnancy, and maternal substance use during pregnancy within the low and high *PFL* treatment groups and the comparison community. Specifically, differences between the low and high treatment groups are examined, as well as differences between the aggregate *PFL* group and the comparison community on 29 measures related to maternal health. Differences between the low and high *PFL* treatment groups reached significance on one of the measures and nine differences were identified between the *PFL* cohort and comparison community.

6.3.1 Maternal Health Across the Lifespan

There was one significant difference between the low and high treatment groups in regards the 12 indicators of maternal health analysed. However, the aggregate *PFL* group and the comparison group differed on three of the indicators examined.

MATERNAL HEALTH AS A CHILD

There were no statistically significant differences in maternal health during childhood, as measured by self-rated health and the proportion of mothers who missed school for one month or more due to illness, between the low and high *PFL* treatment groups and the aggregate *PFL* and community comparison groups. On average, 7% and 5% of the low and high treatment groups respectively rated their health as fair or poor in childhood, compared to 5% in the comparison community. While approximately 9% of the low treatment group, 15% of the high treatment group, and 7% of the comparison group missed school for more than one month in childhood due to illness.

MATERNAL GENERAL HEALTH STATUS

There was one statistically significant difference in the current health status of mothers in the low and high treatment groups, and similarly only one difference between the aggregate *PFL* and comparison community groups. Approximately 13% of mothers in the low treatment group and 10% in the high treatment group rated their current health as fair or poor, compared to 6% in the comparison group, while 8% and 11% of the low and high treatment groups respectively reported having a long term chronic illness that affects their daily activities, compared to 5% in the comparison group. Although few mothers indicated the presence of a health condition that affected daily activities, a high proportion of mothers reported being diagnosed with a physical health condition in the past. Mothers in the high treatment group were significantly more likely to report a past medical condition than the low treatment group ($p<.10$), with 62% of the low treatment group, 75% of the high treatment group, and 67% of the comparison group reporting a past medical condition. Migraines, asthma and back pain were the three most commonly listed medical conditions. A relatively smaller proportion of the sample reported being diagnosed with a mental health condition in the past. Approximately 24% and 28% of the low and high *PFL* treatment groups respectively reported having a mental health condition, compared to 37% of the comparison group. While the differences between the low and high treatment groups were not statistically different, differences in mental health were reported between the aggregate *PFL* sample (26%) and the comparison community (37%), with the comparison community having a significantly higher proportion of mental health conditions than the aggregate *PFL* sample ($p<.05$). The most common mental health conditions reported were depression and anxiety. Finally, the average pre-pregnancy Body Mass Index (BMI) of the three groups was within the normal weight range, with the low treatment reporting an average of 23.87, compared with 24.19 in the high treatment group, and 23.88 in the comparison community.

MATERNAL HEALTH BEHAVIOURS

There were no statistically significant differences in regards maternal health behaviours between the low and high *PFL* treatment groups. However, there were two significant differences between the aggregate *PFL* sample and the comparison community on these measures. In terms of self-rated eating habits, 42% of mothers in the low treatment group and 34% of mothers in the high treatment group reported having healthy eating habits, compared to 48% in the comparison group. While the differences between the low and high treatment groups were not statistically different, differences in healthy eating were reported between the aggregate *PFL* sample (38%) and the comparison community (48%), with the comparison community reporting a significantly higher rate of healthy eating. The average score on the healthy food scale was 9.95 for the low treatment group, 9.44 for the high treatment group, and 9.68 for the comparison group. This corresponds to reporting rarely or sometimes to questions related to eating food considered to be healthy. In terms of the frequency of exercise before becoming pregnant, 45% and 38% of the low and high treatment groups respectively reported taking regular exercise as defined by engaging in exercise more than three times per week. However, the comparison group reported a significantly lower rate of pre-pregnancy exercise than the aggregate *PFL* sample ($p<.10$), with 41% of the *PFL* cohort and 30% of the comparison community reporting that they engaged in regular exercise.

MATERNAL HEALTH SERVICE USE

There were no statistically significant differences in regards to maternal health service use between the low and high *PFL* treatment groups or between the aggregate *PFL* and community comparison groups. The low and high treatment groups used approximately 2.39 and 2.44 health services respectively in the last 12 months, while the comparison group used 2.61. The average number of GP visits was 2.95 among the low treatment group, 3.37 among the high treatment group, and 3.08 among the comparison group. There were no statistically significant differences between the number of GP visits among the aggregate *PFL* group and the comparison group.

6.3.2 The Pregnancy

There were no differences between the low treatment group and the high treatment *PFL* group in regards any of the 10 indicators of pregnancy care analysed, however there were significant differences between the aggregate *PFL* group and the comparison group on four of the indicators examined.

PAST AND CURRENT PREGNANCY INFORMATION

In terms of birth control practices, 33% of mothers in the low treatment group and in the high treatment group were engaging in some form of effective birth control, while the use of valid forms of birth control was significantly lower ($p<.10$) in the comparison group with an average of 23% mothers using birth control at the time of their pregnancy. Of the mothers in the low treatment group, 30% stated that the pregnancy was planned, compared to 29% of mothers in the high treatment group. However, at 48%, a significantly higher proportion of mothers in the comparison community stated that their pregnancy was planned ($p<.01$). On average, the pregnancy was confirmed in week seven for the low treatment group and week six for the high treatment group and the comparison group. In terms of attending the first antenatal visit at the hospital, mothers in the low treatment group attended during week 17 on average, while mothers in the high treatment group and the comparison group first attended during week 16 on average. In regards mothers' past, or intended, attendance at antenatal classes, 33% of those in the low treatment group and 40% of those in the high treatment group indicated that they either have attended or they intend to attend these classes. However, there was a significant difference between the aggregate *PFL* sample and the comparison group in regards the use of antenatal classes ($p<.05$), with 52% of respondents in the comparison group indicating that they either have attended or intend to take part in antenatal classes compared to 37% in the *PFL* sample.

PRENATAL HEALTH SUPPLEMENT USE

On average 34%, 42%, and 44% of the low, high, and the comparison groups respectively indicated they took multivitamins either since or before becoming pregnant. The vast majority of participants in all groups indicated that they have taken folic acid: 92% of the low treatment group, 93% of the high treatment group, and 90% of the comparison group. The only significant difference across the groups was in the use of iron. While there was no significant difference in iron usage between the low and high treatment groups, with 66% and 68% respectively reporting that they have taken iron since or before becoming pregnant, there was a significant difference between the aggregate *PFL* cohort and the comparison group ($p<.05$), with 79% of the comparison community taking iron compared to only 67% of the *PFL* cohort. Very few participants across any of the groups took either calcium supplements or any other supplement during pregnancy. Just 3% of the low treatment group took calcium and 2% indicated that they took some other supplement, while 6% of the high treatment group took calcium and 4% took some other supplement, finally 6% of the comparison group took calcium and 3% took some other supplement.

6.3.3 Maternal Substance Use During Pregnancy

There were no statistically significant differences between the substance use behaviour of the low and high treatment groups, while there were differences between the aggregate *PFL* group and comparison group for two of the seven outcomes analysed.

SMOKING BEHAVIOUR

Approximately 48% of mothers in the low treatment group and 51% of mothers in the high treatment group smoked during pregnancy, compared to 34% of mothers in the comparison group. This difference between the aggregate *PFL* group and comparison group was statistically significant, such that more mothers in the *PFL* group smoked during pregnancy ($p<.05$). For mothers who did smoke during pregnancy, the average amount of cigarettes smoked was 9.71 for the low treatment group, 10.64 for the high treatment group, and 7.91 for the comparison group. The aggregate *PFL* sample smoked a significantly greater amount of cigarettes than the comparison group ($p<.10$).

DRINKING BEHAVIOUR

Among the mothers who did drink alcohol before pregnancy, the average number of drinks consumed per week was 7.30 within the low treatment group, 7.12 in the high treatment group, and 6.93 within the comparison group. In total, 29% of mothers in the low treatment group and 28% of mothers in the high treatment group drank during pregnancy, compared to 32% of mothers in the comparison group. The average number of drinks consumed per week by those who consumed alcohol during pregnancy was 2.93 in the low treatment group, 3.15 in the high treatment group and 3.13 in the comparison group.

DRUG USE BEHAVIOUR

In total, 15% of the low treatment group, 13% of the high treatment group, and 15% in the comparison group reported taking illegal drugs prior to becoming pregnant. During pregnancy, 3% of the low treatment group, 1% of the high treatment group, and 2% of the comparison group consumed illegal drugs during pregnancy.

6.4 Key Findings

- Mothers in the low treatment group only differed statistically from mothers in the high treatment group in regards to one of the 29 health and pregnancy outcomes analysed.
- Mothers in the comparison community differed significantly from mothers in the aggregate *PFL* group in nine of the 29 outcomes analysed. Specifically, mothers in the comparison community reported more mental health problems, better healthy eating habits, and lower levels of regular exercise before pregnancy. In addition, more mothers in the comparison group reported their pregnancy was planned, more participated in antenatal classes, and more reported taking iron supplements either before or during pregnancy. In addition, fewer mothers in this group reported smoking during pregnancy and, of those who did smoke, they smoked fewer cigarettes, compared to the aggregate *PFL* group.
- Approximately 9% of the *PFL* group and 5% of the comparison group have a long-term chronic illness.
- Just over one-quarter of the *PFL* group have been diagnosed with mental health conditions in the past.
- Over two-thirds of the *PFL* cohort did not plan their pregnancy.
- Folic acid and iron supplements were the most commonly used health supplements during pregnancy.
- Almost half of the *PFL* sample smoked, over one-quarter drank alcohol, and 2% took illegal drugs during pregnancy.

Table 6.1 - Descriptive Statistics and Permutation Results for HIGH and LOW Treatment Groups: Maternal Health & Pregnancy

	N	(n_{HIGH}/n_{LOW})	M_{HIGH}	(SD_{HIGH})	M_{LOW}	(SD_{LOW})	Individual Test $p^{\dagger}$
Health in Childhood							
Self-Rated Ill Health as a Child	205	(104/101)	0.05	(0.21)	0.07	(0.26)	ns
Missed School Due to Health	204	(103/101)	0.15	(0.35)	0.09	(0.29)	ns
General Health Status							
Self-Rated Health	205	(104/101)	0.10	(0.30)	0.13	(0.34)	ns
Activity Limited by Illness	205	(104/101)	0.11	(0.31)	0.08	(0.27)	ns
Physical Health Condition	205	(104/101)	0.75	(0.44)	0.62	(0.49)	$p<.10$
Mental Health Condition	205	(104/101)	0.28	(0.45)	0.24	(0.43)	ns
Pre-pregnancy BMI	169	(88/81)	24.19	(4.75)	23.87	(4.69)	ns
Maternal Health Behaviours							
Self-Rated Healthy Eating Habits	205	(104/101)	0.34	(0.47)	0.42	(0.50)	ns
Healthy Food Scale	202	(102/100)	9.44	(3.06)	9.95	(3.28)	ns
Regular Exercise	205	(104/101)	0.38	(0.49)	0.45	(0.50)	ns
Health Service Use							
# Health Services Used in Previous Year	205	(104/101)	2.44	(1.52)	2.39	(1.25)	ns
# of Non-pregnancy Related GP Visits in Previous Year	200	(100/100)	3.37	(6.41)	2.95	(3.56)	ns
The Pregnancy							
Birth Control Practices	203	(104/99)	0.33	(0.47)	0.33	(0.47)	ns
Planned Pregnancy	203	(103/100)	0.29	(0.46)	0.30	(0.46)	ns
Week Pregnancy Confirmed	204	(104/100)	6.32	(3.56)	6.56	(3.86)	ns
Week at First Antenatal Visit	156	(80/78)	15.83	(5.77)	16.77	(5.43)	ns
Participation in Antenatal Classes	190	(97/93)	0.40	(0.49)	0.33	(0.47)	ns
Health Supplement Use							
Multivitamins	205	(104/101)	0.42	(0.50)	0.34	(0.47)	ns
Folic Acid	205	(104/101)	0.93	(0.25)	0.92	(0.27)	ns
Iron	205	(104/101)	0.68	(0.47)	0.66	(0.47)	ns
Calcium	205	(104/101)	0.06	(0.23)	0.03	(0.17)	ns
Other Health Supplement	205	(104/101)	0.04	(0.19)	0.02	(0.14)	ns
Health Supplement Use							
Smoked During Pregnancy	205	(104/101)	0.51	(0.50)	0.48	(0.50)	ns
Number of Cigarettes Smoked per day During Pregnancy	101	(53/48)	10.64	(5.93)	9.71	(6.23)	ns
Number of Alcoholic Drinks in a Week (before pregnancy)	174	(84/90)	7.12	(4.78)	7.30	(5.30)	ns
Alcoholic Drink Consumed During Pregnancy	205	(104/101)	0.28	(0.45)	0.29	(0.45)	ns
Number of Alcoholic Drinks in a Week (during pregnancy)	53	(26/27)	3.15	(1.71)	2.93	(1.38)	ns
Ever Used Drugs Before Pregnancy	205	(104/101)	0.13	(0.34)	0.15	(0.36)	ns
Used Drugs During Pregnancy	180	(91/80)	0.01	(0.10)	0.03	(0.18)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [†] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Table 6.2 - Descriptive Statistics and Permutation Results for *PFL* and Comparison (*LFP*) Groups: Maternal Health & Pregnancy

	N	(n_{PFL}/n_{LFP})	M_{PFL}	(SD_{PFL})	M_{LFP}	(SD_{LFP})	Individual Test p^1
Health in Childhood							
Self-Rated Ill Health as a Child	304	(205/99)	0.06	(0.24)	0.05	(0.22)	ns
Missed School Due to Health	303	(204/99)	0.12	(0.32)	0.07	(0.26)	ns
General Health Status							
Self-Rated Health	304	(205/99)	0.11	(0.32)	0.06	(0.24)	ns
Activity Limited by Illness	304	(205/99)	0.09	(0.29)	0.05	(0.22)	ns
Physical Health Condition	304	(205/99)	0.69	(0.46)	0.67	(0.47)	ns
Mental Health Condition	303	(205/98)	0.26	(0.44)	0.37	(0.48)	$p<.10$
Pre-pregnancy BMI	251	(169/82)	24.04	(4.71)	23.88	(5.15)	ns
Maternal Health Behaviours							
Self-Rated Healthy Eating Habits	304	(205/99)	0.38	(0.49)	0.48	(0.50)	$p<.10$
Healthy Food Scale	301	(202/99)	9.69	(3.17)	9.68	(2.74)	ns
Regular Exercise	304	(205/99)	0.41	(0.49)	0.30	(0.46)	$p<.10$
Health Service Use							
# Health Services Used in Previous Year	304	(205/99)	2.41	(1.39)	2.61	(1.06)	ns
# of Non-pregnancy Related GP Visits in Previous Year	295	(200/95)	3.16	(5.18)	3.08	(6.30)	ns
The Pregnancy							
Birth Control Practices	301	(203/98)	0.33	(0.47)	0.23	(0.43)	$p<.10$
Planned Pregnancy	302	(203/99)	0.30	(0.46)	0.48	(0.50)	$p<.01$
Week Pregnancy Confirmed	302	(204/98)	6.44	(3.70)	6.12	(3.39)	ns
Week at First Antenatal Visit	256	(158/98)	16.29	(5.61)	15.77	(5.74)	ns
Participation in Antenatal Classes	288	(190/98)	0.37	(0.48)	0.52	(0.50)	$p<.05$
Health Supplement Use							
Multivitamins	304	(205/99)	0.38	(0.49)	0.44	(0.50)	ns
Folic Acid	304	(205/99)	0.93	(0.26)	0.90	(0.30)	ns
Iron	304	(205/99)	0.67	(0.47)	0.79	(0.41)	$p<.05$
Calcium	304	(205/99)	0.04	(0.21)	0.06	(0.34)	ns
Other Health Supplement	304	(205/99)	0.03	(0.17)	0.03	(0.17)	ns
Health Supplement Use							
Smoked During Pregnancy	304	(205/99)	0.49	(0.50)	0.34	(0.48)	$p<.05$
Number of Cigarettes Smoked per day During Pregnancy	135	(101/34)	10.20	(6.06)	7.91	(5.98)	$p<.10$
Number of Alcoholic Drinks in a Week (before pregnancy)	263	(174/89)	7.21	(5.04)	6.93	(5.86)	ns
Alcoholic Drink Consumed During Pregnancy	304	(205/99)	0.28	(0.45)	0.32	(0.47)	ns
Number of Alcoholic Drinks in a Week (during pregnancy)	83	(53/30)	3.04	(1.54)	3.13	(4.73)	ns
Ever Used Drugs Before Pregnancy	304	(205/99)	0.14	(0.35)	0.15	(0.36)	ns
Used Drugs During Pregnancy	266	(180/86)	0.02	(0.15)	0.02	(0.15)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [1] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Chapter Seven

Thoughts about Parenting and Intentions for Newborn Baby

7.1 Introduction

With few exceptions, (e.g., Harris, 1998; Rowe, 1994; Scarr, 1992) there is a consensus that parents play a central role in the development of their children. Parental knowledge of how children develop, parenting behaviours, and planning for a newborn baby have the capacity to modify a child's experiences, ultimately influencing the development of that child. Chapter Seven presents information related to maternal cognitions of infant development, assessment of maternal parenting risks, and maternal intentions for the newborn baby as they relate to breastfeeding and childcare.

7.1.1 Parental Cognition

Parental cognitions have the ability to influence child development both directly, through vertical parent-child interactions, and indirectly, through mediating parenting behaviours directed at children. While cognition encompasses multiple domains of knowledge, this report considers cognition specifically as it relates to maternal understanding of developmental norms and milestones for young children. Some researchers assert that parental understanding of child behaviour affects the way child behaviour is interpreted by the parent (Mills & Rubin, 1990) and it has been argued that knowledge of typical child behaviour has the ability to influence parent-child interactions (see Goodnow, 1988 for review). Furthermore, parental knowledge of child development is consistently found to be lower among parents living in low socioeconomic environments (McLoyd, 1998), parents experiencing depressive symptoms (Cunningham & Boyle, 2002), and primiparous parents (Pleck, 1997). Therefore, increasing maternal knowledge of infant development has the potential to positively influence child development, especially for children living in the *PFL* catchment area.

7.1.2 Parenting Behaviours

Parenting behaviours are uniquely intertwined with parental cognitions and these cognitions have the ability to inform and modify parenting behaviours. Key dimensions of parenting include constructs reflecting parental acceptance or responsiveness, emotional warmth, and demandingness or control (Cummings, Davies, & Campbell, 2000; Maccoby & Martin, 1983). Traditionally, research in the field of parenting has focused on the conceptualization of parenting patterns and has identified parenting styles based on parents' relative use of each of these dimensions to parent their children. Parenting styles characterised by a combination of high responsiveness and high control are most often associated with positive child outcomes (e.g., Baumrind, 1991; Hetherington et al., 1999; Taylor et al., 2004), while those associated with low responsiveness and high control are commonly associated with negative developmental outcomes (Petito & Cummins, 2000). Promoting sensitive and responsive parenting to high risk families may promote positive development for children who are at increased risk for poor developmental outcomes, as well as prevent parental abuse and neglect. To this effect, research has demonstrated that at risk mothers who participated in home visiting programmes during pregnancy displayed lower risk of potential child abuse compared to comparison mothers not receiving a home visiting intervention (Guthrie, Gaziano, & Gaziano, 2009).

7.1.3 Parental Intentions for the Newborn Baby

Cognitions about infant development may also influence parental intentions for the newborn baby. Decisions regarding breastfeeding (e.g., whether to engage) and childcare usage (e.g., whether to use childcare and at what age to start) may be difficult for some families. Certainly, knowledge of child development and the benefits of such activities may influence these decisions. Although the benefits of breastfeeding are well-documented for both mother and child (Ferguson & Woodword, 1999), it is not widely practiced in Ireland as breastfeeding initiation rates in Ireland range from 38% to 55% (UCD School of Public Health and Population Science, 2010). Additionally, low socioeconomic status populations (Economic and Social Research Institute, 2006), younger mothers (Fitzpatrick, Fitzpatrick, & Darling, 1994), and mothers with lower education (Ward, Sheridan, Howell, Hegarty, & O'Farrell, 2004), are less likely to breastfeed, making this a particularly important area of development in the *PFL* catchment area.

Maternal cognitions may also influence the mother's desire to use childcare. Recent studies show that non-parental care may compensate for a low resource home environment among low SES children (Scaramella, Neppl, Ontai, & Conger, 2008). While most children receive some form of non-parental care in their early years, children from low SES backgrounds are less likely to experience extensive care outside the home as low-educated mothers are less likely to be employed (Mistry, Vandewater, Huston, & McLoyd, 2002; Pleck, 1997). Children from low SES families have higher rates of exposure to domestic risk, in terms of poor parenting practices, single parent households, lower levels of stimulation, and fewer resources for child development materials. Consequently low SES children are at greater risk of low cognitive skills and greater socioemotional difficulties as they spend more time in high risk home environments, making this decision especially important for the *PFL* catchment area.

7.1.4 Overview

As noted above, maternal characteristics such as knowledge regarding infant and child development, parenting behaviours, and planning for a newborn baby show clear links with child development. Additionally, these domains have the capacity to be influenced by home visiting programmes such as *PFL*. Throughout this chapter, baseline characteristics of knowledge of infant development, parenting behaviours, and planning for a newborn baby are reported and baseline comparisons are made between the low and high treatment groups, as well as between aggregate *PFL* participants and the comparison community.

7.2 Instruments

7.2.1 Maternal Knowledge of Infant Development

Maternal knowledge of infant development was assessed using the 14-item Knowledge of Infant Development - Short Form (KIDI-SF; MacPhee, 1981), a measure designed to assess knowledge of developmental processes and infant developmental norms. Mothers were presented with 14 items ($\alpha = .47$) related to child developmental milestones and norms and were asked how much they agree or disagree with each statement. Response options range from one representing strongly agree to five signifying strongly disagree. Responses are summed, providing a range of scores from 14 to 70. An indicator of knowledge of infant development was obtained from these raw scores and is represented as the proportion of accurate responses about infant development or the raw score divided by the total possible number of points (i.e., 70). This figure ranges from zero to 100 and can be interpreted as an indicator of maternal knowledge of infant development with higher scores representing greater knowledge.

7.2.2 Assessment of Parenting Risk

Parenting risk of abuse and neglect was assessed using the Adult Adolescent Parenting Inventory 2 (AAPI-2; Bavolek & Keene, 1999). This 40-item measure was designed to assess the parenting and child-rearing attitudes of adult and adolescent parent and non-parent populations. Mothers were asked to rate how much they agree or disagree with a series of questions regarding parenting on a five point Likert scale ranging from one meaning strongly agree to five representing strongly disagree. Based on the known behaviours of abusive parents, responses to the AAPI-2 provide an index of risk for practicing parenting behaviours known to contribute to the maltreatment of children. The AAPI-2 yields scores on five subdomains including parental expectations of children (7 items; α = .66), parental empathy towards children's needs (10 items; α = .71), use of corporal punishment (11 items; α = .70), parent-child family roles (7 items; α = .68), and children's power and independence (5 items; α = .20). Raw scores for the AAPI-2 subdomains are calculated by adding the numerical values for each of the item responses associated with that subdomain. The raw scores for the five subdomains are then converted to standard scores, ranging from one to ten. A binary variable was created from each of these five subdomains using a cut-off score which is indicative of high risk parenting. In addition to these five subdomains, the AAPI-2 provides an overall score of parenting risk (40 items; α = .86) that is presented as an average of the standard scores for each subdomain. Higher scores on the AAPI-2 are indicative of lower risk for abusive parenting, such that higher scores are representative of positive, nurturing, parenting attitudes and a low risk of abuse. A binary at risk variable was also created for the total AAPI-2 score. Finally, a continuous variable was created representing the number of scales for which a respondent was deemed to be at risk.

As the AAPI-2 is a US normed measure, standard scores can be used to describe parenting behaviours in terms of how they compare to the larger US population. Specifically, standard scores ranging from one to three are considered to be low and they represent behaviours endorsed by 16% of the population. Low scores are indicative of high risk for abusive parenting and neglect. Standard scores ranging from four to seven represent the normal range of parenting behaviours and illustrate moderate risk for parenting abuse and neglect. Sixty-eight percent of the US population fall within this normal range. Standard scores ranging from eight to ten are considered high and illustrate positive, nurturing parenting attitudes and represent a low risk for abuse and neglect. Approximately, 16% of the US population have scores falling in this range. As this measure provides a cut-off indicating high risk parenting, an additional continuous variable was calculated to represent the total number of scales on which participants score in the at risk range (i.e., one to three).

7.2.3 Intentions for Newborn Baby

Several questions assessed maternal intentions for the newborn baby as they relate to breastfeeding and childcare usage. Questions regarding maternal breastfeeding in previous pregnancies were also asked. Specifically, the 52% of the sample who indicated they had a previous child were asked if they breastfed their previous child and all mothers were asked if they intended to breastfeed the child they were pregnant with and how long in months they intended to breastfeed their child. Similarly, mothers were asked if they intended to use any type of childcare for the child they were pregnant with and at what age they anticipated starting to use such childcare.

7.3 Results

Tables 7.1 and 7.2 illustrate the descriptive statistics for maternal responses to the KIDI-SF, AAPI-2, and intentions for the newborn baby. They also present the statistical tests comparing the low and high treatment groups, as well as differences between the *PFL* group and the comparison community. Of the 15 measures analysed, the low and high treatment groups differed on three. Significant differences between the aggregate *PFL* group and the comparison community emerged on six of the 15 measures analysed.

7.3.1 Maternal Knowledge of Infant Development

Mothers in the high treatment group indicated they have significantly more knowledge about infant development than mothers in the low treatment group ($p<.05$). Specifically, mothers in the low treatment group scored, on average, 69.84 on the KIDI-SF compared to mothers in the high treatment group who scored 72.25. In addition, mothers in the comparison community indicated that they have significantly more knowledge about infant development than mothers in the *PFL* sample ($p<.10$). Specifically, mothers in the comparison community scored, on average, 72.84 on the KIDI-SF, while the *PFL* sample scored 71.08 on average.

7.3.2 Assessment of Parenting Risk

In terms of the overall AAPI-2 score, mothers in the low treatment group had an average score of 5.22 compared to an average overall score of 5.33 reported by mothers in the high treatment group, and 5.81 reported by mothers in the comparison community. Although differences between the low and high treatment groups did not reach significance, mean ratings for the comparison community were significantly higher than the aggregate *PFL* sample ($p<.01$). Descriptive statistics were calculated to represent the proportion of mothers who received scores ranging from one to three in each category as scores in this provide an index of higher risk of abusive or neglectful parenting. Few mothers fell into the at risk range for the parental expectations of children, use of corporal punishment, and total AAPI-2 at risk score with 11%, 6%, and 10% of women in the low treatment group, 6%, 4%, and 8% of women in the high treatment group, and 4%, 7%, and 6% of women in the comparison community providing scores that were indicative of high risk in these domains. Although few mothers were at risk, more mothers were at risk in the children's power and independence subdomain, with 24% of the low treatment group, 29% of the high treatment group, and 22% of the comparison community providing scores that were indicative of high risk in this domain. In relation to parental empathy, 50% of the low treatment group and 40% of the high treatment group indicated that they were at risk in this domain, however these differences did not reach significance. Yet, 23% of mothers in the comparison group were at risk in the parental empathy subdomain, which is significantly less than the number identified in the *PFL* sample ($p<.01$). Similarly, mothers in the *PFL* sample were significantly more likely to be at risk in the appropriate parent-child roles subdomain than mothers in the comparison community ($p<.05$). Specifically, 23% of mothers in the *PFL* sample provided scores that were indicative of high risk, compared to 13% of mothers in the comparison community. Differences between the total number of scales on which mothers in the low and high treatment groups scored in the at risk category did not reach significance, with mothers in the low treatment group indicating high risk on 1.28 scales, and mothers in the high treatment group indicating high risk on 1.06 scales. However, mothers in the comparison community were at risk in, on average, 0.76, scales a figure that is significantly lower than identified in the *PFL* sample ($p<.05$).

7.3.3 Intentions for Newborn Baby

Of the mothers who indicated they had a previous child, approximately 20% in the low treatment group, 15% in the high treatment group, and 16% in the comparison community indicated they had breastfed that child. Additionally, 30% of the low treatment group, 33% of the high treatment group, and 49% of mothers in the comparison community indicated that they intended to breastfeed the child they were pregnant with. Although differences between the low and high treatment group did not reach significance, significantly more mothers in the comparison community indicated their intentions to breastfeed ($p<.01$). Furthermore, mothers in the low treatment group, high treatment group, and comparison group indicated that they intended to breastfeed their current child for 3.17, 3.67, and 2.67 months respectively.

In terms of intentions for childcare use, 60% of the low treatment group stated they intended to use some form of childcare for the child they were pregnant with, compared to only 45% of the high treatment group, a difference indicating that significantly more women on the low treatment group intend to use childcare for their newborn child ($p<.05$). Differences between the aggregate *PFL* cohort and the comparison community did not reach significance, with 47% of mothers in the comparison community reporting intentions to use childcare. Mothers in the low treatment group indicated they would utilise childcare at a significantly younger age (M_{Low} = 6.31 months; M_{High} = 8.66 months) than mothers in the high treatment group ($p<.10$). However, differences between the aggregate *PFL* cohort and the comparison community did not reach significance (M_{PFL} = 7.31 months; M_{LFP} = 6.11 months). Finally, 21% of mothers in the low treatment group indicated that they intended to use centre-based childcare, compared to 14% of the high treatment group, and 13% of the comparison community.

7.4 Key Findings

- Mothers in the low treatment group differed statistically from mothers in the high treatment group on three of the 15 measures related to parenting and intentions for their newborn baby. Specifically, mothers in the high treatment group display more knowledge about developmental processes and infant developmental norms than mothers in the low treatment group, and more mothers in the low treatment group intend to use some form of childcare and they intend to use childcare at a younger age than do mothers in the high treatment group.
- Mothers in the *PFL* cohort differed significantly from mothers in the comparison community on six of the 15 measures. Specifically, mothers in the aggregate *PFL* sample display less knowledge about developmental processes and infant developmental norms, and demonstrate a higher risk of abuse and neglect than do mothers in the comparison community in regards to the overall AAPI-2 score and the average number of scales mothers indicate being at risk. Mothers in the *PFL* sample are also more likely than mothers in the comparison community to indicate being at risk of abuse and neglect in regards to parental empathy and appropriate parent-child roles. Additionally, fewer mothers in the *PFL* cohort intent to breastfeed their new child.
- Mother's in the *PFL* cohort score 71 out of 100 in terms of their knowledge of infant development.
- Maternal ratings on the AAPI-2 fell between four and seven, which is within the normal range of responses, representing 68% of the average US population. Scores in this range represent moderate risk for abuse and neglect.
- Almost one-third of the *PFL* cohort intend to breastfeed their child.

Table 7.1 - Descriptive Statistics and Permutation Results for HIGH and LOW Treatment Groups: Parenting & Intentions for Newborn Baby

	N	(n_{HIGH}/n_{LOW})	M_{HIGH}	(SD_{HIGH})	M_{LOW}	(SD_{LOW})	Individual Test p^1
Knowledge of Infant Development Inventory Short Form (KIDI-SF)							
KIDI-SF Score	203	(104/99)	72.25	(7.60)	69.84	(8.25)	$p<.05$
Adult Adolescent Parenting Inventory (AAPI-2)							
Total AAPI-2 Standardised Score	205	(104/101)	5.33	(1.47)	5.22	(1.50)	ns
Realistic Parental Expectations of Children At risk	205	(104/101)	0.06	(0.23)	0.11	(0.31)	ns
Parental Empathy At risk	205	(104/101)	0.40	(0.49)	0.50	(0.50)	ns
Belief in the Use of Appropriate Punishment At Risk	205	(104/101)	0.04	(0.19)	0.06	(0.24)	ns
Promoting Children's Power and Independence At Risk	205	(104/101)	0.29	(0.46)	0.24	(0.43)	ns
Appropriate Parent-Child Roles At Risk	205	(104/101)	0.19	(0.40)	0.28	(0.45)	ns
Total AAPI-2 Score At Risk	205	(104/101)	0.08	(0.27)	0.10	(0.30)	ns
Total Number of Scales At Risk	205	(104/101)	1.06	(1.39)	1.28	(1.40)	ns
Breastfeeding Intentions							
Breastfed Previous Child	97	(46/51)	0.15	(0.36)	0.20	(0.40)	ns
Intention to Breastfeed Current Child	186	(94/92)	0.33	(0.47)	0.30	(0.46)	ns
Duration Intending to Breastfeed Current Child (in months)	42	(18/24)	3.17	(2.96)	3.67	(2.51)	ns
Childcare Use							
Intention to Use Childcare	194	(96/98)	0.45	(0.50)	0.60	(0.49)	$p<.05$
Age Intended to Start Childcare (in months)	96	(41/55)	8.66	(6.34)	6.31	(5.46)	$p<.10$
Intention to Use Centre-Based Childcare	194	(96/98)	0.14	(0.34)	0.21	(0.41)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [1] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Table 7.2 - Descriptive Statistics and Permutation Results for *PFL* and Comparison (*LFP*) Groups: Parenting & Intentions for Newborn Baby

	N	(n_{PFL}/n_{LFP})	M_{PFL}	(SD_{PFL})	M_{LFP}	(SD_{LFP})	Individual Test $p^{\dagger}$
Knowledge of Infant Development Inventory Short Form (KIDI-SF)							
KIDI-SF Score	300	(203/97)	71.08	(7.99)	72.84	(8.70)	$p<.10$
Adult Adolescent Parenting Inventory (AAPI-2)							
Total AAPI-2 Standardised Score	304	(205/99)	5.27	(1.48)	5.81	(1.47)	$p<.01$
Realistic Parental Expectations of Children At risk	304	(205/99)	0.08	(0.28)	0.04	(0.20)	ns
Parental Empathy At risk	304	(205/99)	0.45	(0.50)	0.23	(0.42)	$p<.01$
Belief in the Use of Appropriate Punishment At Risk	304	(205/99)	0.05	(0.22)	0.07	(0.26)	ns
Promoting Children's Power and Independence At Risk	304	(205/99)	0.26	(0.44)	0.22	(0.42)	ns
Appropriate Parent-Child Roles At Risk	304	(205/99)	0.23	(0.42)	0.13	(0.34)	$p<.05$
Total AAPI-2 Score At Risk	304	(205/99)	0.09	(0.28)	0.06	(0.24)	ns
Total Number of Scales At Risk	304	(205/99)	1.17	(1.40)	0.76	(1.25)	$p<.05$
Breastfeeding Intentions							
Breastfed Previous Child	154	(97/57)	0.18	(0.38)	0.16	(0.37)	ns
Intention to Breastfeed Current Child	275	(186/89)	0.32	(0.47)	0.49	(0.50)	$p<.01$
Duration Intending to Breastfeed Current Child (in months)	78	(42/36)	3.45	(2.69)	2.67	(1.93)	ns
Childcare Use							
Intention to Use Childcare	292	(194/98)	0.53	(0.50)	0.47	(0.50)	ns
Age Intended to Start Childcare (in months)	140	(96/44)	7.31	(5.93)	6.11	(3.22)	ns
Intention to Use Centre-Based Childcare	290	(194/96)	0.18	(0.38)	0.13	(0.33)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [†] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Chapter Eight

Social Support

8.1 Introduction

8.1.1 Social Support

Although social support, or the support offered through social connections (Lin, Simeone, Ensel, & Kuo, 1979), has been conceptualised in several different ways in the literature, recurring features include structural aspects, such as the size of a person's social network; enacted support, or the provision of specific supportive behaviours such as reassurance or advice; and subjective perceptions of support as experienced by the recipient (Hogan, Linden, & Najarian, 2002). However, in the face of such varying definitions, research consistently demonstrates a strong association between an individual's level of social support and his or her physical and mental well-being (e.g., Cobb, 1976). Social support may operate as a buffering mechanism, whereby it protects an individual against the development of mental health disorders when an individual is exposed to stressors or shocks (Cohen & Wills, 1985; Dalgard, Bjork, & Tambs, 1995). Parental social support, in particular, support for mothers, is linked to various positive outcomes for children, including higher intelligence (Slykerman et al., 2005), better socioemotional skills (Izzo et al., 2000), and a more stimulating home environment (Adamakos et al., 1986) which may promote cognitive gains. While earlier research has tended to focus more on the structural aspects of social support, such as the number of friends and contacts an individual has (e.g., Berkman & Syme, 1979), more recent research shows that such structural aspects do not necessarily translate into supportive relationships (Berkman & Glass, 2000). Therefore, it is imperative that more subjective aspects, such as perceived social support, be assessed, to gain a comprehensive measurement of this construct.

Social support is an important protective factor for individuals residing in disadvantaged communities where the risk of experiencing poor mental and physical health is greater (e.g., Bradley & Corwyn, 2002). Additionally, social support is related to favourable outcomes for women during pregnancy. For example, Harley and Eskenazi (2006) found that maternal social support was associated with a healthy diet, vitamin intake, and less smoking during pregnancy – all factors that have the capacity to affect the in utero development of the foetus. Mothers with low education and low income are particularly at risk for low social support, making this a salient issue in the *PFL* cohort. Other studies have associated maternal support with earlier initiation of prenatal care (Zambrana, Scrimshaw, Collins, & Dunkel-Schetter, 1997), reduced drug and alcohol usage (Stephens, 1985), and reduced pregnancy complications (Norbeck & Anderson, 1989). Naturally, such favourable outcomes for mothers translate into positive outcomes for their infants and children as social support during pregnancy is associated with increased birth weight (Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000), reduced child accident and injury rates (Leininger, Ryan, & Kalil, 2009; Ramsey et al., 2003), and improved general child health status (Kana'iaupuni, Donato, Thompson-Colon, & Steinback, 2005). Furthermore, social support is associated with a reduced likelihood of postnatal depression (Xie, He, Koszycki, Walker, & Wen, 2009), which is a primary risk factor for multiple negative child outcomes, including behaviour problems (Fihrer, McMahon, & Taylor, 2009), impaired cognitive and motor development (Cornish, McMahon, Ungerer, Barnett, Kowalenko, & Tennent, 2005), and psychiatric disorders such as attention deficit hyperactivity disorder (Phillips, Charles, Sharpe, & Mathey, 2009).

Social support may be considered as a single aspect of social capital, a recent construct to emerge from the social science literature. Putnam (1995) defines social capital as the features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit. There is a general consensus that both social support and participation in community organisations forms a central component of social capital (e.g., Shortt, 2004). Research indicates that social capital may have a positive effect on many factors at the individual and community level, including crime levels (Halpern, 2001), individual life satisfaction (Narayan & Cassidy, 2001) interpersonal trust (Bankston & Zhou, 2002), and educational attainment (Aldridge, Halpern, & Fitzpatrick, 2002). Importantly, parental social capital is linked to positive developmental outcomes for children and a number of researchers suggest that socioeconomic inequalities in child development can be explained by differences in social capital among families from different social backgrounds (e.g., Crosnoe, 2004; Kao, 2004; Sampson, Morenoff, & Earls,

1999). It is important to note that much of this research is correlational and therefore inconclusive, due to problems associated with endogeneity and unobserved heterogeneity (Mouw, 2006). However, in a recent experimental study, an intervention which aimed to promote parental social capital led to improvements in children's behaviour as reported by teachers (Gameron, Lopez-Turley, Turner, & Fish, 2010).

8.1.2 Overview

Considering the *PFL* Programme, where parents receive added social support in the form of an information officer and/or mentor, and where links are established with a range of community services, it is important that social support is assessed. This will allow us to detect differences between the groups in terms of the amount of social support perceived by participants, and to investigate if support plays a mediating role for parental and child outcomes. Furthermore, differences in local service use between high and low treatment groups may be investigated. This chapter describes aspects of social capital in the *PFL* and comparison communities. Measures of social capital include maternal perception of social support from various individuals, the number of neighbours known, the frequency of visits to friends and relatives, and the utilization of neighbourhood services (*PFL* cohort only).

8.2 Instruments

8.2.1 Social Support

Mothers rated the amount of support they felt they received from their partner, parents, other close relatives, friends, neighbours, the child's biological father (if not their current partner), and people at work (if applicable). Support was rated on a four point scale ranging from no support to a lot of support. Responses were dichotomised into no/little/some support, or a lot of support. Mothers were also asked questions about structural aspects of social support including how often they meet with friends or relatives not living in their household on a three point scale corresponding to regularly, sometimes, or rarely/never. Response options to this question were dichotomised into regularly, or irregularly. Additionally, mothers reported how many neighbours they know personally with possible response options of zero, 1-3, 4-6, 7-10, or 10+. This question was used to create a binary variable indicating whether the mother knew six or less or more than six neighbours personally. Finally, mothers were asked to rate how satisfied they were with their neighbourhood or area. Responses to this question were dichotomised to dissatisfied/neither satisfied or dissatisfied, or satisfied.

8.2.2 Service Use

Participants in the *PFL* cohort were asked if they had ever used any of the 63 services listed. Services were grouped into the following domains: emergency services, health services, child/family services, employment services, community services, residents associations, adult education services, and other useful services. A binary score for each domain was created indicating whether or not a participant had used any of the services in each domain. Note that these questions were not asked of the comparison community.

8.3 Results

Tables 8.1 and 8.2 report the descriptive statistics on social support and service use within the low and high *PFL* treatment groups and the comparison community. The tables also present the results examining statistical differences in social support in the low and high treatment groups as well as the *PFL* cohort and the comparison community, and service use in the low and high treatment groups. One significant difference emerged between the low and high treatment groups on the 18 measures analysed. Similarly, one difference emerged between the *PFL* cohort and the comparison community on the ten social support measures analysed.

8.3.1 Social Support

Differences in perceived social support between the low and high *PFL* treatment groups or the aggregate *PFL* and comparison group reached significance on one of the ten variables analysed. Overall, the *PFL* cohort report the highest level of support from their partner and the child's biological father, followed by their parents, relations, friends, and work colleagues, while they perceive the lowest level of support from their neighbours. The pattern of support for the comparison group differs slightly with mothers stating that they receive the highest level of support from their partner and the child's biological father, followed by their parents, work colleagues, relations, friends, and neighbours.

In regards the frequency of meeting friends and relatives who do not live in the household, the majority of participants in the low, high, and comparison groups meet with their friends/relatives regularly. Approximately 60% of the low treatment group meet friends/relatives regularly, compared to 67% of the high treatment group, and 59% in the comparison group. Similarly, the majority of *PFL* participants state that they know more than six of their neighbours personally, with 52% of the low treatment group, 54% of the high treatment group reporting that they know six or more of their neighbours. The *PFL* cohort were significantly more likely to know their neighbours than the comparison group ($p<.10$). Specifically, 53% of the *PFL* cohort and 43% of the comparison group reported that they knew six or more of their neighbours personally. Furthermore, the majority of participants are also satisfied with their neighbourhood, with 65% of the low treatment group, 72% of the high treatment group, and 66% of the comparison group indicating that they are satisfied with their neighbourhood.

8.3.2 Service Use

Differences in service use was assessed for the low and high treatment *PFL* groups only. Table 8.1 indicates one statistical difference in service use between the groups out of the eight variables analysed. Specifically, mothers in the high treatment group report using more community services (e.g., Darndale/ Belcamp Resource Centre) than do mothers in the low treatment group ($p<.01$). Health services are the most commonly used services in both the low and high treatment groups, with 67% of the low treatment group, and 75% of the high treatment group using health services. Health services include services such as the local health centre and the well woman clinic. The second most commonly used type of services are child/family services which include childcare and parent resource services. Such services were used approximately by 66% of the low treatment group and by 73% of the high treatment group. The third most commonly used services were emergency services, 51% of the low treatment group and 45% of the high treatment group used emergency services, such as an out of hours doctor service and the Dublin City Council emergency service. For the remaining services, usage was higher among 'other' services, followed by employment services, adult education services, and residents associations.

8.4 Key Findings

- Mothers in the low treatment group did not differ statistically from mothers in the high treatment group in regards any of the ten social support outcomes analysed.
- Mothers in the aggregate *PFL* group differed statistically from mothers in the community comparison in regards to one of the ten social support outcomes analysed. Specifically, mothers in the *PFL* group were more likely than mothers in the comparison group to know six or more of their neighbours personally.
- Mothers in the low treatment group differed statistically from mothers in the high treatment group in regards one of the eight service usage outcomes analysed. Specifically, mothers in the high treatment group used more community services than mothers in the low treatment group.
- The *PFL* participants perceived the most social support from the child's biological father and their partner, and the least social support from their neighbours.
- After community services, health services and child/family services are the most commonly used services among the *PFL* cohort, while residents associations and adult education services are the least used services.
- Approximately two-thirds of the *PFL* sample were satisfied with their neighbourhood.

Table 8.1 - Descriptive Statistics and Permutation Results for HIGH and LOW Treatment Groups: Social Support & Service Use

	N	(n_{HIGH}/n_{LOW})	M_{HIGH}	(SD_{HIGH})	M_{LOW}	(SD_{LOW})	Individual Test $p^{\dagger}$
Social Support							
Support from Biological Father	176	(88/88)	3.64	(0.85)	3.65	(0.90)	ns
Support from Partner	166	(81/85)	3.96	(0.25)	3.87	(0.53)	ns
Support from Parents	197	(99/98)	3.68	(0.75)	3.57	(0.86)	ns
Support from Friends	205	(104/101)	3.36	(0.81)	3.39	(0.77)	ns
Support from Relatives	204	(104/100)	3.43	(0.89)	3.46	(0.76)	ns
Support from Neighbours	191	(97/94)	2.04	(1.12)	2.15	(1.10)	ns
Support from People in Workplace	78	(37/41)	3.19	(0.94)	3.27	(0.87)	ns
Meets Friends Regularly	205	(104/101)	0.67	(0.47)	0.60	(0.49)	ns
Satisfaction with Neighbourhood	205	(104/101)	0.72	(0.45)	0.65	(0.48)	ns
Knows Neighbours	205	(104/101)	0.54	(0.50)	0.52	(0.50)	ns
Service Use							
Used Community Services	204	(103/101)	0.52	(0.50)	0.35	(0.48)	$p<.01$
Used Health Services	204	(103/101)	0.75	(0.44)	0.67	(0.47)	ns
Used Residential Services	204	(103/101)	0.06	(0.24)	0.02	(0.14)	ns
Used Emergency Services	204	(103/101)	0.45	(0.50)	0.51	(0.50)	ns
Used Adult Education Services	204	(103/101)	0.10	(0.30)	0.06	(0.24)	ns
Used Employment Services	204	(103/101)	0.27	(0.45)	0.25	(0.43)	ns
Used Child and Family Services	204	(103/101)	0.73	(0.45)	0.66	(0.47)	ns
Used Other Services	204	(103/101)	0.38	(0.49)	0.32	(0.47)	ns

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [†] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Table 8.2 - Descriptive Statistics and Permutation Results for *PFL* and Comparison (*LFP*) Groups: Social Support & Service Use

	N	(n_{PFL}/n_{LFP})	M_{PFL}	(SD_{PFL})	M_{LFP}	(SD_{LFP})	Individual Test p^1
Social Support							
Support from Biological Father	269	(176/93)	3.64	(0.87)	3.72	(0.74)	ns
Support from Partner	252	(166/86)	3.92	(0.42)	3.91	(0.33)	ns
Support from Parents	291	(197/94)	3.62	(0.81)	3.56	(0.80)	ns
Support from Friends	302	(205/97)	3.37	(0.79)	3.30	(0.87)	ns
Support from Relatives	302	(204/98)	3.45	(0.83)	3.32	(0.88)	ns
Support from Neighbours	280	(191/89)	2.09	(1.11)	2.26	(1.15)	ns
Support from People in Workplace	121	(78/43)	3.23	(0.90)	3.37	(0.85)	ns
Meets Friends Regularly	303	(205/98)	0.64	(0.48)	0.59	(0.49)	ns
Satisfaction With Neighbourhood	303	(205/98)	0.69	(0.46)	0.66	(0.48)	ns
Knows Neighbours	303	(205/98)	0.53	(0.50)	0.43	(0.50)	$p<.10$

Notes: *'N'* indicates the sample size. *'M'* indicates the mean. *'SD'* indicates the standard deviation. [1] two-tailed *p* value from an individual permutation test with 100,000 replications. 'ns' indicates the variable is not statistically significant. '$p<.01$', '$p<.05$' and '$p<.10$' indicate that the test is statistically significant at the 1%, 5%, and 10% level respectively.

Chapter Nine

Report Summary

The *Preparing For Life* Programme is a community-led initiative operated by the Northside Partnership in Dublin, Ireland. It aims to improve the levels of school readiness of young children living in several disadvantaged areas of North Dublin, by intervening during pregnancy and working with families until the children start school. This report summarised the recruitment and randomisation processes and provided a description of the *PFL* Evaluation cohort based on information obtained from mothers during the baseline interview. The report also compared the baseline characteristics of the low and high *PFL* treatment groups as well as the aggregate *PFL* cohort and the comparison community to assess the effectiveness of the randomisation procedure and to determine any group differences that may have been present before the programme began. Specifically, statistical differences on 117 measures of parental demographics, household SES, maternal personality and well-being, health, pregnancy, thoughts about parenting, intentions for the newborn baby, and social support were examined. As the present report serves as a description of baseline characteristics, the information presented here will be linked to future outcomes throughout the six remaining waves of data collection. As more data are collected, longitudinal effects testing the effectiveness of the *PFL* Programme will be analysed, in addition to changes over time in the *PFL* Evaluation cohort.

9.1 *PFL* Recruitment

Based on public health nurses' records, the population-based recruitment rate for the *PFL* cohort, based on all live births during the recruitment phase, was 52%. The sample-based recruitment rate for the *PFL* cohort, based on all approached eligible participants during the recruitment phase, was 67%. Original estimations, provided in the *PFL* tender, on the length of time the recruitment process would take to achieve the sample of 233 mothers under alternative acceptance rate scenarios, assuming 140 pregnancies a year (12 per month), are displayed in Table 9.1. As demonstrated, it was estimated that a recruitment rate of 67% would take approximately 29 months to complete, given the birth rate in the area. Recruitment into the *PFL* Programme began in January, 2008 and finished in August, 2010, lasting a total of 32 months which is in line with original estimations based on the annual birth rate in the *PFL* catchment area.

The sample-based recruitment rate for the comparison community was 36% which is in line with our original expectations that fewer women would be interested in participating in the comparison group as they would not be receiving any intervention.

Table 9.1 - Original Estimations of Length of Recruitment Process Based on Different Acceptance Rates

Acceptance Rate	100%	80%	67%	60%	40%
# Eligible Women to Approach	233	290	350	390	580
Duration of Recruitment (in months)	19	24	29	33	48
Final Sample	233	233	233	233	233

9.2 The Effectiveness of Randomisation

The effectiveness of the *PFL* Programme is being evaluated using a longitudinal randomised controlled trial design. RCTs are the gold standard methodology for evaluating the effectiveness of *PFL* as it provides each participant with an equal opportunity of receiving either the low or high support treatments. Therefore, on average, the observed and unobserved characteristics of the participants should be evenly distributed across the treatment groups before the intervention begins. The aim of this report was to assess any differences between the low and high treatment groups pre-treatment, thus providing an indication of the effectiveness of the randomisation procedure. As demonstrated, the low and high treatment groups were statistically different on only 8% of the measures analysed using the 10% significance level as the

cut-off. This provides clear evidence that the computerised randomisation procedure was effective. As there is quantitative evidence that the low and high treatment groups were similar before engaging in the *PFL* Programme, any differences in observed outcomes throughout the duration of the evaluation can be causally linked to the *PFL* Programme.

As demonstrated in Table 9.2, the low and high *PFL* treatment groups did not differ on the majority of demographic, well-being, health, and social support measures assessed at baseline. Significant differences were found for 9 of the 117 measures (8%). In particular, there were more fathers in the high treatment group who were unemployed, high treatment group mothers were more likely to be at risk of insecure attachment, reported lower levels of parenting self-efficacy, were more likely to have a physical health condition, and had less consideration of future consequences. Additionally, the high treatment group demonstrated greater knowledge of infant development and reported using more community based services than the low treatment group. Finally, more mothers in the low treatment group reported intentions to use childcare for their child and also intended to start their child in childcare at a significantly younger age than mothers in the high treatment group.

Table 9.2 - Summary of Permutation Tests Examining Differences at Baseline by Chapter

	Number of Measures Not Significantly Different at Baseline	
Chapter	*PFL* Low – *PFL* High	*PFL* – Comparison Community
Chapter 4: Parental Demographics & Household SES Indicators	35/36	23/36
Chapter 5: Maternal Well-being and Personality	16/19	11/19
Chapter 6: Maternal Health & Pregnancy	28/29	20/29
Chapter 7: Thoughts About Parenting & Intentions for Baby	12/15	9/15
Chapter 8: Social Support	17/18	9/10
TOTAL NOT STATISTICALLY DIFFERENT	108/117 (92%)	72/109 (66%)

9.3 Comparability of the Community Comparison Group

The report also examined differences between the *PFL* cohort and the comparison community at baseline to test how comparable this group is to the *PFL* participants. It is important to note that participants in the comparison community were not randomised into this group. Rather, they were invited to participate in the study as they were pregnant women living in a socio-demographically similar area to the *PFL* catchment area, yet were not receiving an intervention. Although the selected comparison community area was similar to the *PFL* catchment area, it was not the closest ranking community. Several communities were more closely ranked to the *PFL* catchment area, yet these communities were already experiencing some form of early childhood intervention and therefore were deemed not suitable to serve as a 'services as usual' cohort. Additionally, the mothers in the comparison community are residing in a different area of North Dublin, approximately ten kilometres from the *PFL* communities, therefore, some differences at baseline may be expected. Given these caveats, the aggregate *PFL* cohort and the comparison community differed on 37 of the 109 measures analysed (34%) suggesting some degree of similarity between the two groups. However, it is important to note that measures where differences emerged suggest that the comparison community is a relatively higher socioeconomic status cohort.

In regards to the 34% of measures on which there were significant differences between the *PFL* cohort and the comparison community, differences were found in all domains apart from social support. In particular, mothers and fathers in the comparison community were significantly older than *PFL* parents, there were fewer first time mothers, less teenage fathers, and there was a greater level of ethnic diversity in the comparison community. The comparison community had higher levels of education, less literacy and numeracy problems, higher levels of cognitive resources, fewer were living in social housing, and they reported a higher equivalised income. Mothers in the *PFL* community reported lower levels of well-being, and displayed more vulnerable attachment styles, specifically in terms of proximity seeking behaviours, while the comparison community reported higher rates of parenting self-efficacy, suggesting that mothers in the comparison community have stronger beliefs in their ability to effectively parent their child/children. Furthermore, the comparison community reported greater consideration of future consequences.

In terms of health, mothers in the comparison community reported experiencing more mental health problems. More mothers in the *PFL* community reported smoking during pregnancy, and for those who did smoke during pregnancy, mothers in the *PFL* community reported smoking more cigarettes than those in the comparison community. Furthermore, mothers in the comparison community reported better self-rated eating habits, but lower levels of exercise. Mothers in the *PFL* community also reported knowing more of their neighbours. Additionally, mothers in the comparison community were less likely to be using birth control prior to pregnancy and more likely to report that their pregnancy was planned. Comparison community mothers also reported that they were more likely to be participating in antenatal classes, and they were taking more iron supplements. Several differences also emerged between the *PFL* group and the comparison group in terms of parenting knowledge and risk of abuse and neglect. Specifically, mothers in the comparison community displayed higher levels of parenting knowledge and lower levels of risk of abuse and neglect across three of the seven measures related to parenting. Finally, more mothers in the comparison community intended to breastfeed their new child.

In sum, these results show that the mothers in the comparison community are, for the most part, faring better than mothers in the *PFL* community on domains which have been shown to have clear relationships with child developmental outcomes. One exception, however, is that mothers in the comparison community reported more incidences of mental health problems.

9.4 Longitudinal Evaluation

Although the current report provides a description of maternal responses to the baseline interview, several measures assessed at baseline will be reassessed throughout the data collection phase. For example, the Adult Adolescent Parenting Inventory and the Knowledge of Infant Development are among a few measures that are asked again when the child is twelve months of age, allowing us to gauge changes over time. Furthermore, as this is a longitudinal study, future reports will be able to evaluate links across multiple time points and provide quantitative information regarding the effectiveness of the *PFL* Programme.

9.5 Summary

In conclusion, the baseline report indicates that the randomisation procedure used to assign participants to the *PFL* treatment groups was effective in ensuring few statistically significant differences between the high and low treatment groups prior to the delivery of the intervention. Thus, any observed differences between the groups concerning child and parent outcomes at future data collection waves may be causally linked to the *PFL* Programme. However, given the significant number of differences between the aggregate *PFL* cohort and the comparison community, any analysis of these groups in future reports will have to account for these important baseline differences.

References

Please see the following website for the reference list:

http://geary.ucd.ie/preparingforlife/

preparing for life

planning together for our children

The ATLANTIC Philanthropies

An Roinn Leanaí agus Gnóthaí Óige

Department of Children and Youth Affairs

Northside Partnership