

# **Does the socioeconomic background of pregnant women make a difference to their perceptions of antenatal care? A qualitative case study**

Angela Docherty

Department of Nursing & Midwifery

University of Stirling

Doctor of Nursing

2010

**Declaration**

I declare the work in this thesis to be my own, except where otherwise stated.

Angela Docherty

February 2010

## Contents

Abstract.....	7
Acknowledgements .....	10
List of Figures & Tables.....	11
CHAPTER 1 INTRODUCTION & OVERVIEW OF THESIS .....	12
1.1 Background to Thesis .....	12
1.2 Purpose & Rationale of Study.....	13
1.3 Research Questions .....	16
1.4 Organisation of the Thesis.....	17
CHAPTER 2 LITERATURE REVIEW .....	19
2.1 Introduction.....	19
2.2 Search Strategy & Terminology .....	19
2.3 Health Inequalities: Overview .....	20
2.4 Health Inequalities: Statistical Evidence .....	27
2.5 Health Inequalities throughout the Lifecourse .....	31
2.6 Socioeconomic Deprivation & Pregnancy .....	39
2.6.1 Low Birth Weight.....	40
2.6.2 The Trends in Low Birth Weight.....	40
2.6.3 The Potential Determinants of Low Birth Weight.....	42
2.6.3.1 Age and Constitutional Factors .....	44
2.6.3.2 Individual Lifestyle Factors .....	48
2.6.3.3 Social and Community Networks .....	53
2.6.3.4 Living and Working Conditions.....	57
2.6.3.5 Socioeconomic Background.....	62
2.7 Antenatal Care .....	65
2.7.1 Antenatal Care: the Current Policy Approach.....	65
2.7.2 Targeting of Antenatal Care: the Evidence.....	68
2.7.3 Women’s Perceptions of Current Antenatal Care.....	73
2.7.4 Concluding the Case for Research .....	75
CHAPTER 3 ASPECTS UNDERPINNING RESEARCH.....	78
3.1 Introduction.....	78
3.2 Measurement of Populations and Deprivation .....	78
3.3 Use of the Scottish Index of Multiple Deprivation .....	83
3.4 The Locality Context.....	86
CHAPTER 4 RATIONALE FOR METHODOLOGY.....	90
4.1 Introduction.....	90
4.2 Rationale for a Qualitative Approach .....	90
4.3 Rationale for a Constructivist Qualitative Approach .....	94
4.4 Rationale for Case Study Method .....	96
4.5 Case Study Design.....	98
4.5.1 Case Study Design within this Thesis .....	99
4.6 Case Definition .....	102
4.7 Sampling Strategy in Case Studies .....	102
4.7.1 Sample Size in Case Studies.....	104
4.8 Data Collection in Case Studies (Triangulation).....	105
4.9 Data Analysis in Case Studies.....	109
4.10 Summary of Research Design.....	112
4.11 Research Rigour and Generalisability in Case Studies.....	114
4.12 Methodological Limitations .....	118

CHAPTER 5 RESEARCH METHODS.....	120
5.1 Introduction.....	120
5.2 Ethics & Access to Participants .....	120
5.2.1 University Ethics .....	120
5.2.2 NHS Ethics .....	121
5.2.3 NHS Research & Development Approval.....	122
5.2.4 Specific Ethical Considerations.....	122
5.3 Clinical Site / Context .....	124
5.3.1 The Local Antenatal Process for Low Risk Women.....	125
5.3.1.1 First Antenatal Contact.....	125
5.3.1.2 Pre-scan appointment.....	125
5.3.1.3 Booking Scan Appointment.....	126
5.3.1.4 15 Weeks Gestation.....	126
5.3.1.5 The Preparation for Parenthood Programme .....	127
5.3.1.6 Alternative Services .....	127
5.4 Case Definition and Selection.....	127
5.5 Recruitment & Consent.....	130
5.6 Data Collection .....	133
5.6.1 Multiple Sources of Data.....	134
5.6.1.1 SIMD (2006) Documentation.....	134
5.6.1.2 Researcher Observation .....	134
5.6.1.3 The Interviews .....	135
5.6.1.4 Case Sheet Compilation .....	142
5.6.2 Case Study Database.....	143
5.6.3 Maintaining a Chain of Evidence.....	143
5.7 Data Analysis .....	144
5.7.1 Preliminary Analysis of A Priori Categorical Data.....	146
5.7.2 Ordering of Qualitative Data .....	146
5.7.3 Preliminary Embedded Analysis of Qualitative Data .....	147
5.7.4 Development of Theoretical Propositions.....	147
5.7.5 Substantive Embedded Replication Analysis Within Tails.....	148
5.7.6 Substantive Embedded Replication Analysis Across Tails .....	149
5.8 Validity and Reliability.....	149
5.9 Potential Limitations of the Research Methods .....	150
5.10 Summary .....	151
 CHAPTER 6 PRESENTATION OF RESULTS .....	 152
6.1 Introduction.....	152
6.2 Preliminary Analysis of A Priori Categorical Data.....	152
6.2.1 Comparison of Participants and Non-Participants .....	153
6.2.2 Participant Drop-Out at Second Interview .....	155
6.2.3 The Final Case Sample Groups.....	156
6.2.4 Overview of the Sample Groups .....	160
6.2.4.1 Least Deprived Socioeconomic Group.....	160
6.2.4.2 Most Deprived Socioeconomic Group .....	160
6.2.5 Case Group Analysis of Demographic Variables.....	161
6.2.5.1 Age .....	161
6.2.5.2 Education.....	161
6.2.5.3 Employment.....	163
6.2.5.4 Housing .....	167
6.2.5.5 Scottish Index of Multiple Deprivation (2006) Comparison .....	169
6.2.5.6 Summary of Case Group Comparison .....	171
6.3 Ordering of Qualitative Data .....	173

6.4 Preliminary Embedded Analysis of Qualitative Data .....	174
6.4.1 Care Related Analysis .....	175
6.4.1.1 Perceptions of First NHS Contact .....	175
6.4.1.2 Perceptions at End of First Trimester .....	176
6.4.1.3 Perceptions on Antenatal Education .....	180
6.4.1.4 Perceptions in the Final Trimester.....	184
6.4.2 Resource Related Analysis.....	186
6.4.2.1 NHS Provided Educational Material .....	186
6.4.2.2 External Resources.....	189
6.4.3 Risk Perception Analysis .....	192
6.4.3.1 Smoking and Substance Misuse .....	192
6.4.3.2 Area of Residence .....	195
6.4.4 Summary of Stage Three Findings.....	196
6.5 Development of a Theoretical Proposition .....	197
6.5.1 Developing the Theme of Engagement.....	200
6.6 Concluding the Preliminary Analysis.....	203
CHAPTER 7 SUBSTANTIVE ANALYSIS: ENGAGEMENT .....	205
7.1 Introduction.....	205
7.2 Development of Analytical Codes of Engagement .....	205
7.2.1 Methodological Challenges.....	206
7.2.2 Literature Review & the Analytical Codes of Engagement .....	208
7.2.2.1 Language and Personalisation.....	209
7.2.2.2 Power and Relationships .....	211
7.2.2.3 Health Literacy.....	214
7.2.3. Potential Data Limitations .....	217
7.3 The Substantive Embedded Replication Analysis .....	218
7.4 Language & Personalisation .....	219
7.4.1 Language & Personalisation in the Least Deprived Group .....	219
7.4.2 Language & Personalisation in the Most Deprived Group .....	226
7.4.3 Case Group Code Comparison.....	231
7.4.3.1 Age .....	231
7.4.3.2 Planned Pregnancy.....	232
7.4.3.3 Housing Tenure .....	232
7.4.3.4 Marital Status.....	233
7.4.3.5 Smoking Status.....	233
7.4.3.6 Education Level .....	233
7.4.3.7 Prior Knowledge.....	234
7.4.3.8 Deprivation Status based on Area of Residence .....	234
7.4.3.9 Code Summary .....	235
7.5 Power & Relationships.....	236
7.5.1 Power & Relationships in the Least Deprived Group.....	237
7.5.2 Power & Relationships in the Most Deprived Group.....	242
7.5.3 Case Group Code Comparison.....	246
7.5.3.1 Age .....	246
7.5.3.2 Planned Pregnancy.....	247
7.5.3.3 Housing Tenure .....	247
7.5.3.4 Marital Status.....	247
7.5.3.5 Smoking Status.....	247
7.5.3.6 Education Level .....	248
7.5.3.7 Prior Knowledge.....	248
7.5.3.8 Deprivation Status based on Area of Residence .....	248
7.5.3.9 Code Summary .....	249
7.6 Health Literacy .....	250
7.6.1 Health Literacy in the Least Deprived Group.....	250

7.6.2 Health Literacy in the Most Deprived Group.....	258
7.6.3 Case Group Code Comparison.....	264
7.6.3.1 Age .....	265
7.6.3.2 Planned Pregnancy.....	265
7.6.3.3 Housing Tenure .....	265
7.6.3.4 Marital Status.....	266
7.6.3.5 Smoking Status.....	266
7.6.3.6 Education Level .....	266
7.6.3.7 Prior Knowledge.....	267
7.6.3.8 Deprivation Status based on Area of Residence .....	268
7.6.3.9 Code Summary .....	268
7.7 Comparison Across all Three Codes of Engagement .....	270
7.8 Conclusion.....	272
CHAPTER 8 DISCUSSION .....	274
8.1 Introduction.....	274
8.2 Strengths of the Research .....	274
8.3 Limitations of the Research .....	276
8.4 Research Question One .....	279
8.4.1 Perceived Adequacy of First Antenatal Contact.....	280
8.4.2 Utility of Antenatal Education & Resources.....	282
8.5 Research Question Two .....	288
8.5.1 Language and Personalisation.....	290
8.5.2 Power & Relationships.....	291
8.5.3 Health Literacy.....	294
8.5.4 Engagement, Adaptability and Individual Need.....	296
8.5.5 Implications for Practice.....	298
8.5.6 The Identification of those at Risk of Low Engagement.....	300
8.5.7 The Way Forward .....	301
CHAPTER 9 CONCLUSION & RECOMMENDATIONS .....	304
9.1 Introduction.....	304
9.2 Conclusion of Thesis .....	304
9.3 Key Contributions of this Thesis to Current Knowledge Base .....	305
9.4 Summary of Main Findings and New Knowledge.....	306
9.5 Recommendations for Future Research .....	307
References.....	309
List of Appendices.....	329

## **Abstract**

### **Title:**

Does the socioeconomic background of pregnant women make a difference to their perceptions of antenatal care? A qualitative case study.

### **Background:**

Socioeconomically deprived women are at greater risk of adverse pregnancy outcomes. To counteract this, attention tends to focus around access (equality) of services. Yet access may not equate with the meaningfulness (equity) of services for women from different socio economic backgrounds. Without understanding equity we are not in a position to plan appropriate and equitable care.

### **Aims:**

To determine pregnant women's perceptions of the current antenatal provision; to determine if women from the extremes of socioeconomic background perceive their antenatal care differently.

### **Methods:**

Longitudinal interviews were undertaken with multiple, comparative antenatal case studies between January 2007 and April 2009. Cases were primigravida women from 'least deprived' (n=9) and 'most deprived' (n=12) geographical areas as identified by the Scottish Index of Multiple Deprivation (SIMD 2006). The data were analysed using case study replication analysis.

**Results:**

Analysis of categorical data from the sample groups indicated they were less diverse than might have been expected in terms of age and education. However in the key variables of housing tenure, potential income and socioeconomic status based on area of residence, the groups were indicative of the SIMD target populations. The preliminary analysis showed that the sample groups considered the initial General Practitioner contact to be less than adequate and the subsequent utility of antenatal education to be based on self perceived relevance. The substantive analysis showed little difference in access to antenatal services between the 'least' and 'most' deprived groups but perception of care differed. A key difference concerned the level of 'engagement' (defined as personalisation and active involvement in care, power and relationships and health literacy). Analytic comparison identified constructs of engagement present in most of the 'least deprived' group and almost none of the 'most deprived' group. In comparison with women from affluent areas, more deprived women described less evidence of: personal connection to their own care; shared decision making; and perceived value in relation to the written educational aspects of antenatal care.

**Discussion:**

The limitation of the small sample size in both groups is acknowledged. In terms of the preliminary analysis, the results suggest that utility of educational material may need to be reviewed to ensure it is relevant to specific needs. Without this relevance, key information may be missed. The substantive analysis suggests that for women from socioeconomically deprived areas, access may be a less useful indicator than engagement when assessing quality of antenatal services. The lack of engagement perceived by those who are most deprived suggests that equity of service has yet to be attained for those who are most in need.



**Conclusion:**

Equity of service may need to be strengthened. Future research needs to be directed to the potential reasons that may undermine equity and engagement in women from lower socioeconomic areas.

## **Acknowledgements**

There were numerous people who helped and supported me in the completion of this thesis. Firstly, I am truly grateful to the women who agreed to participate. I am indebted to all of them for the time they gave me. I would like to thank my supervisors Dr Carol Bugge and Professor Andrew Watterson from the Department of Nursing at the University of Stirling. Their support and guidance was greatly appreciated and, in particular, I would like to thank Carol for the time and patience spent discussing and reviewing early thoughts, drafts and chapters. If ever I supervise students I will base my approach on what I have learned from you.

I would also like to thank my previous and current employers (NHS Argyll & Clyde and the University of the West of Scotland) for the financial and study support that allowed me to undertake the Doctor of Nursing Degree. In addition, accessing the clinical site and gaining the support of staff was fundamental to my thesis. As such, I would like to thank Cathy Harkins (Head of Midwifery), Dorothy Finlay (Consultant Midwife) and Mary Kirkwood (Midwifery Sister) for their input before and during my data collection. I greatly appreciated the support and advice I was given. I am also grateful to the Consultant Obstetricians, Midwifery Staff and Auxiliaries at the maternity unit involved in this study.

Finally, I would like to thank my family and friends for their patience and encouragement throughout the last six years. I send particular thanks to some of them: the 'Annes' who helped me through some difficult moments; Vera who has supported me, helped me realise I could do this and never let me off with excuses; and Ali who, despite being a quantitative researcher at heart, cast a critical eye over this work. All of you also gave me the break from studying when I needed it.

## List of Figures & Tables

### Figures:

Figure 1 Dahlgren and Whitehead Model of Health Determinants	26
Figure 2 Live Singletons by Birthweight & Gestation 1976-2003	41
Figure 3 Research Design Part 1	101
Figure 4 Analytical Framework	111
Figure 5 Full Research Design	113
Figure 6 Data Analysis Flow	145
Figure 7 Research Recruitment Flow	153
Figure 8 Participation Rate	154
Figure 9 Age Range & Deprivation Status of Participants and Non-Participants	155
Figure 10 Age Distribution of those not Completing Second Interview	156
Figure 11 Highest Educational Qualification Distribution	162
Figure 12 Employment Distribution	164
Figure 13 Partner Employment Distribution	166
Figure 14 Housing Tenure	167
Figure 15 Housing Type	168
Figure 16 Substantive Analysis Codes	217

### Tables:

1 Socio-Demographic Characteristics of Least Deprived Sample Group	158
2 Socio-Demographic Characteristics of Most Deprived Sample Group	159
3 Comparison between Datazone 6315 and Datazone 18	171

## **CHAPTER 1 INTRODUCTION & OVERVIEW OF THESIS**

### **1.1 Background to Thesis**

Inequalities in health have been well established and, over the last few decades, have been shown to correlate to a number of determinants such as social class (Whitehead 1997, Acheson 1998); socioeconomic status (Acheson 1998, Spencer et al 1999); place (McIntyre, Ellaway & Cummins 2002) and power (Marmot et al 1991). These inequalities are evident throughout the life course from birth to adulthood and this 'lifecourse' inequality, and the lifecourse relationship with socioeconomic status at the earliest point of life, is fundamental to my thesis. Increasingly, authors (such as Hertzman & Power 2004, Barker & Lackland 2003, Kawachi Subramanian & Almeida-Filho 2002), are pointing to influences on health starting from the earliest point in utero and continuing in a cumulative manner throughout life. The result is a cycle of deprivation whereby women with increased exposure to negative influences on health, such as those from poorer socioeconomic backgrounds, come to pregnancy with poorer health; and babies, in utero, with increased exposure to negative influences on health start life on a poorer health trajectory.

The first tangible evidence of this deprivation related trajectory is often seen in birthweight - or more specifically low birthweight. Low birth weight is defined as a birth weight of less than 2.5kgs and a gestational age of over 37 weeks (Kramer 1987). It is linked to neonatal morbidity and mortality and also to problems in adulthood such as renal disease, hypertension, stroke and diabetes (Barker & Lackland 2003). In Scotland in 2008, in the 1.5-2.5kg low birth weight category, 12.5% of births were to women from the least deprived areas and 32% to women from the most deprived areas (Information and Statistics Division Scotland 2009).

It was not the intention of my research to focus on the entirety of causes and preventative measures for low birth weight. Rather, I have cited low birth weight as one example of the association between certain pregnancy outcomes and socioeconomic deprivation (Kramer 2000, Spencer 2003). However, the literature was less clear about the association between service delivery or content and socioeconomic deprivation, particularly in terms of the perception of antenatal care. As antenatal care is often the first sustained opportunity to work with women from different backgrounds, this lack of clarity could potentially underpin an inadequate provision of care in those most in need. As such, it was an area that required further exploration.

## **1.2 Purpose & Rationale of Study**

The exploration of the relationship between access to services, deprivation and the perception of antenatal care was important because there was a wealth of policy advocating the targeting of care where it was most needed (Royal College of Obstetricians & Gynaecologists 2004, Scottish Executive 2004, Scottish Executive 2003). In pregnancy this meant directing attention towards pregnant women most at risk of poorer health and pregnancy outcomes – such as low birth weight. Intuitively this seemed appropriate but, despite the data linking deprivation to poorer health and pregnancy outcomes, there was little good quality evidence regarding how best to incorporate socio-economic background into the provision of antenatal care (Bull, Mulvihill & Quigley 2003, Rowe & Garcia 2003).

This was a significant deficit particularly as deprivation not only affected pregnancy outcomes, but also had the potential to affect access to potential mediating factors. This anomaly, known as the 'inverse prevention law', describes the situation whereby “communities most at risk of ill health tend to experience the least

satisfactory access to the full range of preventative services” (Acheson 1998 p112). The inverse prevention law may have been reflected antenatally: in one study it was suggested that primigravida women, with high obstetric risk, were 13% more likely to fail to book for antenatal care by ten weeks of gestation than a low risk reference group; at eighteen weeks the high risk group were 34% more likely to have failed to book (Kupek et al 2002). Furthermore, the problem was not only one of failing to book. Once services had been accessed there still appeared to be a socioeconomic divide with women from certain backgrounds finding it more difficult to maintain contact (Petrou et al 2001). Other researchers noted similar effects in the educational aspects of antenatal care in that young, single, working class women largely did not attend antenatal classes (Dallas & Deery 1997, Nolan 1995).

The lack of an evidence base created a dichotomy between policy and practice. Practitioners were being advised via policy to target towards risk but there was no clear mechanism as to how to do this. As a result effort tended to focus on increasing 'access' to services. For example, the Royal College of Obstetricians and Gynaecologists (RCOG) recommended that modern maternity services should ensure that women from all groups of society had '*easy and equal access*' to the full range of high quality antenatal care (RCOG 2004). Access was certainly a target that could be measured quickly but the notion of 'equal access' tended to place a certain emphasis on the *number* of contacts and not necessarily on the *quality* of contact (Gregory & Davidson 1999). The 'quality of contact' was an important point and one that was missing in much health service review (for example NHS Quality Improvement Scotland 2009). Often the focus was on 'mapping' the patient's journey to look at key access and exit points (Expert Group on Acute Maternity Services (EGAMS) (2002). The rationale here was to maximise appropriate care pathways and ensure services were directed where they were most needed. This was undoubtedly important, but it based service provision

around access to resources and not necessarily around how relevant or meaningful these access points were in relation to the needs of individual patients.

Without an understanding of meaning and relevancy it was potentially unsustainable to target resources merely where it is thought they were needed. For example, health professionals did not know if targeted antenatal care was acceptable, appropriate, necessary or indeed deliverable, as a means of addressing the impact of deprivation in the antenatal period. Baseline evidence was needed regarding the abilities of the current antenatal system to relate to socio-economic factors. An important first step in this process was to establish perceptions and expectations of the current universal antenatal system and to consider whether these perceptions and expectations altered according to socio-economic background.

Three systematic reviews (Oakley et al 2009, Rowe & Garcia 2003, Hodnett & Fredericks 2003) made several research recommendations in relation to socioeconomic deprivation in the antenatal period. Specifically, Rowe & Garcia and Hodnett & Fredericks suggested using qualitative data and charting women's pathways through maternity care to assess whether these differed by social class. This was an important concept and, indeed, it formed part of a research project started in Northern Ireland in 2003, which looked at inequalities in antenatal screening (Alderdice et al 2008). Scotland, though, had some unique health characteristics in relation to Western Europe: the people of Scotland were less healthy than their European counterparts; the gradient of health inequalities was sharper in Scotland; and the relationship of health to socioeconomic deprivation appeared more pronounced (Public Health Institute of Scotland (PHIS) 2001). PHIS (2001) hypothesised that their data reflected an unexplained *Scottish Effect* in the inequalities in health evident in this country. Their view was hypothetical and

contested (Popham 2006) but what was not in dispute was that Scotland operated in a different healthcare climate and, as such, a Scottish dimension would be relevant to socially based antenatal research.

Socially based antenatal research was essential if we were to determine the potentially subtle impact of socioeconomic deprivation in the antenatal period. Ideally it would have been beneficial to undertake a two tiered research programme. The second tier would have determined *effective* care. However, this second tier of research needed to be underpinned by a base line gathering first tier. My study related to the first tier with the aim being to explore the influence, if any, of socioeconomic background on the meaningfulness and relevance of antenatal care. This first tier, as a potential basis for future planning and research, needed to be as expansive and inclusive as possible in order to obtain a balanced view of antenatal care. As such, it was designed to include women from the extremes of deprivation to afford opportunity for comparisons. Through an exploration of the existing system it was hoped to determine whether or not socio-economic background was indeed an issue to be considered when planning targeted antenatal care.

### **1.3 Research Questions**

In order to explore aspects of the relationship between socioeconomic background and antenatal care, the following questions were posed:

1. What are pregnant women's expectations and perceptions of the current antenatal provision?
2. Is the current antenatal care provision perceived differently by women from different socio-economic backgrounds? If so, how does it differ?



#### **1.4 Organisation of the Thesis**

In this first chapter the context for my study has been outlined. In chapter two a review of the literature in relation to inequalities in health demonstrates the case for research. A particular focus is on the theories outlining the persistent and cumulative lifecourse implications of socioeconomic deprivation in terms of health outcomes. In chapter two, there is also an exploration of socioeconomic deprivation in terms of negative pregnancy outcomes, specifically low birth weight, and an outline of the national publications which detail the current policy approach to the provision of antenatal care in Scotland.

In chapter three, contextual factors underpinning my thesis are outlined. In particular the historical and current processes for measuring populations in terms of deprivation are reviewed. The current process is a fundamental aspect of sample selection in my study. The context for the research locality area is detailed, including why this area was chosen.

In chapter four the methodological approach underpinning my research is presented. The rationale for a qualitative, constructivist approach is described as is the rationale for a case study basis to the collection and analysis of data. The research design, a 'two-tailed' case study, separating cases into tails based on extremes of socioeconomic deprivation, is also illustrated.

In chapter five the specific research methods used in my thesis, including the variables being studied and the process for identifying and selecting appropriate 'cases' are outlined. The process for data collection and analysis is explored as are the ethical aspects of the research.

In chapter six the initial findings are presented. These findings, based on analysis of the data, are largely descriptive and relate generally to research question one. They are ordered in such a way as to demonstrate the results in relation to the key variables being studied. In particular, the data presented here illustrate comparative preliminary findings within each case study tail and across tails that substantiates the groups being from socioeconomic deprivation extremes.

In chapter seven a more substantive analysis is developed which builds on the analysis started in chapter six. Specific themes that emerged from the data are explored. This exploration related to the second research question and illustrated that women from socioeconomic extremes do perceive antenatal care differently. This difference relates to the theme of engagement.

In chapter eight there is a discussion around the findings of the thesis which illustrates new knowledge. Conclusions and recommendations for practice are detailed in chapter nine.

## **CHAPTER 2 LITERATURE REVIEW**

### **2.1 Introduction**

The previous chapter illustrated brief examples of health inequalities. The existence of these health inequalities and the factors that may have influenced them are fundamental to the thesis. In this literature review health inequalities are outlined in more detail and the relationship of socio-economic deprivation with pregnancy outcomes is explored. This exploration was important to underpin the research questions and also to consider what may have underpinned some of the tangible pregnancy outcomes outlined in the introduction to this thesis.

The literature review is divided into sections each designed to add a specific dimension in which to underpin my thesis. In section 2.3 there is discussion on what is meant by health inequalities and a review of some of the associated complexity. In section 2.4 the statistical evidence for health inequalities is reviewed and in section 2.5 the impact of inequalities and deprivation throughout the lifecourse is explored. This exploration will include the in utero period. Section 2.6 develops the in utero aspects of inequalities using the pregnancy outcome of low birth weight. In particular, the potential causes of low birth weight and the relationship to socioeconomic deprivation are explored. In the final section, 2.7, the current antenatal approach is outlined and the case for research is detailed.

### **2.2 Search Strategy & Terminology**

Before expanding further it is important to clarify some issues concerning the terminology used throughout this literature review. In particular, the phrases 'health inequality'; 'health inequity'; deprivation; and lifecourse impacts' are cited frequently. Where relevant, each section will define and elaborate on these phrases

but it is recognised that the literature is complex and jargonistic at times and this, to some extent is reflected in this text. However, every effort has been made to keep the complexity to a minimum. The above terms, singularly and in conjunction with: access to care; antenatal; pregnancy; maternity; low birth weight; pregnancy outcomes; geography; place; socioeconomic; social class; equity; poverty were included in the search strategy for this review.

The databases searched include: the Cochrane Database of Systematic Reviews; British Nursing Index; Cinahl; Embase; and Medline. Searches were undertaken periodically from 2004 to 2010 and were restricted to English language published research dating from 1985. All methods and types of research were included.

### **2.3 Health Inequalities: Overview**

In section 2.3 there is an exploration of what is meant by health inequalities. This exploration will highlight some of the associated complexities and outline a relevant model of health determinants in which to frame and understand some of this complexity.

The term 'health inequality' has been defined as a "generic term used to designate differences, variations and disparities in the health achievements of individuals and groups" (Kawachi, Subramanian & Almeida-Filho 2002 p647). Kawachi, Subramanian & Almeida-Filho considered it a descriptive term that, in some cases, may describe entirely expected circumstances. As an example, they quoted the case of sky divers compared to non sky divers. The life expectancy of one group, due to enhanced risk taking behaviour, may be less but this inequality was without moral concern. Of moral concern, they argued, was health *inequity* which refers to those inequalities in health that are deemed to be unfair or arise from

circumstances that are unjust (Kawachi, Subramanian & Almeida-Filho 2002). These 'unfair' or 'unjust' inequalities have been well established and have been evidenced correlating to a number of socioeconomic determinants such as social class (Acheson 1998, Whitehead 1997); place (McIntyre, Ellaway & Cummins 2002) and power (Marmot et al 1991). It has been argued that the weight of empirical evidence relating to these inequalities confirms that investment in personal health is, to a considerable extent, not freely chosen – i.e. there *are* inequities at play (Kawachi, Subramanian & Almeida-Filho 2002).

The inequality versus inequity debate highlights a perspective shift that is worth exploring further. For example, it is not that long ago that differences in health outcomes were considered by some to be largely a consequence of individual health behaviours such as smoking or inactivity. Indeed the lifestyle education based health promotion methodology of the 1970's shows how recent this thinking is. However, from the 'inequity' perspective, it is now increasingly suggested that "risk factor epidemiology tends to assume a freedom to make healthy choices that is out of line with what lay people experience as real possibilities in their every day lives" (Williams 2003 p147). Two seminal reports produced less than twenty years apart demonstrate this growth in thinking around health promotion and health inequalities.

The Black Report (Department of Health & Social Security 1980), on 'Inequalities in Health' and the Acheson Report (1998) 'Independent Inquiry into Inequalities in Health' were both Government commissioned reports which focused on inequalities. The earlier Black Report, using international evidence and national data such as mortality rates and the 1977 General Household Survey, suggested four potential causes of health inequalities: measurement artefact; natural or social selection; materialist/structuralist; and cultural/behavioural. Artefact explanations

advocated that the level of health inequalities was of questionable significance because they arose through the measurement of artificial variables such as health and social class. Natural or social selection inferred that class structure 'filtered' the population resulting in the poorer social classes comprising the weakest and, therefore, the most vulnerable to illness. The cultural and behavioural explanation emphasised 'irresponsible' or 'incautious' behaviour as the main determinant of health. Lastly, the materialist/structuralist explanation advocated the importance of economic and associated social factors in the distribution of health (Townsend & Davidson 1988).

The Black Report did discuss poverty and health but focused largely on the materialist/structuralist explanations as the main cause for inequalities. However, there was disagreement of the strength of this explanation over the others and, by concentrating on materialism and societal structure (e.g. class), it was argued that the debate around inequalities was oversimplified (Williams 2003). The theoretical work by Bunton, Nettleton & Burrows (1995), on the sociological underpinnings of health promotion, illustrated this point. The authors critiqued several approaches to the prevention of ill-health including those which focused on the structural and materialist causes cited by Black (1980). It was their structuralist critique that best captured the oversimplification debate. The structuralist approach to health problems advocated that poor health stemmed from societal divisions and disadvantage in relation to social class, sex, race and / or sexual orientation. The primary critique here was that effort that focused on the 'lifestyles' of different groups started with an assumption of the 'norm'. This had the effect of "pathologising health problems within the selected social groups and at the same time affirming the health beliefs and behaviours of structurally advantaged social groups" (Bunton, Nettleton & Burrows 1995 p51). The irony, according to Bunton,

Nettleton & Burrows was that those that benefited most from a structuralist health promotion approach tended to be in structurally advantaged positions.

Bunton, Nettleton & Burrows were not critiquing health promotion per se. They considered that health promotion facilitated healthy lives and thus reduced health inequalities. The problem was the levels on which this health promotion needed to operate. For example, Bunton, Nettleton & Burrows argued that health inequalities were embedded in a myriad of factors that needed to be addressed by 'healthy public policies'. They maintained that it was not sufficient to focus on singular aspects or 'risk' factors in relation to poor health and, as such, it was "no good just telling people that they should change their lifestyles without also altering their social, economic and ecologic environments" (Bunton, Nettleton & Burrows 1995 p2). This was a view shared by Beaglehole and Bonita (1998) who considered that the main variations in health status, including health impacting behaviours, were 'profoundly affected' by social, economic and cultural factors. According to this theoretical perspective, public health effort which concentrated attention on specific health impacting behaviours, i.e. the risk factor approach, was in danger of only reaching the high risk tail of the inequalities in health distribution.

The Black Report (1980) did suggest a multi-causal aspect to inequalities in health and was fundamental in placing these inequalities on the health, if not political, agenda of the day. However, as stated above, the main criticism was that the authors felt that they had to identify, through a process of elimination, what they believed was the *main* cause for the inequalities identified in the report. The limitations of narrowing the focus were evident. For example, one aspect - low income - was undoubtedly associated with poorer health (Marmot 2003). However, it was not necessarily income per se that was significant, as inequalities in health

persisted even among people who were not poor (Marmot et al 1991, Marmot 2003).

Marmot's (1991) large, quantitative, cohort study was based on questionnaire and screening data from over 10,000 Whitehall Civil Servants (representing a 74% response rate). The results demonstrated that, rather than individual income, it was the relative position on a social gradient that was more indicative of the likelihood of mortality and morbidity inequalities. Marmot (2003) advocated that 'dramatic differences' in mortality across grades of employment could not be fully explained by individual risk factors. More specifically, Marmot (2003) considered that the presence of 'metabolic syndrome' – alterations in carbohydrate and lipid metabolism – increased the lower down the 'power scale' the employees were placed.

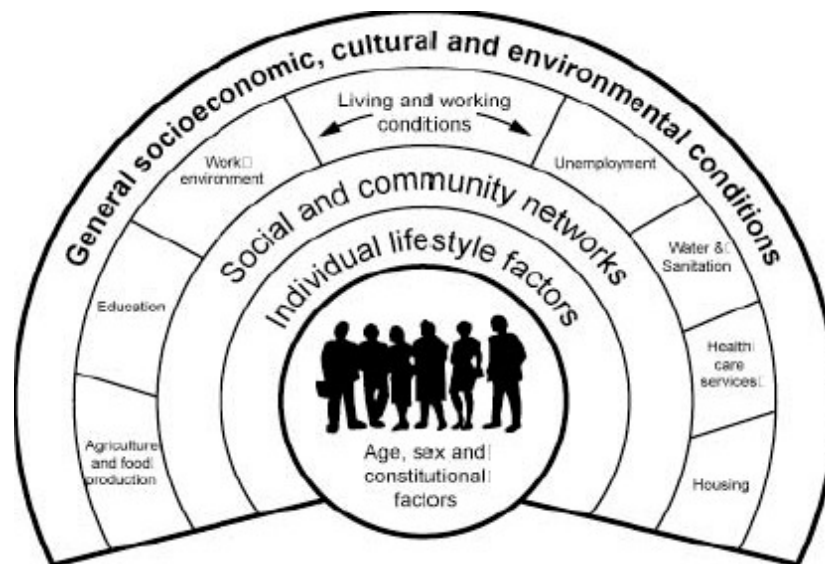
Further support for income alone being an insufficient explanation for inequalities came from a systematic review by Lynch et al (2004). This review incorporated 98 aggregate and multilevel studies examining the association between income inequality and health (Lynch et al 2004). The conclusion was that "overall there seems to be little support for the idea that income inequality is a major, generalisable determinant of population health differences within or between rich countries" (Lynch et al 2004 p5). What was of importance, the review argued, was the "current and historical links between income inequality, the levels of social distribution of health relevant resources and exposures, and how these have played out over the lifecourse of different birth cohorts" (Lynch et al 2004 p68). However, more recent research has questioned Lynch et al's findings. For example, using logistical, multilevel modelling on a large United States dataset, it was suggested that relative deprivation in income was positively associated with poor self-rated health (Subramanyam, Kawachi, Berkman & Subramanian 2009).



Similarly, on the issue of low birth weight, it has been suggested that income inequality is related to a greater risk of intrauterine growth retardation (Reagan, Salsberry & Olsen 2007).

With the benefit of an increasing political acceptance of health inequalities, authors have been able to explore further the potential explanations of inequalities put forward in the Black Report. For example, Shaw et al (1999) considered the evidence to support the four theories. Generally speaking they discounted the artefact and social selection theories. They did support the correlation between behaviour and poor health, and material disadvantage and poor health, but felt that these explanations were inextricably linked to the 'synergistic effects' inherent in a lifetime's exposure to multiple disadvantage. Put simply, the conclusion by Shaw et al was that the evidence on the causes of health inequalities demonstrated that there was no 'simple or singular' explanation. Furthermore, any distinctions between material circumstances, individual behaviour, social structure or indeed natural selection, were in danger of "false antithesis if treated as being mutually exclusive" (McIntyre 1997 p740).

The Acheson Report (1998) reflected more recent research and comment, (for example, McIntyre 1997, Wilkinson 1996, Marmot et al 1991) and adopted a more pluralistic approach to health inequalities. The pluralistic approach was underpinned by the Dahlgren and Whitehead (1991) socio-economic model of the determinants of health. This model (figure 1) illustrates a layered approach to health which proposes varied, interlinked and complex individual, social and economic factors which can influence health.



**Figure 1 Dahlgren and Whitehead Model**

Acheson considered that each of these interlinked levels, and the components within them, had the potential to positively or negatively influence health. The negative influences, and thus health inequalities, tended to concentrate in areas of multiple disadvantage and high socioeconomic deprivation. This led Acheson to state that inequalities arose from the “differential exposure from before birth and across the lifespan to risks associated with socioeconomic position” (Acheson 1998 p6).

The Acheson Report suggested a latent, cumulative and persistent aspect to health inequalities. As such, it was considered that inequalities in health reflected two fundamental factors: there were early lifecourse influences on adult health which occurred before free choice was an option; and one’s life chances depended on ambient risks present within the macro and micro environment within which an individual lived (Kawachi, Subramanian & Almeida-Filho 2002). These factors demonstrated that any focus on inequalities needed an understanding of the

narratives of people's lives, and their personal troubles over time, in relation to multiple facets of identity and position (Williams 2003). (The measurement of identity and position is fundamental to the success of my research and chapter three will expand on this further).

In this overview of health inequalities, some key points have emerged. Specifically, there has been continuing debate concerning the potential mechanisms underpinning health inequalities. However, it is suggested that poverty, and its associated complex and multiple disadvantage, impacts on health and health outcomes. The Dahlgren & Whitehead model illustrates some of this complexity and in a later section of the literature review (2.6), this model will be used as a framework to explore the potential influences inherent in negative pregnancy outcomes. Beforehand, the following sections will look further at the evidence of health inequalities and how these can impact throughout the lifecourse, including the in utero period.

## **2.4 Health Inequalities: Statistical Evidence**

In Scotland, in 2002, the life expectancy at birth of men living in the most deprived areas was 69.5 years. For the most affluent areas the figure was 78.4 years, a difference of almost nine years. For women the difference in life expectancy was five years (Scottish Executive 2005). These figures were certainly indicative of inequalities but they did not represent the full picture. In 2004, the Public Health Institute for Scotland (PHIS) published Community Health and Wellbeing Profiles for Scotland. These profiles contained 64 indicators of health analysed to postcode areas. This analysis afforded a more localised view of health inequalities, with some interesting results. For example, within the locality area used in my study, the analysis indicated a fourteen year gap in life expectancy at birth between males

from the most deprived areas and males in the most affluent areas. This gap in life expectancy was among individuals governed by the *same* local authority and the *same* health board. (Chapter three will provide more detailed information on the specific local authority area and set the context for its relevance to my thesis. However, some data are cited at this point to illustrate the localised nature of some inequalities in health).

Female life expectancy was also subject to socioeconomic differences. In the same two areas referred to above, women from the most affluent area were likely to live just over nine years longer than their counterparts in the most deprived area (PHIS 2004). This trend was reflected across a number of different residential areas and, whilst still demonstrating considerable evidence of inequalities, it raised two interesting points: in general women live longer than men irrespective of their socioeconomic background; and, in terms of life expectancy, the gap between affluent and deprived areas was less marked among women.

It is not appropriate within this literature review to explore in detail the potential reasons for gender inequalities. However deprivation related factors may have contributed to both points raised above. Traditionally, the poorer life expectancy rates in men have been attributed to specific health risks associated with a number of factors such as heavy, dangerous manual work, greater alcohol and tobacco consumption rates, and rates of violent crime (Jones 1994, Kaplan & Marks 1995). Women were historically less exposed to the same factors and their reduced risk exposure may be one reason for their higher life expectancy. In general though, the gap in life expectancy between men and women is narrowing (Yuen 2005). This is possibly a result of less gender based differences in lifestyle and the increasing prevalence of smoking and heavy drinking among women (Brettingham 2005). From this perspective there is an argument that in the future there may be a

*convergence* of life expectancy rates *between* genders but also, due to continuing risk exposure in deprived areas, a greater *divergence* of the rate *within* the same gender.

Inequalities also extend beyond life expectancy. For example, consider the data on quality of healthy life: in 2001, 21% of women living in deprived areas reported they had a limiting long-standing illness or disability compared to 8% of women in affluent areas (Scottish Executive 2005). The figures for men followed the same pattern (Scottish Executive 2005). It was not surprising, then, to report that locality data from my study area indicated that for cancer, heart disease, stroke, diabetes, and psychiatric problems, the standardised rates for hospital admission were below the Scottish average in affluent areas but were up to 150% above the Scottish average in the most deprived area (PHIS 2004).

Inequalities in health can also be evidenced in children and young people. For example, in my study locality, it was noted that in the more affluent areas, the four year total crude rate for dental hospital admissions among children was 32% below the Scottish average. In the most deprived area the crude rate was 41% above the Scottish average (PHIS 2004). The teenage pregnancy rate was also subject to inequalities. Again, in a more affluent area of my study locality, the three year total crude rate was 70% below the Scottish average. For the most deprived area the three year crude teenage pregnancy rate was 111% above the Scottish average.

The use of the 'Scottish average' touches on an important area. In European terms, the Scottish average may not necessarily represent a relatively good standard of health. For example, in the early part of the 20<sup>th</sup> century, the Scottish male life expectancy was in keeping with the Western European average. However, the recent Kerr Report (Scottish Executive 2005) highlighted the fact that Scotland, as

a whole, no longer fares well in health terms when compared with other Western European countries. For example, in relation to life expectancy at birth, only Portugal had a lower life expectancy for males. For females, no other Western European country had a lower life expectancy than Scotland (Scottish Executive 2005). Unfortunately, this less than favourable comparison was not confined to the generally affluent Western European countries. In 1996, other than Portugal, the only European countries with poorer male life expectancy than Scotland were the Eastern block countries and those countries recovering from civil war (PHIS 2001).

The figures did not improve when comparing Scotland's life expectancy at birth with that of Northern Ireland, Wales and every English region. In all cases, the Scottish figure was worse. Between 1981 and 1991, it was shown that a widening north-south gap occurred throughout the United Kingdom, with residents of Glasgow being 31% more likely to die prematurely than residents of the similar, large English city of Bristol and 66% more likely to die prematurely than residents of rural Dorset (Dorling 1997). The reasons for the poor relative health were, and still are, open to debate. What was less debatable was that in general the people of Scotland were less healthy than their European counterparts, the gradient of health inequalities was sharper in Scotland and deprivation (as in other areas) was a significant influence on health related inequalities.

The data summarised here point to inequalities in health being related to deprivation, persistent and evidenced throughout the various stages of life. (Specific pregnancy related evidence of health inequalities will be highlighted in section 2.6). The Dahlgren & Whitehead model of health determinants highlights potential factors that may influence inequalities and health outcomes. However, what needs to be considered, particularly as the focus in my thesis is early life, is

whether these influences are independent at each life stage or whether there is a cumulative effect throughout life.

## **2.5 Health Inequalities throughout the Lifecourse**

In considering the determinants of health, including socioeconomic deprivation, there is a desire to understand the exact mechanisms that lead to ill health and subsequent health inequalities. In some cases, this seems reasonably straightforward. For example, smoking or excessive alcohol consumption, through the action of specific chemicals, will usually lead to pathological cell damage. But, there may also be an association with these factors and other health determinants, such as stress, unemployment and deprivation itself (Scottish Public Health Observatory 2009). The end result is that, in relation to ill health, it is not always easy to determine the exact contribution of tobacco or alcohol relative to the contribution from other, more insidious, health determinants. And it is this 'insidious' nature to morbidity that underpins the idea of the 'lifecourse' contribution to health.

The notion of 'lifecourse effects' refers to "how health status at any given age, for a given birth cohort, reflects not only contemporary conditions but embodiment of prior living circumstances, in utero onwards" (Kawachi, Subramanian & Almeida-Filho 2002 p650). There are three distinct pathways in which it has been hypothesised that the determinants of health can impact throughout the lifecourse: *latent effects*, which refers to the relationships between an exposure at one point in the life course (such as in utero) and a health outcome years or decades later; *pathways effects*, which refers to dependent sequences in which an exposure at one stage in life influences the probability of other exposures later in life; and

*cumulative effects*, which refers to a series of exposures to different factors or to multiple exposures to a single recurrent factor (Hertzman & Power 2004).

One of the main proponents of the 'latent effects' is Barker (1992, Barker, Forsen, Uutela et al 2001, Barker & Lackland 2003, Barker 2003b, Barker 2006). Barker's early research (Barker, Osmond & Winter 1989), reviewed the recorded birth and early life weights of over 5000 men born in an affluent English district between 1911 and 1930. The sample represented 74% of all singleton births with available recorded weights. Over 90% of the cohort was breastfed and the results indicated that men who had a birth weight of less than 5.5lbs had the highest standardised mortality ratio (SMR) for ischaemic heart disease and obstructive lung disease. Higher SMRs were also noted for those whose weight was below average at twelve months.

Barker, Osmond & Winter (1989) did identify the potential for confounding variables particularly in relation to the possibility of other later exposures to adversity. However, in further work Barker (2006) cited other studies (for example, Frankel, Elwood, Sweetnam et al 1996, Rich-Edwards, Stampfer, Manson et al 1997) to support the argument that confounding did not underpin the association between birthweight and adult disease. The Rich-Edwards et al study, using data from the Nurses Health Study, which collected data from 121,700 nurses over a twenty year period, used multivariate analysis to control for factors such as smoking, ethnicity and socioeconomic status. The Frankel et al study (1996) collected data from 1258 men recruited over a four year period and used multiple logistic regression on a number of variables such as alcohol consumption, blood pressure and exercise. Both studies, controlling for these potential confounders, still demonstrated a statistically significant association between birthweight and coronary heart disease in adulthood. Other research, such as the large scale cohort study by Leon,



Johansson & Rasmussen (2000) has also evidenced a correlation between foetal growth and adult morbidity such as hypertension.

Barker linked the association of birthweight and adult disease to the known biology of early life adaptability and foetal development and hypothesised a 'foetal origins' theory. The theory (Barker 2003b, Barker 2006) advocates two phenomena as the biological basis for later morbidity. Firstly, 'developmental plasticity', which suggests that for many of the body's organs and systems there is a critical period when they are 'plastic' and sensitive to the environment. According to Barker (2003b) this critical period is in utero. The potential process is of certain negative environmental influences giving rise to physiological or morphological states which subsequently inhibit functional capacity. The second phenomenon, according to Barker (2003b), is 'compensatory growth'. This suggests that a baby, undernourished in utero, establishes a 'thrifty' way of handling food which becomes inappropriate after birth. The potential process is of a diversion of blood glucose towards the developing brain and, therefore, away from muscles and muscle growth.

The argument put forward by Barker is that this foetal origins theory lays down the mechanisms and processes resulting, possibly decades later, in adult disease. For example, the consequences of compensatory growth may persist into later life as insulin resistance (Barker 2003b). Tulassay & Vasarhelyi (2002) support the developmental theory by considering potential mechanisms by which adult renal disease could have its origins in foetal development. They consider, though not empirically, that interference of normal kidney development noted in low birth weight babies may be one factor in the development of chronic renal disease.

There may also be more immediate effects of in utero impairment. For example, Spencer (2003) reviewed Department of Health infant perinatal and mortality statistics and found a considerably increased mortality risk among infants weighing less than 2.5kgs at birth. Interestingly, however, there was also evidence which suggested that any birth weight below 3.5kgs carried an increased risk of mortality. Spencer considered the higher measure indicated a particular public health issue in that the population attributable risk of birthweight mortality in babies born in the 2.5kg to 3.49kg range was going to be relatively high due to the larger number of babies born in this weight range.

Li, Daling & Emanuel (2003), in a population based case control study, matched 6247 children who had died aged under nineteen years to 31,074 controls. They noted an association between low birth weight and both overall and cause specific mortality such as infectious diseases, congenital anomalies, and heart disease. Unfortunately, the Li, Daling & Emanuel study (2003) was unable to control for certain confounders such as socioeconomic status due to the retrospective nature of the data collection. However, data was assessed for factors associated with socioeconomic status such as maternal age, marital status and ethnicity and no confounding was noted.

Spencer (2003) summarised a number of studies on low birth weight indicating a strong correlation with disability in childhood and a negative linear relationship with the risk of hospital admission. Other studies highlighted the neurological aspects of low birth weight. These included a three-fold increased risk for attention-deficit hyperactivity disorder (Mick et al 2002, Breslau & Chilcoat 2000). Shenkin et al (2001) also related low birthweight to impaired cognitive function by aged eleven. They reported a consistent historical trend on the relationship between low birth

weight and childhood mental ability leading to the conclusion that there was a robust mechanism at the root of the relationship (Shenkin et al 2001).

However, some researchers have advocated caution in relation to the later life health associations of low birth weight. This caution has stemmed from the tendency of studies to report associations rather than specific causal mechanisms. For example, Kramer (2000) cautioned that it is not easy to disentangle potential confounders such as lifestyle factors from the causal processes. A further critique came from Falkner, Hulman & Kushner (2003) who, in an analysis of 250 subjects, could not identify a negative correlation with birth weight and adult blood pressure. They also noted that most studies on the foetal relationship to adult disease reported very small effects. However, Falkner, Hulman & Kushner did report that the number of studies that supported the foetal growth theory outnumbered those that didn't support the theory. Furthermore, in response to association-based critiques such as Kramer's, it is countered that given the extent and range of association of birthweight with ongoing health outcomes "it is premature to dismiss birthweight as a causal factor" (Spencer 2003 p183).

However, there have been concerns raised about the importance placed on low birth weight. For example, Wilcox (2001) considered that effort to improve low birth weight rates, essentially by raising the mean birthweight, may be misplaced. Wilcox's view stemmed from the theory that mean birthweight had a fixed relationship with optimal birthweight and by increasing the mean birthweight we would merely shift the optimal birthweight by the same amount. However, earlier work (Power 1994, Spencer, Logan & Gill 1999) looking at trends in birthweight over a ten year period had demonstrated that at the population level, an increase in mean birthweight was associated with improvements in perinatal outcome (Spencer, 2003).

In summary, although contested, latent effect proponents suggest that adult disease may be 'programmed' in utero. The theory is based on evidence, such as that cited above, which suggests there may be a correlation between birthweight and later disease.

The second potential mechanism for lifecourse health inequalities is the 'pathway effect'. The tenet of this theory is that the environment in early life sets individuals on life long trajectories that ultimately affect some aspects of health status over time (Kawachi, Subramanian & Almeida-Filho 2002). In the pathways model, it is believed that early events, including physical, social or environmental factors, influence the life course through the development of cognitive and behavioural 'resources' that will be crucial at transition points in life such as school entry (Hertzman & Power 2004). At these transition points, inadequate resources or skills ultimately limit social development or opportunity. International research has reported on the potential outcome of this inadequacy of resources. For instance, studies have shown that children who were not cognitively or emotionally ready for school were more likely to experience school failure and, in later life, experience unemployment, criminality and psychological morbidity (Power, Manor & Fox 1991, Tremblay et al 1992).

The physiological pathways impact has also been well researched. In a prospective cohort study of 1142 babies born in Newcastle in 1947 it was found that children from socioeconomically poorer families were at greatest risk of severe respiratory tract infection throughout childhood, leading to chronic respiratory disease by the age of 15 years (Lamont et al 1998). Research has also suggested a relationship between family food expenditure, housing conditions and height in childhood (Gunnell et al 1996). This was relevant as short stature was considered to be an

important influence on the development of coronary heart disease (Langenberg et al 2005). Other researchers, (Barker et al 2005, Hart et al 2003, Eriksson et al 2003, Lundberg 1997) also evidenced an association between low socio-economic status in childhood and increased risk of later life morbidity.

However, one critique of these studies is that they are based on historical data sometimes dating as far back as the 1930s. This leads to problems such as incomplete cohorts and missing data. Despite this, the coherence of the findings lends weight to the conclusions. Furthermore, Falkner, Hulman & Kushner (2003), critics of the theory that in utero effects impact on adult health, supported the theory of a postnatal impact on adult health. In particular, they considered research such as that by Williams & Poulton (2002) and Singhal et al (2003), which pointed to extrauterine factors, including nutrition and growth, as outweighing the intrauterine impact on adult blood pressure.

The final potential mechanism for lifecourse inequalities is the 'cumulative 'effect'. Kawachi, Subramanian & Almeida-Filho (2002) consider that the intensity of cumulative exposure to negative health influences operates as a dose-response association. For instance, Power, Li & Manor (2000) in the large 1958 British birth cohort study, used multivariate analysis to demonstrate that occupational class, over the first three decades of life, was strongly predictive of adult morbidity. Indeed, 'lifetime' occupational class was a stronger predictor of poor health than occupational class at any single point in time suggesting the cumulative aspect of socioeconomic circumstances in terms of influence on health status (Hertzman & Power 2004). Further support for the cumulative aspect on lifecourse health also came from Power, Li & Manor (2000). Their multivariate analysis demonstrated that socioeconomic deprivation and height in the early years, and behavioural

adjustment and nutritional status in adolescence and adulthood, were all predictors of chronic illness by the age of 33 years.

Not surprisingly, it is proposed that the three distinct mechanisms of latent, pathway and cumulative effects, are unlikely to operate in isolation. Understanding the life course contribution to health status means understanding how latent, pathway and cumulative effects coexist, interact and combine within each individual (Hertzman & Power 2004). For example Hertzman & Power cited natural experiments, such as European war-time famine studies, which demonstrated that the adult outcomes of in utero exposure to food shortages, (the latent effects), differed according to whether there was ongoing famine or subsequent food abundance (the pathway and cumulative effects). The significance was the relevance of additional 'beyond utero' exposures which suggested that "life course trajectories do not unfold in a vacuum" (Hertzman & Power 2004 p441).

In conclusion, section 2.5 has outlined data on health inequalities including a review of evidence that inequalities in health exist throughout the life course. Three pathways have been outlined that provide potential mechanisms for these lifecourse inequalities. The evidence indicates that each of these pathways can exert negative influences at critical periods in life leading to poorer health outcomes at some point in the future. In relation to the tenet of my thesis, the lifecourse perspective on health underpins the two important and cyclical points highlighted in the introduction in chapter one: women with increased exposure to negative influences on health, such as those from poorer socioeconomic backgrounds, come to pregnancy with poorer health; and babies, in utero, with increased exposure to negative influences on health start life on a poorer health trajectory. Both these points will be expanded upon in the next section.

## **2.6 Socioeconomic Deprivation & Pregnancy**

The previous sections have outlined health inequalities and considered possible life course precursors of these inequalities, including that of socioeconomic deprivation. The evidence suggesting a lifecourse perspective, and the potential in utero impact on health, strongly justifies attention being directed towards the beginning of life. As such, in this section of the literature review, the focus will be narrowed to the relationship between socioeconomic deprivation and pregnancy.

There are a number of pregnancy outcomes that are negatively associated with maternal socioeconomic deprivation status. One of these is maternal death which is considered to be 'the death of a woman whilst pregnant or within 42 days of the end of pregnancy from any cause related to or aggravated by the pregnancy or its management' (World Health Organisation 1992). Since 1957 there have been a series of reports reviewing all maternal deaths within the United Kingdom. In 2004, the sixth report, covering the period 2000-2002 was published by the Royal College of Obstetricians and Gynaecologists (RCOG). For the first time this report included an analysis of English based maternal deaths using the English Index of Multiple Deprivation which is similar to the Scottish Index discussed in the following chapter. The results were stark: there was a strong correlation between deprivation and maternal death. More specifically, women living in the most deprived areas had a 45% higher death rate than those women living in the most affluent areas.

These figures were dramatic but thankfully equated to small numbers in relation to overall rates of birth. In relative terms, low birth weight was a far more common negative pregnancy outcome. It was also a commonly studied pregnancy outcome due to its reported association with foetal and infant mortality and morbidity (Kramer et al 2000). As such, it was a suitable outcome from which to discuss the

relationship to socioeconomic deprivation and in doing so, begin to distil the case for antenatal research.

### **2.6.1 Low Birth Weight**

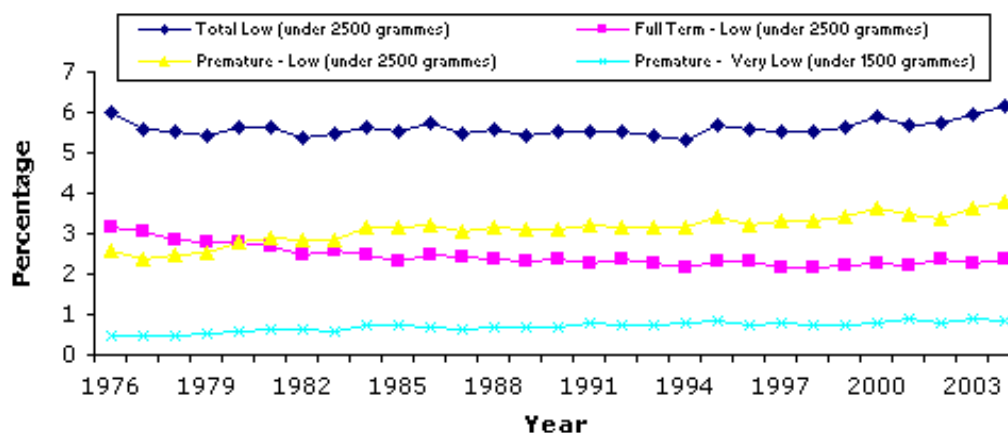
Low birth weight categorised as a birth weight of less than 2.5kgs is determined, in the main, by two complex processes: duration of gestation and intrauterine growth retardation (Kramer 1987). Essentially, a premature gestation period is defined as a gestational age of less than 37 weeks. Intrauterine growth retardation (IGUR) is considered to have occurred if there is a birth weight of less than 2.5kgs in a baby with a gestational age greater than or equal to 37 weeks (Kramer 1987). Low birth weight can thus stem from a short gestation period (preterm birth), retarded intrauterine growth or a combination of both (Bull, Mulvihill & Quigley 2003). In this literature review, unless otherwise stated, low birth weight is considered as a general term that can encompass either cause.

### **2.6.2 The Trends in Low Birth Weight**

The Information and Statistics Division (ISD) of the Scottish Government monitors all birth weights in Scotland. Over the past twenty years, their data indicate that the low birth weight rate in Scotland has undergone very little change. Indeed figure 2 highlights that the rate has hovered around 6% of all live, singleton births since 1976.



### Live singletons by birthweight and gestation



Source: SMR02  
ISD Scotland

**Figure 2**

In addition to the headline rates, ISD categorises all birth weights into 10 different weight categories. This categorisation indicates that most of the Scottish low birth weight babies fall into the 2.0 – 2.49kgs weight category. This is similar to other countries such as the United States (Center for Disease Control 2009). Within the 2.0-2.49kgs category, in 1995, 15% of the low birth weights in Scotland were to woman living in the least deprived areas. Yet in the same category, in the same year, 28% of the low birth weights were to women living in the most deprived areas, a difference of 13%. Of note is the fact that ten years later, in the same low birth weight category, this difference between least and most deprived had remained almost unchanged (ISD 2007). ISD report that the association between deprivation and birthweight was statistically significant. For example, based on ten years of data from 1987 to 1996 a Chi<sup>2</sup> test for trend resulted in Chi 1528.8, p<0.0001 (ISD 1998). (NB these data are based on all singleton births in Scotland excluding those with major congenital anomalies or a birth weight of less than 500g).

The data clearly pointed to an increased risk of having a low birth weight baby among women living in deprived areas. Consider the risk in terms of figures from 2004 (ISD 2007): in the 2.0-2.49kgs weight category, there were 2517 births in Scotland. Of these births, 747 were to women in deprivation quintiles 1 and 2 (the least deprived areas). However, 1315 of the births were to women in deprivation quintiles 4 and 5 (the most deprived areas). This equated, in crude terms, to 568 excess low birth weight babies in deprived areas. The earlier sections of this literature review suggested that of these 568 births, it was possible that some would be at greater risk of neonatal and infant morbidity and mortality and some would be at risk of latent in utero effects that would have already set them on the course to poorer adult health.

Therefore, birth weight is an important public health concern and one that is correlated to some degree with deprivation. However, due to the multifaceted nature of the causes of low birth weight it is imperative to explore this further.

### **2.6.3 The Potential Determinants of Low Birth Weight**

Low birth weight has a number of potential causes. Kramer (1987) undertook a meta-analysis of the English and French language medical literature published between 1970 and 1984. This analysis, completed under the auspices of the World Health Organisation, identified 921 relevant publications although 26 of these could not be located for review. In addition, the author made no claim as to the completeness of the literature search but considered it 'reasonably comprehensive'. The literature was further restricted to that focusing on singleton pregnancies and not arising from women with chronic illnesses. Importantly, the author also excluded low birth weight literature arising from what was termed

'intermediate outcomes of pregnancy' such as toxæmia, placenta previa or abruption. The result was that potential determinants were reviewed under specific headings of: genetic and constitutional factors, demographic and psychosocial factors, obstetric factors, nutrition, maternal morbidity, toxic exposures and antenatal care.

Within these main headings, Kramer (1987) identified 43 potential determinants of low birth weight. It was not the purpose of my literature review to consider all 43 or indeed to consider if this was a definitive number. That said, any analysis demanded that attention was at least paid to the main headline determinants of low birth weight. These 'main' determinants formed the basis of most research in relation to low birth weight. Furthermore, they reflected the determinants of health as outlined in the Dahlgren & Whitehead model of health determinants discussed earlier.

The Dahlgren and Whitehead model schematically illustrates that influences on health can, broadly speaking, be grouped into specific categories (somewhat similar to the work by Kramer): age, sex and constitutional factors; individual lifestyle factors; social and community networks; living and working conditions; and socioeconomic background. An important premise is that each of these categories can have either a positive or negative influence on health. As such, the Dahlgren and Whitehead model will be used as a framework for reviewing the positive or negative influence on health in relation to the potential impact on pregnancy.

It is important, however, to highlight caution. The model illustrates the interconnectedness of health determinants. As such, it is unlikely that many causes or determinants of low birth weight operate in isolation from one another. Furthermore, the order of the following subsections reflects no particular

prominence to any one specific cause. In general, they are considered in the 'layered order' of Dahlgren & Whitehead's model. In that model, socioeconomic background is overarching and, therefore, it is considered last in this section allowing an exploration of its relationship to other factors to be considered first. What also has to be considered is the role of health care services and, from this perspective, antenatal standards will be reviewed in section 2.7.

### **2.6.3.1 Age and Constitutional Factors**

A relationship has been demonstrated between birthweight and a number of constitutional factors such as parity, pregnancy interval, maternal age, maternal health, maternal height, genetics, and ethnicity. In a retrospective study of over 3000 women, parity, or more specifically, nulliparity, was associated with a decrease in mean birthweight of 158.3 grammes (Wilcox et al 1995). However, age may be influential as in a large, retrospective study which controlled for confounders, no association was found between non smoking, teenage women having their first baby and negative pregnancy outcomes (Smith & Pell 2001). Yet, women aged 15 -19 years having a second baby had an almost threefold risk of a preterm delivery or stillbirth (Smith & Pell 2001).

In general, it has been suggested that a short inter-pregnancy interval may be an independent risk factor for preterm birth (Smith, Pell & Dobbie 2003, Basso et al 1998). Furthermore, adjusting for age, parity and social status, the Basso study demonstrated a particular relationship in this association with an odds ratio of 3.60 for pregnancy intervals of as little as four months, and an odds ratio of 2.28 for intervals between four and eight months.

Part of the association for some of the above factors, in particular pregnancy interval and age, may be explained by socioeconomic factors. The argument is that in today's climate of delayed first pregnancies among more educated women, those who are pregnant at younger ages, and particularly those having second pregnancies under aged 19 years, will quite possibly come from areas of multiple deprivation (Bonellie 2001). Similarly, those with shorter pregnancy intervals may also be more likely to come from deprived areas (Gold et al 2004). This potential relationship with socioeconomic background was noted by Smith and Pell in their Scottish study (2001). Indeed in their conclusion they comment that theirs was a retrospective study and as such, the causal nature of the association would be better determined by a prospective study able to incorporate socioeconomic factors.

Other maternal health factors, such as pre-pregnancy hypertension have also been associated to some degree with preterm birth (Spencer 2003). However, the evidence for other 'acquired' aspects of pre-pregnancy maternal health being associated with low birth weight is limited but not non-existent. One of these acquired aspects relates to genito-urinary infections with research showing some association between both genital infection and preterm deliveries (McDonald et al 1997), and uterine infection and preterm deliveries (Romero & Mazor 1988). However, the extent and singularity of the association was unclear. For example, Riggs & Klebanoff (2004), in a meta-analysis of treatment research during pregnancy, concluded that although there was an association between vaginal infections and preterm birth, there was little evidence that treating the infection lowered the risk of preterm birth.

Genetic factors have also come under scrutiny in the association with low birth weight. Several studies point to an association stemming from maternal birthweight

and maternal height (Emanuel et al 1999, Winkvist, Mogren & Hogberg 1998, Bonellie & Raab 1997). Kramer (1987), in his meta-analysis, estimated that maternal birthweight explained 12% of intrauterine growth retardation. And a maternal height of at least 4cm below the mean population height is estimated to give a population attributable risk of intrauterine growth retardation of 6.3% (Kramer 1987). Paternal birthweight, paternal weight in young adulthood, and paternal height have also been associated with low birth weight (Klebanoff et al 1998). Klebanoff et al (1998) estimated the cumulative effect of these paternal factors explained 3% of the variance in infant birthweight. However, it was also estimated that the corresponding birthweight variance arising from the maternal impact of these same factors was 9%. However, height and weight could also be environmentally or behaviourally determined as discussed in section 2.5. Whilst this may confound the relationship to certain studies, it also helps illustrate the difficulties inherent in attempts to disentangle the myriad of factors that influence health.

Ethnicity has also been shown to be associated with low birth weight. An American study looked at 46,000 births covering four racial groups: White; African-American; Native American; and Hispanic. The results showed that the birthweight distributions of White, Native American and Hispanic groups were similar but the birthweight distribution of the African-American group was 'displaced markedly downwards' (Emanuel et al 1999). In 2002, in a review of births between 1980 and 2000, there was a persistence of a two to threefold risk for low birth weight among black infants compared to white infants (Isayu, Tomashek & Barfield 2002). This association has also been noted in England & Wales. For example, Margetts et al (2002) noted that for women in the UK who 'derived' from the Indian subcontinent, the average birthweight was below the national average and had not increased over the past forty years. Furthermore, Collingwood Bakeo (2004), in a review of

birth records from 1983 to 2001, found that the proportions of low birthweight babies were highest in those babies born to women who themselves were born in East Africa, India, Pakistan and Bangladesh. Collingwood Bakeo (2006) also noted a similar health inequality in terms of infant mortality.

Some authors caution against the notion of a specific racial cause for low birth weight. Instead, they point to more social, economic or cultural factors such as isolation, nutrition, lack of social support, lack of use of antenatal care and, in America at least, lack of health insurance (Foster 1997, Gennaro 2005, Knight et al 2009). However, in a study specifically comparing low income white women to low income black women, it was still found that low birth weight and preterm births were more common in black women (Goldenberg et al 1996). A more recent British study (Knight et al 2009) also found that the increased risk of severe maternal morbidity in non-white women was independent of socioeconomic status. The exact mechanism of this is elusive though and Spencer (2003), summarising much of the recent evidence base, concluded that “extreme caution should be employed before attributing independent effects to race / ethnicity” (p59).

It does seem that age, genetic, and other specific maternal health factors such as infection or obstetric history are associated to varying degrees with low birth weight and other complications. However, for many of these factors it is not always easy to identify the specific causal process. Lifecourse influences highlight the complexity of attempting to disentangle the various processes that impact on life outcomes including low birth weight. However, the influence of one issue runs through much of the determinants discussed here – that of socioeconomic deprivation.

### **2.6.3.2 Individual Lifestyle Factors**

The second 'layer' of the Dahlgren & Whitehead model is that of individual lifestyle factors – or 'behaviour'. However, before looking in detail at specific pregnancy related health behaviours, and in recognition of the multifaceted nature of health determinants, a 'health warning' is perhaps appropriate. Health impacting behaviour needs to be considered in the context of modern public health which moves away from the approach which underpinned health education activity of the 1970s and 1980s. Throughout that period, a person's choices in relation to their health related behaviour were often thought to be very much within their control. This, of course, meant that health promotion agencies had merely to 'educate' on the dangers of these behaviours for people to change them. Needless to say, this approach is no longer seen as particularly valid. Health education is still important, but it is now seen as being part of a more supportive process which recognises the impact that external, sometimes insidious, measures place on the opportunity for individual choice particularly among those who reside in deprived areas.

With this 'warning' in mind, there are two main maternal health-related behaviours which can increase the risk of low birth weight: insufficient nutritional intake and smoking. To a lesser degree substance misuse may also be important. Unfortunately, it can often be very difficult to disentangle the impact of each of these factors. For example, a woman who is abusing illegal substances is also very likely to be a smoker. Similarly, it is also likely that smokers, in particular young smokers, will have a poorer nutritional status than non-smokers (Mathews et al 2000). This aside, the potential impact of each individual factor will now be considered.



Maternal nutritional status, according to Kramer (1998), refers to aspects of pre-pregnancy weight for height (body mass index or BMI), gestational weight gain, and the intake of protein and micronutrients. It seems logical to assume that a less than adequate level of any of these aspects in pregnancy will not create the most appropriate internal environment for intrauterine growth. As far as BMI and gestational weight gain were concerned, the data seemed to confirm this. Bull, Mulvihill & Quigley (2003) undertook an evidence briefing which synthesised meta-analyses, systematic reviews and other synthesised literature assessing the effectiveness of smoking or nutritional interventions for low birth weight. They found that in women with a pre-pregnancy weight of less than 49.5kgs there was an 84% increase in the risk of intrauterine growth retardation; and in women with a gestational weight gain of less than 7kgs there was a 98% increase in the risk of intrauterine growth retardation (Bull, Mulvihill & Quigley 2003).

However, the extent of the impact of nutritional components has been questioned. For example, Kramer & Kakuma (2004), in a systematic review of the evidence base on increasing energy and protein intake during pregnancy, concluded that whilst dietary advice appeared effective in increasing intake, no consistent benefit in pregnancy outcome was noted across five separate trials. Furthermore, Mathews, Yudkin & Neil (1999), in a randomised trial involving 693 pregnant, nulliparous women in England, found that maternal nutrition, at least in industrialised areas, seemed to have only a small effect on birth weight.

However, there was some evidence of a relationship between nutritional intake and pregnancy outcomes (Lasker et al 2005, Fowles & Gabrielson 2005). This was particularly noted among lower socioeconomic women, a group not specifically randomised in Mathews, Yudkin & Neil's (1999) study. Several pregnancy based studies indicated that a very high percentage of low income women did not attain

the recommended daily allowances of specific food groups (Relton et al 2005, Fowles & Gabrielson 2005, Rogers et al 1998). A study by Rees et al (2005) illustrated that women who were unwaged or in manual occupations had lower first trimester haemoglobin levels than women in other groups ( $p=0.02$ ). In particular, low income women were very likely to consume low levels of protein and high levels of carbohydrate in their diets. In relation to pregnancy outcomes, prospective collected evidence has shown that this high carbohydrate diet in early pregnancy combined with a low protein diet in late pregnancy leads to reduced placental growth and possibly a low birth weight (Godfrey et al 1996).

In addition to deficiencies in carbohydrate and protein intake, younger women, and women from lower socioeconomic backgrounds, were also less likely to take the required allowances of micronutrients (Relton et al 2005). This finding was important because a literature review of prospective and randomised controlled trials concluded that there was strong evidence that zinc, calcium and magnesium supplementation could improve birthweight (Ramakrishnan et al 1999). However, the strength of this effect was debated. Bull, Mulvihill & Quigley (2003), in their evidence briefing, did find calcium supplementation relevant in the prevention of low birth weight. However, they concluded that other supplementation based research has shown inconclusive outcomes in relation to low birth weight. From this evidence briefing they also concluded that any nutritional focus around pregnancy is perhaps better concentrating on ensuring “women arrive at pregnancy ready to meet the nutritional demands of gestation” (Bull, Mulvihill & Quigley 2003 p43).

Smoking is likely to be the most significant modifiable risk factor contributing to low birth weight. The incidence of low birth weight was twice as high among smokers as non-smokers, with babies born to mothers who smoke weighing, on average, 200g less than babies born to non-smokers (Bull, Mulvihill & Quigley 2003). There

was also evidence of a dose-response relationship with a progressively higher incidence of low birth weight among heavier smokers (Shah & Bracken 2000). More specifically, research focusing on individual aspects of in utero growth found that among 1650 low risk women, maternal smoking was associated with a reduction in femur length ( $p=0.005$ ) and abdominal circumference as well as a reduction in birth weight, length and head circumference (Pringle et al 2005). Paternal smoking was also a factor in low birth weight with non smoking women (confirmed via cotinine levels) living with partners who smoke, having a mean birthweight deficit of 88 grammes in a study of 175 new-borns (Martinez, Wright & Taussig 1994). This effect of environmental tobacco smoke exposure has also been reported by Kharrazi et al (2004) who used multiple logistic regression analyses in 2796 women to demonstrate a slowing of foetal growth across all levels of exposure.

The exact pathological mechanisms operating in cigarette smoking are hard to define. It has been thought that carbon monoxide concentrations reduce placental perfusion leading to foetal hypoxia and that nicotine, which freely crosses the placental barrier, impedes foetal growth (McElhatton, Bald & Pughe 2000). Support for these 'direct' smoking effects, as opposed to more long-term causal factors, was found in a population based longitudinal study (Nordstrom & Cnattingus 1994) which followed 57,732 women through first and second pregnancies. Among women who stopped smoking after their first baby, the mean birthweight of the second babies was the same as that of women who had never smoked.

Several studies have shown that smoking in pregnancy has clear and significant socioeconomic gradients (Morales, Marks & Kumar 1997, Pringle et al 2005, Kvalvik, Skjærven & Haug 2008). The Pringle et al (2005) study, based on 1650 women, suggested that mothers who smoked were younger, shorter and from

lower socioeconomic groups. The Kvalvik, Skjærven & Haug (2008) study was based on 304,905 women and illustrated that smoking was far more prevalent in those who had more than three pregnancies, teenage mothers, single women and women with low educational levels. The cessation rates during pregnancy were also affected by a socioeconomic gradient with lower socioeconomic groups being less successful in stopping smoking (Nafstad, Botten & Hagen 1996). Importantly, and to return to the issue of interconnectedness, in one British study age was a factor with almost half of the pregnant adolescents studied being smokers (Delpisheh et al 2005). Similarly, in a survey of over 1200 pregnant women, it was suggested that pregnant smokers were less likely to participate in other positive antenatal behaviours such as increasing folic acid, vitamin and iron intake (Haslam & Lawrence 2004).

Alcohol and drug misuse can also contribute to the increased risk of low birth weight. In relation to alcohol, it was considered that the potential effects may be associated with a direct teratogenic effect on the foetus (Okah, Cai & Hoff 2005). Kramer's meta-analysis (1987) estimated that the consumption of at least two alcoholic drinks per day was associated with a reduction of 155g in birthweight. This effect was compounded by cigarette smoking with women who smoke and drink alcohol in excess demonstrating an 8% reduction in mean birthweight (Peacock, Bland & Anderson 1991, Okah, Cai & Hoff 2005).

The relationship of low birth weight to other potentially harmful substances, excluding nicotine, was unclear. Certainly, specific drugs such as cocaine were known to have a powerful vasoconstricting effect on placental vessels (Keen & Alison 2001) and, in some cases, babies born to opiate abusing women tended to be smaller than women who did not abuse opiates (Keen & Alison 2001). Kennare, Heard & Chan (2005) also showed that women who used substances (of whatever

type) compared to non users were at greater risk of having a low birth weight baby. However, it has also been shown that cocaine and marijuana use were not directly associated with low birth weight, although they were associated with other adverse pregnancy outcomes such as placental abruption (Shiono et al 1995). Essentially, the mixed results suggested that any association with substance misuse and low birth weight was quite possibly an effect of the general health of the mother, including her nutritional status.

The combination and relative importance of behaviours is a crucial point to note. Low birth weight may increase significantly with the numbers of health compromising behaviours present during pregnancy (Okah, Cai & Hoff 2005). As such, in his review of the evidence on low birth weight research, Spencer (2003) postulated that for low income women in developed countries: "the girl is more likely to have been born low birthweight, to have experienced more childhood ill health, to have had a less nutritious diet with adverse effect on her growth, to have started smoking in adolescence and be less likely to quit in early pregnancy" (p129).

### **2.6.3.3 Social and Community Networks**

The third 'layer' of the Dahlgren & Whitehead model of health determinants is that of social and community networks. Before exploring this layer further, it is important to note that some of the concepts encompassed in this section are less tangible than factors such as smoking or alcohol consumption. This is discussed further below. It is also important to note that some aspects of social support may vary throughout life in terms of continuity of place and proximity to family.

It could be argued that there are two distinct, but connected, aspects that define an individual's social environment: friend and family networks; and the wider community or societal aspects considered under the term 'social capital'. Putnam (1995) defines social capital as the "features of social life - networks, norms and trusts - that facilitate coordination and cooperation for mutual benefit" (p67). These two aspects determine the level of social support available to pregnant women and are considered to be related to mental wellbeing including levels of stress. This is important because studies have demonstrated a relationship between the level of social support in pregnancy and the symptoms of stress and anxiety. For example, Glazier et al (2004) undertook a cross-sectional study on data from 2052 pregnant women. They used two self measurement indicators: the Social Stress Indicator and the Measure of Perceived Social Support Indicator (Turner, Wheaton & Lloyd 1995, Turner & Lloyd 1999) to determine negative life events, specific stressors and perceived levels of social support. Those women who reported low social support also reported higher levels of stress and emotional distress. Furthermore, this study also noted a negative correlation between levels of education, level of income and symptoms of anxiety and depression.

In an analysis of published research, Paarlberg et al (1995) reviewed a number of studies relating pregnancy outcomes to psychosocial factors. Using 15 studies that focused on low birth weight and 13 studies that focused on pre-term birth they considered that studies linking maternal stressors to birthweight and pre-term birth yielded inconclusive results. However they did note that most studies evidenced a contribution of stressors either directly or indirectly through risk behaviours, to the outcomes of low birth weight and pre-term birth. Paarlberg et al (1995) also noted some methodological challenges in collating the studies such as the use of different stress measures, the operationalisation of stress and the timing of stressful periods in relation to pregnancy. However, they concluded that "the association between

psychosocial factors and birthweight is strongest when the predictive variable is built up from several factors such as exposure to stressors, social support, anxiety and health risk behaviours” (Paarlberg et al 1995 p572). These findings were also noted in a prospective study by Dejin-Karlsson et al (2000) which supported the hypothesis that “women who give birth to small for gestational age infants lack important psychosocial coping resources, such as a sufficient social network, social support and control in daily life” (p89).

One suggestion for the association between psychosocial factors and pregnancy outcomes is that social support may have a buffering influence between life stress, whatever the cause, and the development of pregnancy complications. Certainly, some studies, which introduced elements of social support, usually through increased professional antenatal input, did appear to reduce the risk of low birth weight (Oakley, Rajan & Grant 1990, Grady & Bloom 2004, Carabin et al 2005). Specifically, Norbeck, DeJoseph & Smith (1996), in a study of African-American women were able to demonstrate a statistically significant difference ( $p < 0.05$ ) in low birth weight rates between an intervention group receiving additional face to face and telephone support and a control group receiving standard care.

Of particular interest to the notion of social capital was research linking unsafe or violent neighbourhoods to birth weight. Two studies, sampling African-American women, both demonstrated an increased risk of low birth weight among women living in more “violent”, “unsafe” or “unfriendly” neighbourhoods. The first study, (Collins & David 1997) was a cross-sectional study with data collected from 315 mothers. Those who lived in the most violent areas had a 16% low birth weight rate. The comparative rate for those living in the least violent areas was 12% (odds ratio 1.5 (1.0-2.1)). The second study (Collins et al 1998) was a case-control study which matched 28 very low birth weight babies to 52 critically ill but non low birth

weight babies. The odds ratio of very low birth weight coming from unsafe or violent neighborhoods ranged from 1.7-3.2 depending on the neighborhood circumstances measured. These results were independent of other potential risk factors such as smoking, socioeconomic status or substance abuse.

The notion of social capital is not without its critics. For example, there has been debate about how the term was 'measured', whether networks, family support or civic involvement should be considered in similar ways and whether looking at societal measures, such as group membership or civic involvement, was meaningful at the individual level (Baum & Ziersch 2003). Further, Cropper (2002) questioned whether group membership raised issues of access to groups or even exclusion from certain groups. As such, high levels of social capital could, in some cases, signify high levels of social exclusion. There was also debate about whether aspects of social capital that were 'structurally related' (i.e. group membership, group availability etc) should be considered alongside aspects that are 'cognitively related' such as levels of trust and reciprocity (Baum & Ziersch 2003).

Furthermore, the specific relationship of stress or lack of social resources to preterm births has been discounted by some researchers. Hoffman & Hatch (1996) found little relationship between social support and preterm birth, and Hodnett & Fredericks (2003) in a systematic review, found little evidence that additional support during pregnancy reduced the risk of low birth weight. In addition, Bull et al (2004) undertook an evidence briefing of meta-analyses and systematic reviews, which looked at the effectiveness of antenatal home visiting programmes by both health visitors and midwives. Bull et al (2004) found there was "insufficient evidence to suggest that home-visiting programmes can have a beneficial impact on low birthweight or other pregnancy outcomes" (Bull et al 2004 p3). However, they did suggest this was an area for future research pointing in particular to the



need for studies which reviewed the effectiveness of programmes delivered to 'high risk' groups compared to those not identified as at risk.

The notion, or even acceptance, of what is considered 'risk' is worth further comment. For example, the notion of risk raises questions about how it is perceived, assessed and managed. Further, the studies cited above indicated that there was some debate about the impact of stress, per se, as a risk factor. However, research does seem to point to a negative social environment, or a lack of social capital, as being contributory in some way to poorer health and low birth weight babies. A negative social environment may well have created greater feelings of stress in some individuals but, in relation to low birth weight, was the stress a risk factor or was the stress a mediator towards other risk factors? This was a point considered by Sheehan in 1998 who found no evidence that stress, as an absence of social support, had any direct influence on low birth weight. However Sheehan did conclude that stress itself possibly exerts its effect through smoking, alcohol or other addictive behaviours as discussed in section 2.6.3.2.

#### **2.6.3.4 Living and Working Conditions**

The fourth 'layer' of the Dahlgren & Whitehead Model is that represented by an individual's living and working conditions. The health inequalities data, cited in section 2.4, suggest an association between where someone lives and their health. Indeed many studies have demonstrated this association, such as those by Wainwright & Surtees (2003) and the body of work by McIntyre, Ellaway & Cummins (2002) and McIntyre & Ellaway (2003). These area and health associations can be evidenced at a global level, such as that seen in the Scottish data, as well as at locality level, such as that measured by various indices of deprivation. What has not always been clear, however, was at what level the 'area

effects' were operating. Tunstall, Shaw & Dorling (2004), for example, wondered if the effects stemmed from our home, street, neighbourhood, workspace or society. Arguably, the reality was that, although sometimes poorly understood, each of these environmental levels could be influential in relation to health outcomes.

In some cases the environmental influences could be present before birth increasing the risk of in utero exposure. An Australian study considered the relationship between five common air pollutants and birth weight (Mannes et al 2005). Data were collected from 13,402 small for gestational age babies and multivariate regression modelling controlled for confounders such as maternal smoking and indigenous status. However, the authors were unable to control for specific confounders such as passive smoking, maternal nutrition, occupation or socioeconomic status. The results suggest that carbon monoxide and nitrogen dioxide concentrations in the second and third trimester had a statistically significant adverse effect on birthweight. The potential pathology suggested was of a decrease in the in utero oxygen supply or an inflammatory response to the presence of pollution induced free radicals.

Socioeconomic status was interesting in the consideration of another potential environmental low birth weight hazard – landfill sites. Elliot et al (2001) investigated the risk of adverse birth outcomes in relation to maternal residence within 2km of a landfill site. The study looked at 9565 landfill sites in operation between 1982 and 1997 and found a small excess risk of low birth weight in populations living near these landfill sites. The authors could not determine any specific causal mechanism for this excess risk but one factor was particularly interesting: adjusting for deprivation reduced these excess risks slightly. This suggested that deprivation itself was an important factor in the determination of low birth weight. However, the additional association of deprivation with the environment was evident when it was

noted that areas within 2km of landfill sites tended to be more deprived than areas beyond 2km. In environmental terms, the reality was that deprived communities were exposed “more often and more intensively to such environmental hazards as lead, air pollution, agrochemicals, incinerator emissions and releases from hazardous waste sites” (Silbergeld & Patrick 2005 p11).

Other potential health impacting aspects of the physical environment included: the density of outlets for alcohol and tobacco; access to fresh healthy food; crime rates and the general standard of buildings and amenities (O’Campo et al 1997, Farley et al 2006). For example, a multilevel analysis in Baltimore noted that poor housing conditions and high crime and unemployment rates may have modified the relationship between individual risk factors and low birthweight (O’Campo et al 1997). More recently, Farley et al (2006) studied the relationship of specific physical environmental factors to the levels of neighbourhood economic deprivation and adverse birth outcomes in Louisiana. They noted that median household income was negatively correlated with the density of boarded up houses ( $r = -0.34$ ), alcohol outlets ( $r = -0.21$ ) and tobacco outlets ( $r = -0.22$ ). It was also positively, if weakly, correlated with the density of supermarkets ( $r = 0.19$ ) and fast-food outlets ( $r = 0.14$ ). Farley et al analysed each variable at the group level (‘between tract variance’) in relation to birth weight and found that that greatest amount of variance (53%) was attributed to median household income. However, they also suggested that the density of alcohol, tobacco or fast-food outlets was not associated with adverse birth outcomes.

Farley et al (2006) reported limitations in their study such as the weaknesses of a cross-sectional design and the fact that density of outlets is only a proxy for actual availability of specific substances such as alcohol. They concluded that there was a possibility that neighbourhood factors did have the capacity to influence birth

outcomes and, in particular, “environmental influences may exert themselves on women not over a pregnancy but over a lifetime making neighbourhood conditions at that time of birth relatively unimportant” (Farley et al 2006 p198).

Several studies have linked maternal occupation to pregnancy outcomes. For example there was some evidence for increased risk of extreme outcomes, such as miscarriage, in association with environmental factors within the microelectronics industry (Correa et al 1996). Furthermore, in Scotland, low birth weight has been found to be a more frequent occurrence in women employed in manual rather than non-manual jobs (Sanjose & Romanelli 1991). In an American study, focusing solely on non-black, married women, it was found that working more than 40 hours per week carried a greater risk of low birth weight (Peoples-Sheps et al 1991). The potential impact of working hours was also noted in a more recent study. Vrijkotte et al (2009) undertook a prospective study using data from 7135 pregnant women. They demonstrated that a working week of more than 32 hours or a high demand job were both significantly associated with a decrease in mean birthweight. The relationship with type of employment was also noted in the research review by Paarlberg et al (1995) who found that the odds ratios of adverse outcomes of pregnancy were higher among women with jobs characterised by high demands and low control. This links with the stress / power imbalance in the findings of Marmot (2003) discussed in section 2.3.

However, work per se, has also been shown to convey positive benefits with a Swedish study (Sydsjo 2006) showing that an ongoing rise in mean birthweight over the preceding decades was most evident in women who were employed ( $p < 0.001$ ) than women who were not employed ( $p = 0.533$ ). Furthermore, Reime et al (2006) reviewed data collected from 182,444 births and used multivariate logistic regression analyses to explore the relationships between a number of variables

and low birth weight. The unadjusted odds ratio was 1.53 (1.29, 1.82) for low birth weight and unemployment and 1.43 (1.25, 1.63) for low birth weight and manual work. The risks for low birth weight for unemployed women and manual workers decreased in the adjusted model but remained significant.

Occupation and employment in general, are often closely linked with educational attainment and this was another aspect which has been studied in relation to low birth weight. In a German study which compared intrauterine growth rates between the former East and West German sectors it was found that across both areas women with the lowest education levels had a significantly higher risk of having a low birth weight baby (odds ratio 2.58, 95% CI 1.17-5.67) (Raum et al 2001). Importantly, the low education risk was independent of the historically different social, political and health care systems inherent in the two areas. Of further note was the fact that in this study, an adjustment for better knowledge of health related behaviour and use of the health care system could not fully explain the impact of maternal education.

Other authors have also reported an association between education levels and birth weight. For example, a large Canadian population based study (with available data from 825,349 births) compared the effects of neighbourhood income and education levels on birth outcomes (Luo, Wilkins & Kramer 2006). This study found that both variables significantly increased the risk of pre-term birth, small for gestational age birth or stillbirth. They also noted that the effects of maternal education levels were larger than, and also independent of, neighbourhood income. They concluded that individual education measures and neighbourhood socioeconomic measures (to a lesser extent) were independent indicators for adverse pregnancy outcomes in specific subpopulations.

Interestingly, Anderson and Mortenson (2006), in a commentary on inequalities and birth outcomes, concluded that although income and occupation differences largely reflected educational attainment, maternal education was also indicative of other factors. Specifically, they hypothesised that education also represented the dimension of knowledge associated with the ability to understand public health messages (which by and large tend to be generically developed). A further hypothesis here may have been that education levels also reflected a lack of understanding in relation to rights of access to care, the ability to access further information, or even more fundamentally, the ability to recognise that further information or knowledge was actually required.

#### **2.6.3.5 Socioeconomic Background**

The Dahlgren & Whitehead model advocates socioeconomic background as one of the overarching but interlinked factors that influences health. But, in relation to pregnancy outcomes, it was important to consider whether socioeconomic background was an influence in its own right. In one study around 30% of low birth weights were statistically attributable to social inequality (Spencer, Logan & Gill 1999). In addition, Spencer (2003) in a review of the determinants of birthweight cited over 15 studies relating social background to birthweight. Spencer & Logan (2003) also undertook a systematic review looking at the relationship between socioeconomic status and sudden unexpected death in infancy (SUDI). The review included 52 case control or cohort studies and found that an increase in SUDI in 51 studies was associated with at least one measure of socioeconomic status. Over 30 studies demonstrated a dose response in this association.

A linear relationship had also been noted in relation to low birth weight and the Townsend Deprivation Score (Aveyard, Manaseki & Chambers 2002). Further

studies, specifically focusing on income inequality, have noted that high income inequality has an adverse effect on low birth weight rates (Kaplan et al 1996, Lynch et al 2001, Muntaner et al 2002). And in a study which reviewed changes in social status between pregnancies up to twelve years apart, it was shown that a decline in social status increased the absolute risk of having a low birth weight baby by about 5% (Basso et al 1997). Cuba provides an interesting comparison here. In a country less income divided, but with a universal health care system, they have an infant mortality rate that compares favourably with the US and Canada and a low birth rate of 5.5% (Cooper, Kennelly, Ordun ez-Garcia 2006). Their maternal death rate, however, remains significantly higher than developed countries (Cooper, Kennelly, Ordun ez-Garcia 2006).

Two studies reviewed UK birth trends over a number of years. One focused on all live birth registrations in England & Wales from 1976 to 2000 (Maher & Macfarlane 2004) and one focused on all live births in Scotland from 1980 to 2000 (Fairley & Leyland 2006). Both studies had extremely large populations and used Registrar General occupational information to determine the social class of the parents (Registrar General 2000). Both studies acknowledged limitations in this methodology particularly in relation to recording the occupational status of single women. However, both these reviews demonstrated an adverse association between social background and birth weight which persisted, and in some cases increased, throughout the period under study.

Similarly, Kramer et al (2000) cited eight different international studies all of which demonstrated a distinct social gradient in relation to low birthweight and preterm birth. However Kramer et al (2000) and Spencer (2003) concluded that socioeconomic status per se was probably not a direct, independent determinant of foetal growth. Specifically, Kramer et al (2000), referring to developed countries

where on average 25% of women smoked and a substantial minority were non white, outlined a chart identifying 10 proportioned determinants of low birth weight. These determinants, such as those discussed throughout this chapter, included cigarette smoking, weight, parity, height, ethnicity, alcohol, genetics, and pregnancy weight gain. There was no specific determinant labelled 'socioeconomic status'. It might have seemed then that the role of socioeconomic deprivation was considered minimal or at least not as important as the specific factors outlined in the chart. Kramer, though, argued for quite the contrary. In line with lifecourse health, he maintained that each factor, or 'mediating variable', lay on a causal pathway between low socioeconomic status and low birthweight (Kramer et al 2000). The result, through the action of chronic stressors, was that a low socioeconomic status created the right environment for an accumulation of mediating variables "which may synergistically increase the risk of adverse pregnancy outcome to a far greater extent than can be explained by their individual aetiological contributions" (Kramer et al 2000 p204).

This pathway effect was also noted by Spencer (2003). In his review of the evidence base surrounding low birthweight, he detailed several diagrammatical models, or pathways, which illustrated the potential factors contributing to poor health and low birthweight. The final model, developed by Spencer, included specific individual determinants of health, such as those discussed in this chapter. But the model also placed significant emphasis on societal income distribution, both at maternal and infant birth, and socioeconomic status, again both at maternal and infant birth. Indeed, Spencer maintained that "the societal influences [combined with the individual determinants discussed above] form the basis for an extended explanatory model of birthweight determination" (Spencer 2003 p163).



To conclude, section 2.6, has focused primarily on low birth weight and its trends and determinants. The evidence detailed in this chapter, including meta-analyses and systematic reviews, has explored the main determinants of low birth weight using a framework based on the Dahlgren & Whitehead model (1991). Each determinant, whether constitutionally fixed or related to lifestyle, social networks, or the living and working environment, is potentially an important precursor to low birth weight or other negative pregnancy outcomes. However, despite the difficulties inherent in disentangling the myriad of influences, the evidence outlines a strong association with socioeconomic deprivation. The exploration of the other potential determinants of low birth weight has not diminished this association. The underlying fact is that, irrespective of specific individual influences, it is the presence of socioeconomic deprivation that enhances the circumstances for these influences to restrict foetal growth (Kramer 1998).

## **2.7 Antenatal Care**

One aspect of the Dahlgren & Whitehead (1991) model has yet to be discussed: the health care component. In section 2.7 the current antenatal policy approach in Scotland is outlined as is the evidence base around the targeting of services. This is followed by an overview of research detailing what is currently known about women's perceptions of antenatal care. The chapter will end by concluding the case for more socioeconomically based antenatal research.

### **2.7.1 Antenatal Care: the Current Policy Approach**

In 2003, the World Health Organisation published a synthesis of published research on the effectiveness of antenatal care (Banta 2003). Although there was a degree of caution raised in interpreting results from different countries, a number of

conclusions were reached. Specific clinical aspects were shown to be effective, such as screening for preeclampsia and iron deficiency anaemia, blood typing and antibody screening, amniocentesis in high risk women, and also education and support re smoking, alcohol consumption and nutrition. There was no evidence to confirm the effectiveness of antenatal education classes but in the absence of evidence to the contrary their continuation was recommended. Substantial advantages were noted for the importance of social and psychological support during pregnancy.

In Scotland, three reports, each building on the one before, shape the current approach to the provision of antenatal services. The first publication, 'A Framework for Maternity Services in Scotland' (Scottish Executive 2001) outlined an incremental approach to antenatal care which encompassed four levels of care provision ranging from community based where care is managed by a midwife to tertiary based where care is managed by a specialist consultant. The Framework outlined a vision that supported partnership between women, their families and the professionals providing care; affirmed pregnancy and childbirth as 'normal' physiological events in a woman's life; set out principles for care with actions for all stakeholders in maternity care provision; and sought to drive up the standard of care by challenging professionals and NHS Scotland to meet the needs of women and their partners (EGAMS 2002).

In 2002, the Expert Group on Acute Maternity Services (EGAMS 2002) produced a publication detailing how services should apply the principles outlined in the Framework for Maternity Services. This second publication, 'Implementing a Framework for Maternity Services in Scotland', endorsed the initial publication and reinforced the message that care should be provided based on the best available evidence, be of a consistently high quality and be delivered by skilled, appropriately

trained professionals. This publication also provided more detail around the criteria for entry and exit into each of the four levels of care described above. Finally, in March 2005, NHS Quality Improvement Scotland produced new Clinical Maternity Standards. Again, these were underpinned by the Framework but aimed to set a benchmark by which NHS Boards would be monitored in terms of their antenatal provision.

It is evident that the approach contained within the Framework for Maternity Services has remained at the heart of all maternity services since 2001. This publication outlined 27 principles covering preconception to the postnatal period with eight of these devoted to preconception and pregnancy. Two principles were of particular relevance to my study: principle one stated that 'good health, before and during early pregnancy benefits the woman, her unborn child and the wider family'; and principle seven stated that 'maternity services should make sure that women's circumstances are assessed holistically and that social and psychological needs are identified and managed appropriately'. To achieve these principles, the framework encourages NHS Boards to "adopt a proactive, approach to improving the health of the more disadvantaged woman" (p33). This obviously acknowledges the relevance of deprivation and a targeted approach to planning care, yet further principles in the framework, and its associated 'model of practice', adopt a clinical perspective to early pregnancy where effort is directed towards the treatment of 'complications'. This means that, despite what is known about the greater risk of health problems in women living in deprived areas, the framework offers no model of practice which advocates a targeted, client focused antenatal service to women who live in deprived communities.

### **2.7.2 Targeting of Antenatal Care: the Evidence**

There may be a sound reason as to why the maternity framework offers no model of practice in working with socioeconomically deprived women: the lack of an evidence base in this area. A number of national and international systematic reviews and literature reviews have been undertaken in recent years (Oakley et al 2009, Hollowell et al 2009, Raisler & Kennedy 2005, D'Souza & Garcia 2004, Bull, Mulvihill & Quigley 2003, Rowe & Garcia 2003). Each of these reviews has concluded that there is little good quality evidence on the relationship between antenatal care (not outcomes) and socioeconomic deprivation. For example, Bull, Mulvihill & Quigley (2003), in an evidence briefing looking at the prevention of low birth weight, expressed concern about the lack of evidence regarding interventions targeting specific socioeconomic groups. The authors called for further research including the use of process and qualitative information. In the systematic review by Rowe & Garcia (2003), the authors reached a similar conclusion. Rowe & Garcia considered over 1300 initial papers for their review and concluded that most studies were of poor quality and were somewhat dated. Only nine papers were included in the final review leading them to conclude that despite the number of studies, there was little 'quality evidence' that actually considered social inequalities in relation to antenatal attendance and care.

The lack of evidence was summed up by D'Souza & Garcia (2004), whose review looked at the provision of antenatal care for a number of disadvantaged groups. Their literature search covered a thirteen year period from 1990 and, although focused on specific subgroups of disadvantage such as homeless or ethnic minorities, yielded few studies on which policy and practice could be based. They concluded that "overall the evidence of how services in the UK are organised and delivered to improve outcomes for disadvantaged women is limited" (p607).

Two of the most recent systematic reviews, Oakley et al (2009) and Hollowell et al (2009) confirm that the lack of an evidence base persists. Both reviews focused on the effectiveness of antenatal interventions for socially disadvantaged women. Hollowell et al (2009) included 40 studies that focused on interventions designed to reduce the causes of infant mortality including pre-term birth and Oakley et al (2009) included 16 studies focused on interventions designed to increase early initiation of antenatal care. In total only 5 UK based reports were included. Both reviews concluded that there was insufficient evidence by which to assess the effectiveness of antenatal interventions although a small number of interventions were considered promising if subject to robust evaluation. Oakley et al (2009) also recommended further research looking at barriers and facilitators of uptake of antenatal care.

The rationale and evidence base for the *need* to target care towards socioeconomic women is much less limited. Earlier sections of this literature review have explored the socioeconomic imbalance in pregnancy outcomes. However, a socioeconomic imbalance has been noted *throughout* the antenatal period as evidenced in the linked quantitative studies by Kupek et al (2002) and Petrou et al (2001). These studies, highlighted in the introduction to this thesis, suggested that primigravida women, with high obstetric risk were far more likely to fail to book early for antenatal care than a low risk reference group. Similarly, even when services had been accessed there still appeared to be a socioeconomic inequality in ongoing uptake as noted in the studies by Rowe et al (2008), Rowe & Garcia (2003), Dallas & Deery (1997) and Nolan (1995). Specifically, it was noted that in the majority of studies, women from lower socioeconomic backgrounds initiated care late and attended less frequently than women from affluent backgrounds.

Downe et al (2009) noted that around 20% of maternal deaths are attributed to 'marginalised women' who fail to receive adequate antenatal care. But there was often no definitive reason for the lack of attendance for care. Downe et al (2009) determined to identify potential barriers to accessing antenatal care in marginalised women by undertaken a meta-synthesis of qualitative research published since 1980. Only eight studies were able to be included and potential reasons for inadequate attendance included women 'weighing up and balancing out' perceived gains and losses in terms of finance and support. Other factors related to the quality of care and the cultural sensitivity of staff and feelings of mutual respect.

The imbalance in the uptake of antenatal services outlined above is not a uniquely antenatal problem. Evidence tells us that when a universal health care service is offered to all, then those most at risk of health problems are the ones who will access the service least, will be less likely to seek out early advice, and will be less likely to make use of health promotion materials (Acheson 1998).

With respect to antenatal care, the Royal College of Obstetricians and Gynaecologists (RCOG 2004) made several key recommendations that directly related to the targeting of services. They included the following:

- There is an urgent need to identify and then provide services which help overcome barriers
- Antenatal care needs to be inclusive and flexible enough to meet the needs of all women including the vulnerable and hard to reach
- The needs of those most excluded in society are of equal, if not more, importance

- High quality antenatal care does not just include providing a supportive clinical environment but also includes providing a gateway to other services, including the provision of multidisciplinary support, whether medical or social, that will help achieve the best possible outcomes
- Healthcare professionals who work with disadvantaged clients need to be able to understand a woman's social and cultural background, act as an advocate for women, overcome their own personal and social prejudices and practice in a reflective manner

These recommendations quite clearly advocate directing care towards specific need. This targeted approach underpins almost all NHS related policy of recent years (NHS Quality Improvement 2005, Scottish Executive 2003, 2004, 2005, 2006, and Scottish Government 2007). Furthermore, despite the lack of antenatal evidence and direction, there is no shortage of proponents who advocate that the antenatal period provides an ideal opportunity to address health inequalities and, as such, antenatal care should clearly be targeted towards those in poorer socioeconomic areas (Gudmundsson et al 1997, Luginnah et al 1999, Sheppard, Zambrana & O'Malley 2004).

However as stated earlier, the problem is that whilst evidence tells us intrinsically that 'targeting' is required to reduce health inequalities, there is little evidence that tells us what form this targeting should take. This is an issue with much public health related policy - there is a gulf between policy and practice (Hart & Lockey 2002, Oliver & Nutbeam 2003, McIntyre 2003, Hunter & Killoran 2004). Hart & Lockey (2002) demonstrated this gulf empirically when they followed up a national study of pre and post registration midwifery education with three in-depth case studies looking at midwifery education in differing parts of England. They demonstrated a lack of 'clear and specific strategies' concerning inequalities in

health evidenced at managerial level and a 'patchy knowledge' of inequalities policy evidenced among practicing midwives. The gap between policy and practice was also noted by Hanson et al (2009). They reviewed four American antenatal care guidelines and noted that detail was often lacking in order for midwives to appropriately address individual need. They concluded more attention was needed to redress the gaps in current research to ensure that antenatal guidelines contribute effectively.

McIntyre (2003) considered that the reason for the gulf between policy and practice was the lack of studies, including systematic reviews, reporting on socioeconomic differences in relation to results. A further concern stemmed from the multifaceted nature of many inequalities in which research evaluation is not always able to identify which parts of programmes or policies are effective (Crombie et al 2005). This is particularly evident in low birthweight research where, in addition to the multi-causal dimension, the time period available for effective intervention is relatively short (Spencer 2003).

The inability to demonstrate a reduction in inequalities is one of the arguments against targeted services. Another argument stems from the work of Geoffrey Rose, a much quoted advocate for retaining universal services (1992). He put forward radical thoughts on the idea of targeting services towards specific groups with his main theory focusing on 'distributions' within society. Essentially, Rose maintained that in a normally distributed society, any focus on high risk groups would have limited impact because in a continuum of risk ranging from low to high, the maximum impact would be lost if attention was given solely to the 'high risk tail'. Furthermore, in relation to pregnancy, Rose pointed to several weaknesses of targeting to specific groups (cited Spencer 2003): anxiety would be increased if women perceived themselves as 'not normal'; the underlying causes of high risk



behaviours are likely to remain; changing specific high risk behaviours may force women to 'step out of line' with peers and their societal norms; and high population risk of adverse outcome is a poor predictor of actual individual outcome.

Hart & Lockey (2002) summed up the dichotomy between policy and practice in their empirical review. They concluded: "practitioners find difficulty in prioritising care and targeting resources to disadvantaged clients in line with policy directives. Tensions between policy and practice in the care of disadvantaged women clearly exist" (Hart & Lockey 2002 p485). It is possible that tensions will persist and care may remain ineffective for as long as we lack the tangible evidence that allows us to incorporate socioeconomic deprivation into antenatal planning in a meaningful way.

Yet according to the RCOG incorporating socioeconomic deprivation is exactly what we need to do. The RCOG conclude that it is vital that modern maternity services ensure that women from all groups of society have easy and equal access to the full range of high quality antenatal care. In their words this means enabling women to seek care they feel happy with (RCOG 2004). This care should also be able to reduce the risk of negative pregnancy outcomes particularly for those at greatest risk. Reaching those at greatest risk is, however, one of the great challenges in relation to health care. Ultimately, the provision of care or interventions "can be considered successful only when they are at least as effective for the lowest socioeconomic group as for the highest" (Hunter & Killoran 2004 p2).

### **2.7.3 Women's Perceptions of Current Antenatal Care**

It would seem, according to Hunter & Killoran (2004) that antenatal care cannot yet be considered effective based on the wealth of evidence for adverse pregnancy

outcomes in women from lower socioeconomic backgrounds. There is also a disappointing lack of evidence concerning the socioeconomically based perceptions of the care itself. Three national quantitative studies confirm this.

Hundley et al (2000) undertook a national survey in Scotland. All women giving birth in Scotland within the survey period were eligible to participate. In total 1137 questionnaires were analysed representing a response rate of 69%. Almost 30% of the sample was identified as being in the three most deprived Carstairs & Morris (1991) deprivation categories (5, 6 and 7). However, in this study, despite having recorded deprivation status, no analysis was undertaken using deprivation as a variable. As such, the results are generic to all women and suggested that only 51% of the women had attended antenatal classes or groups during pregnancy, the majority being first time mothers; one fifth of women who had a written birth plan were not involved in its preparation; and 'most' women were satisfied with the care they received.

In England, a quantitative postal based survey was carried out on all women who had a live birth in one month of 2007, excluding those under 16 years (Healthcare Commission 2007). Over 26,000 women took part which was a response rate of 59%. This survey monitored ethnicity but there was no evidence that results were analysed on socioeconomic variables. In this study, over a third of women (36%) said they had not been offered antenatal classes provided by the NHS.

The importance of a qualitative aspect to data collection and analysis was emphasised by the quantitative study published by the National Perinatal Epidemiology Unit (NPEU) (Redshaw et al 2007). The NPEU study was based on a random postal survey of 4800 women of any parity who delivered during one week in March 2006. The usable survey response rate was 63% and the findings

covered all aspects of antenatal care and delivery. Of particular relevance to my study was the fact that women were categorised using the (English) Index of Multiple Deprivation in order to facilitate analysis according to socioeconomic background. In the NPEU study they compared the most deprived group to a collective group of all other women and found no difference between the groups in terms of those who described feeling positive about their care at the stage of booking. Indeed, in terms of satisfaction with overall antenatal care, the Redshaw study noted no significant difference between deprived and non deprived groups at any stage.

However, the NPEU quantitative approach, based on structured questionnaires, limited further exploration. This lack of depth was an important issue as Redshaw noted a significant difference between the deprived and non deprived groups in terms of women reporting being talked to in a way that was easy to understand. In fact, 17.1% of women from Redshaw's deprived group stated that they did not always understand what was being said by doctors or midwives. Similarly, significantly fewer women from the deprived group reported having contact details of a midwife during pregnancy. Therefore, it seemed that whilst both socioeconomic groups reported similar levels of satisfaction with antenatal care, there were data that indicated differences in the experiences of socioeconomically different groups. However, without a qualitative perspective there was no way of determining what may have underpinned these differences.

#### **2.7.4 Concluding the Case for Research**

Health inequalities are long standing and complex. It is this inherent complexity that fuels the difficulties in improving health outcomes for specific groups. So too, does our collective lack of knowledge about how to begin to bridge the gap between

knowing someone is at risk and being able to offer care which minimises that risk. From the systematic reviews discussed in this section of the literature review (D'Souza & Garcia 2004, Bull, Mulvihill & Quigley 2003, Rowe & Garcia 2003) it appears that current antenatal provision remains some way short of the ideals of the RCOG. Not only was there a lack of a particular socially orientated package of care that could reduce the risk of adverse pregnancy outcomes, but health professionals were not even in a position to identify care that they could be certain was appropriate to the needs and complexity of women from the most deprived backgrounds.

This latter point needed to be the starting point in the development of antenatal care that could reduce inequalities. In the long-term, it would be desirable and important to determine effective care that could reduce socioeconomically related pregnancy outcomes. Arguably, this would be stage two of a research programme. However, before reaching this stage, it was imperative to develop our understanding of the impact of socioeconomic factors on the way women perceived, and progressed through, the current antenatal programme.

Rowe & Garcia (2003) made several research recommendations in relation to this aspect. Specifically, they suggested using qualitative data and charting women's pathways through maternity care to assess whether these differed by social class. In Scotland, with the advent of the Scottish Index of Multiple Deprivation, we had considerable scope to expand any analysis beyond social class. As such, it was fortuitous to have an opportunity to add a Scottish dimension to the emergence of socially based antenatal research. Essentially, though, the basis for my thesis was the need for research which began the process of redressing the socioeconomic imbalance in antenatal care.

Further research recommendations made by Redshaw and van den Akker (2008) advocated that any research must incorporate the role of individual differences and variations between cultures in order to understand “some of the complex factors at work in how women experience care” (p71). They advocated long and short longitudinal studies that could make comparisons between groups and across time. From these recommendations, I considered that the starting point for my research had to be a longitudinal, patient centred comparative review across socioeconomic extremes that harnessed the perceptions and relevance of the current antenatal provision.

The next chapter of my thesis will detail the local context for my research, including outlining the local research area. There will also be an illustration of the measurement of populations as this was an important concept underpinning my research process.

## **CHAPTER 3 ASPECTS UNDERPINNING RESEARCH**

### **3.1 Introduction**

In this chapter the localised aspects underpinning the research process in my thesis are outlined. This outline includes the background to the Scottish Index of Multiple Deprivation which was used as the basis for sample identification and detail on the local authority area where the sample resided.

### **3.2 Measurement of Populations and Deprivation**

The collation and analysis of health inequalities data, or any population based data, relies on being able to aggregate individuals within any given population. The method of aggregation has undergone various transformations over the years and, not surprisingly, it has taken the growing understanding of the influences on health outlined in the previous chapter to arrive at the population aggregate used in Scotland today. The current system for measuring population deprivation is the Scottish Index of Multiple Deprivation. This index is used in my thesis to identify the relevant antenatal study population and as such it is important to explore how this measurement had been developed. This groundwork was important in order to set the context for my thesis: the relationship between deprivation, inequalities and antenatal care.

Historically, the most common interpretation of 'grading' has been the Registrar General's classification of 'social class'. The social class system has been used extensively in the analysis of data and has become a very familiar concept. The population, based on (male) head of household occupation, was divided into classes which latterly had evolved into:

1. Managers & Senior Officials;
2. Professional Occupations;
3. Associate Professional & Technical Occupations;
4. Administrative & Secretarial Occupations;
5. Skilled Trades Occupations;
6. Personal Services Occupations;
7. Sales & Customer Service Occupations;
8. Process, Plant and Machine Operations;
9. Elementary Occupations

(Registrar General Occupational Groupings 2000).

The aim of these groupings was to ensure each category was “homogenous in relation to the general standing within the community of the occupations concerned” (Central Statistical Office 1966 xiii cited Miers 2003). There have been many criticisms of the social (occupational) class system (Miers 2003, Carstairs & Morris 1991, McLaren & Bain 1998). These criticisms range from the system being too ‘subjective’ and more concerned with status than occupational earning capacity; difficulties in the analysis of trends over time; and the difficulty of categorising certain groups such as the unemployed or married women.

There have been attempts over the years to address some of these concerns including efforts to make the groupings more meaningful to today’s occupations. However, there is still a case, particularly in relation to health data analysis, for considering that social class based analysis is too one dimensional. This stems from social class being concerned solely with one specific aspect of individual circumstances. These individual circumstances are certainly important but they are limited in terms of dynamic and cultural factors that may be relevant to health. As such, social or occupational class analysis does not go far enough towards

explaining the difference between individuals and health outcomes. Furthermore, there is a danger that important health data are missed when it is considered that up to 40% of female deaths are unattributed to social class (Scottish Executive 2003b). A step forward in the thinking around measuring population and population health was to expand the social class approach to incorporate the presence – or *deprivation* - of additional factors within given populations.

The term 'deprivation' can relate to any number of factors. For example, McLaren & Bain (1998) cite three particular concepts of deprivation which are in keeping with the social determinants of health discussed in chapter 2. These concepts of deprivation are: material deprivation, which reflects the access people have to goods and resources; social deprivation, which reflects people's roles, relationships, memberships and contacts within society; and multiple deprivation, which reflects the concurrent presence of several forms of specific deprivation such as low income, poor housing and unemployment. Each of these concepts relates not only to the individual per se, but to the life and health enhancing opportunities that an individual has within the area that they live. A lack of these life enhancing opportunities is considered to reflect area based 'socioeconomic deprivation'. The level and impact of this socioeconomic deprivation can be determined cross-sectionally and longitudinally across population groups through the process of area-based measurements.

Area based measurements, with their ability to incorporate additional population based factors, are far removed from the narrow confines of social class measurement. One of the earlier 'area-based' measurements was the Carstairs and Morris Index of Deprivation (1989). This index, based on the 1981 census data in Scotland, utilised four variables relating particularly to the material deprivation concept described above. The variables were: overcrowding, concerning the



density of individuals per room; male unemployment; social class, relating to social class IV and V; and car ownership. The index was calculated according to the proportion of these variables within a given postcode sector. The subsequent 'deprivation score' allowed the population to be ranked into five quintiles ranging from very high deprivation (quintile 5) to very low deprivation (quintile 1).

The Carstairs Deprivation Index has been widely used throughout Scotland in relation to monitoring and analysing health inequalities (Scottish Executive 2003b). However it has always had certain limitations (McLaren & Bain 1998, Scottish Executive 2003b). Firstly, it was based on census data which was only updated every ten years. Any changes made to the index between census schedules would generally be based on less accurate data. Secondly, the variable of car ownership was highly contentious as a means of determining deprivation. In some rural areas, for example, it would be essential to have a car but this would not necessarily reflect material advantage. Thirdly, measurement sectors which had mixed levels of deprivation – which may range from high to low – would possibly have been given a middle quintile rank. Lastly, there was one final point which related not only to Carstairs but to some other area-based measures. If the indicators used to 'identify' individual deprivation were not sufficiently robust, then the process of categorising areas by the groupings of individuals within those areas could sometimes create anomalies. For example, after the 1991 census based categorisation, it was estimated that 55% of the most deprived individuals in England and Wales lived outside the 20% of areas that were categorised as most deprived (Sloggett & Joshi 1994).

Therefore, it is crucially important to have an area measurement that realistically reflects deprivation. A measurement that can not only incorporate the learning from social class and Carstairs analysis but can also incorporate the wider potential

health indicators such as those encompassed in the Dahlgren & Whitehead model outlined in chapter 2. In Scotland, until very recently, this area measurement was based on the 'Deprived Areas in Scotland' Index (Scottish Office 1995). This index, based on the 1991 census, used a series of six indicators to determine multiple levels of deprivation in a given area. These indicators (cited Renfrewshire Council 2004) were: dependency households; overcrowding; the permanent sick; unemployment; youth unemployment; and single parent families. This measurement expanded on the four indicator based Carstairs index but there were still problems – not least because it still relied on the ten year census data.

Furthermore, the areas of deprivation were based on local authority enumeration districts. This 'mapping' against boundaries of a specific area was unlikely to fit the spatial scale of real deprivation in and around that area (Renfrewshire Council 2004). Also, by focusing on indirect measures of deprivation e.g. by using proxy groups such as the elderly or single parents, there was a risk that some of these individuals in a given area would not actually be deprived. The direct measures of deprivation, such as unemployment, were more effective at capturing true deprivation rates. The reality of the Deprived Areas in Scotland index was that it captured more specific deprivation than social class or Carstairs models but there was still a risk that it 'masked' local pockets of deprivation and was not responsive enough to changing demographics. With Scottish Executive funding following identified need these 'hidden' areas were in danger of receiving little or no attention. The answer, as of 2004, was the Scottish Index of Multiple Deprivation (SIMD).

### **3.3 Use of the Scottish Index of Multiple Deprivation**

The ability to distinguish socioeconomically between areas is made possible by the Scottish Index of Multiple Deprivation (SIMD). The methodology underpinning the SIMD was developed by the Social Disadvantage Research Centre at the University of Oxford. The principles are consistent with the work of Carstairs, and others, in defining and measuring deprivation and build on the techniques used to produce the recent indices in England, Wales and Northern Ireland. “The premise is that deprivation is a multidimensional concept where standards are defined in relation to social norms or expectations. It is, therefore, a relative concept rather than an absolute one” (Scottish Executive 2004b p12).

The SIMD measures deprivation as a composite of ‘domains of deprivation’ that any individual or household can experience. In the first SIMD published in 2004, six domains were used. Each of these domains contained a number of deprivation indicators. In 2006 the updated SIMD added a further domain and now there are 37 indicators which reflect the wider influences, or determinants, of health as contained within the Dahlgren & Whitehead model.

The seven domains are:

1. Current Income Domain, containing indicators measuring low income by the proportion of adults and children receiving low income benefits
2. Employment Domain, containing indicators identifying those people who want to work but due to unemployment, ill health or disability are excluded from the labour market
3. Health Domain, containing indicators that focus on mortality and morbidity

4. Education, Skills and Training Domain, containing indicators that measure lack of progression to higher or further education
5. Housing Domain, containing indicators that measure persons and households which are overcrowded and persons in households without central heating
6. Geographic Access and Telecommunications Domain, containing indicators that measure the use of public transport and the drive time to specific services such as General Practitioner, supermarket, petrol station, primary school, and post office
7. Crime Domain, containing indicators linking recorded crime to deprivation

Depending on the robustness of the original data, different techniques are used to convert the indicators into a domain deprivation score. For example, for the income and employment domains, where the data are provided directly from the Department of Work and Pensions, scores are calculated as a simple rate based on the sum of the indicator counts and using the appropriate population as a denominator (Scottish Executive 2004b). However, where it is felt that the individual indicators are less likely to accurately measure the reality – as within the health domain where data reflects hospital use – then the data are transformed into a standard normal distribution. This is designed to counteract the effect of outliers and ensure the subsequent score more closely represents the area in question.

Once the individual domain scores are calculated they are then combined into the overall Scottish Index of Multiple Deprivation. The index is based on the recently introduced small area statistical geography called Data Zones. Each data zone is a group of census output areas which have populations of between 500 and 1,000 household residents and are sufficiently localised to identify ‘pockets’ of deprivation that may previously have been missed in analyses based on postcode sectors or

wards. Importantly, each data zone is likely to exhibit substantially more homogeneity across the constituent population and households in respect of their socioeconomic characteristics than the associated larger geography, such as the sector or ward that the data zone sits within (Scottish Executive 2004b).

Across Scotland there are 6505 data zones which have been ranked based on their levels of relative deprivation. These datazones rank from 1 – the most deprived, to 6505 – the least deprived. It is those people living in the most deprived 15% - 20% of datazones who are deemed to be living in relative deprivation. This level is used as it identifies the highest concentrations of multiple deprivation and covers datazones ranked one to 1307 (Scottish Executive 2006). In 2006, the most deprived datazone in Scotland was within my study area. This datazone was ranked 14<sup>th</sup> in 2004 and gives a good indication of the changing nature of deprivation measurement. It also illustrates an advantage of the new SIMD process – the datazone boundaries remain constant. This means that it is now possible, for the first time, to analyse change over time between SIMD 2004 and SIMD 2006 (Scottish Executive 2006). However the Executive does caution that any changes in datazone rank are relative and do not imply absolute change in a datazone. However, using the two versions it is interesting to note that, in my study locality, the analysis between 2004 and 2006 saw one area move into the 15% deprivation category and 6 areas move out of this category. However, when considered at the 20% deprivation category the number of deprived datazones in my study locality remained constant at 60.

The Scottish Index of Multiple Deprivation, in common with its predecessors, is open to a degree of interpretation and criticism. Bramley (2005) produced a report assessing its statistical validity and appropriateness for targeting resources for the Scottish Parliament Corporate Body. In this report Bramley concluded that the

SIMD was an effective measure for identifying concentrated and multiple deprivation. It was also an improvement on previous indices. However, he also concluded that, for resource allocation purposes, it was unhelpful that the SIMD could not readily indicate how much more deprivation there was in one area than another. Furthermore, there were two other points made: as with any index of this kind, the SIMD failed to highlight or give much weight to deprivation which was not geographically concentrated which may be the general situation in remote rural and island areas; and the small size of datazones meant that 'small number problems' were more prevalent. This problem of small numbers meant that, when the index was published, values for a number of component indicators had to be suppressed for quite a few zones to protect against disclosure (Bramley 2005).

This critique aside, the SIMD represented a step forward in the identification of locality deprivation for the reason discussed above: the ability to accurately identify 'pockets' of deprivation. As such, it was the best method by which to identify potential research participants.

### **3.4 The Locality Context**

Before proceeding to outline the methodology of my research, the choice of locality will be justified and the geographical and socioeconomic context on which this research was based will be outlined.

My study locality was chosen for two main reasons: it was my working location; and its main town has been described as 'Scotland in microcosm' with its population being large enough to demonstrate significant differences but not too large or dispersed as to dilute the effectiveness of results (Scottish Executive 2002).

The local authority was created in 1996 as part of local government reorganisation and covers an area of 101 square miles within West Central Scotland. The area has a total population of 172,876 (based on the 2001 census) and comprises several urban conurbations which range from traditional towns with a shipbuilding and textile history to new towns built around old villages. The largest town is a university town, also rooted in the textile industry, and is the microcosm of Scotland cited above. In addition to the towns, there are a number of villages and smaller settlements. The entire area is administered by the one local authority area and in health terms was, until recently, served by one NHS board. Since the dissolution of this NHS Board in March 2006 the area now forms part of another larger NHS Board.

Based on the 2001 census, the picture *across* my study locality was, in broad terms, very similar to that of Scotland: population was falling over time but ageing; the average persons per household was 2.27; unemployment levels were at 3.7%; the percentage of households with no educational qualifications was at 33%; and there was an ethnic minority population of around 1%. However, the picture *within* the study locality showed more variation across the population and, in general, the villages and settlements outwith the main towns had a quite different occupational, educational and economic distribution. For example, in one affluent village, 36.8% of the population had a professional qualification or first degree. The figure for a town affected by industry closure was 7.1%. Similarly, the unemployment rates were 0.8% and 4.8% respectively (2001 census data).

The level of deprivation was reflected in inequalities in health. One affluent suburb ranked 6149 out of 6505 in datazone terms, had a male life expectancy of 81.3 years whilst the suburb that was the most deprived in the locality area and ranked 1 out of 6505 in datazone terms, had a male life expectancy of 64.9 years (PHIS

2004, PHIS 2004b). Numerous other health statistics confirm these inequalities persisted throughout the lifecourse: in the same two areas, for example, the breastfeeding rate was 50.2% at six weeks compared to 9.1%; the teenage pregnancy crude rate was 5.3 compared to 27.5; the estimated smoking rate was 19.4% compared to 54.6%; and the disability living allowance claimant rate was 2.4% compared to 10.8% (PHIS 2004, PHIS 2004b). The net result of these lifecourse effects was that for some illnesses, such as cancer or heart disease, the standardised rates for hospital admission were below the Scottish average in affluent areas but were up to 150% above the Scottish average in the most deprived area (PHIS 2004).

There are also data to support pregnancy related outcomes. Within my study locality the low birth weight rate was, on average, 9.8% compared to 5.8% respectively (Macdonald 2003). More specifically, the three year total low birth weight rate for the years 2000 to 2002 was 6% for the affluent suburb cited above and 16.2% for the most deprived area (PHIS 2004, PHIS 2004b). Another important rate to consider, particularly as it was the intention of this study to focus on pregnant women from both deprived and non deprived backgrounds, was the crude birth rate, and in particular whether there was much discrepancy between the areas of interest. In the study locality as a whole, the total births numbered 1659 for the fiscal year 2002/2003 (NHS Argyll & Clyde 2004). More specifically, the data indicated that between 2000 and 2002 there was an average crude birth rate of 6.2 in the most deprived area which averaged 72 births per year. In one of the more affluent areas the rate was 5.0 or 76 births per year (PHIS 2004, PHIS 2004b). In fact PHIS record the lowest rate over this time period as being that in the main university town within the study locality (4.0 or 57 births) so it appears that area of residence had no direct bearing on the crude birth rate across the area.



In summary, my study locality is an area which displayed much of the evidence of inequalities in health discussed within the literature review. It is also an area which facilitated antenatal research as there was only one maternity unit through which the majority of local women would 'book' for antenatal care and have their care coordinated. More detail of this localised antenatal care will be provided in chapter five.

This concludes the preliminary chapters outlining the rationale and context for my research thesis. The following chapters will detail the research methodology and research methods before exploring the findings and the implications for practice.

## **CHAPTER 4 RATIONALE FOR METHODOLOGY**

### **4.1 Introduction**

In chapter four the rationale underpinning the use of case study methodology is outlined. The rationale for a qualitative approach is also detailed. Specifically, the interpretive paradigm of 'constructivism' is highlighted as the most appropriate basis for 'guiding action'. From this constructivist research perspective there is discussion on why case study methodology was the most appropriate approach by which to answer the research questions. In particular the case study process of research design, data collection and analysis is reviewed, primarily using the literature of two proponents of case study research: Robert Yin (2003) and Robert Stake (2000). In chapter five the specific detail of my research methods will be provided but, in the chapter below, my research design is detailed to illustrate the reasoning behind the chosen approach.

### **4.2 Rationale for a Qualitative Approach**

In chapter two the quantitative association between socioeconomic background and certain pregnancy outcomes was illustrated. Specifically a relationship was noted in terms of initiation and frequency of access to antenatal care and in terms of pregnancy outcomes such as low birth weight (for example, Kupek et al 2002, Maher & Macfarlane 2004, Rowe et al 2008). The association was not in question: from a quantitative standpoint it could clearly be demonstrated that socioeconomic background impacts on pregnancy and birth. This negative association has been known for decades yet there has been little progression in determining appropriate strategies for the provision of antenatal care across the social spectrum.

The lack of progress was illustrated in chapter 2 section 2.7 (for example in the evidence briefings and systematic reviews by D'Souza & Garcia 2004, Bull, Mulvihill & Quigley 2003, Rowe & Garcia 2003). The problem did not appear to relate to the lack of studies but to the lack of usable information that could help turn policy into effective practice. Process data, particularly from a qualitative perspective, was lacking in current research and without qualitative information it was difficult to formulate appropriate strategies that could begin to address the health inequalities surrounding antenatal care.

Quantitative data had taken us to the point of determining socioeconomic risk within the antenatal system but it would not expand our understanding of the socioeconomic influences, if any, that underpinned progression through the antenatal process. To do this, it was necessary to understand the inherently personal influences and perspectives of the process as perceived by women themselves. This understanding could only be achieved by a research approach that expanded the focus on the situational context of antenatal care. A context focused approach is a fundamental aspect of qualitative research as defined by Denzin & Lincoln (2000) who consider that qualitative research is a 'situated activity' that locates the observer in the world of those being studied. Denzin & Lincoln go on to state that qualitative research consists of interpretive, naturalistic practices that make this world visible, and therefore understandable, to others.

It was this understanding that was lacking in published research and, as such, qualitative research was the only approach that could bridge the data gap between the professional knowledge of quantifiable risk and the professional knowledge of relevant and meaningful antenatal care. Furthermore, as the concepts of relevancy and meaning were inherently personal they would lend themselves to an approach

to data collection which, although requiring a degree of structure, would afford the opportunity to harness the perceptions of the women themselves.

It was recognised that there are tensions inherent in choosing a specific research approach. Traditionally, these tensions stemmed from a positivist perspective that critiqued qualitative research as being unable to underpin practice and policy in terms of statistical evidence and generalisation such as from experimentation, control and large sample designs (Hammersley 2008). However, both Hammersley (2008) and Denzin & Lincoln (2003) illustrate that tensions exist across (and within) various research methodologies, including positivist research. The goal, according to Hammersley (2008) is to work to reduce the differences in perspective by clarifying and adhering to the criteria for demonstrating rigour and quality. The issue of rigour and quality will be addressed later in this chapter. However, in light of the lack of process information and professional understanding about current antenatal care, the use of qualitative methodology was essential.

The rationale for a qualitative approach was further supported when considering the specific strengths of the type of data obtained from qualitative research. These strengths were outlined by Miles & Huberman (1994) in some detail and are summarised below:

- They focus on ordinary events in natural settings
- They are based on 'local groundedness' in that data are collected in close proximity to a specific situation
- The emphasis is on a specific 'case' embedded in its context
- They are rich and holistic with a strong potential for revealing complexity

- They are well suited for locating the meanings or perceptions that people place on events and processes in their lives
- They are useful as a means of explaining or illuminating quantitative data gathered from the same setting

It was clear that the strengths of qualitative data were particularly suited to research questions seeking to explore real-life events, as perceived by individual women within the potentially complex environments in which they lived. Therefore, based on the strengths outlined above, the strength of my own qualitative research design was that it recognised antenatal care was not a static phenomenon. Specifically, a qualitative approach would be flexible and particularly suited to the fact that antenatal care occurred in a number of real-life settings ranging from home based care to structured hospital appointments within a clinical health care system and environment.

Within this complexity, it was important to learn the meaning that women from different 'embedded contexts', i.e. socioeconomic backgrounds, placed on their antenatal care. A qualitative approach would allow the harnessing of perceptions of antenatal care grounded in local settings. It would also help determine if the context, or socioeconomic background, affected these perceptions. More specifically, Miles & Huberman (1994) considered qualitative research to have 'recurring features' which underpinned the approach I wished to take: the research was to be conducted through contact with typically normal life situations; my role as the researcher was to gain a 'holistic' overview of the context under study; I was making an attempt to capture data 'from the inside' i.e. from the point of view of the subjects; and a key task was to 'explicate' the way that people managed their day to day situations. Therefore, from the perspective outlined here, there was a clear rationale for a qualitatively based approach being the most appropriate method of

eliciting the necessary detail of how women perceived, and progressed through, the current antenatal programme from first contact through to the final antenatal appointments.

### **4.3 Rationale for a Constructivist Qualitative Approach**

Denzin & Lincoln (2000) consider that all researchers work within an 'interpretive framework' or paradigm which can be thought of as a "basic set of beliefs that guides action" (Guba 1990 p17). Qualitative research is generally considered to have several overarching interpretive frameworks ranging from positivism to critical discourses. Each interpretive paradigm has its own inherent assumptions that concern the specific nature of the research process, the generation of theory and the type of narration that is produced. However, the common theme running through them is the focus on the 'how' and 'what' of social reality (Gubrium & Holstein 2000).

Schwandt (2000) outlined several paradigms that can underpin qualitative inquiry which he encompassed under three main epistemological 'stances' of hermeneutics, interpretivism and social constructionism. Hermeneutic approaches call for a degree of understanding but more specifically aim to clarify the conditions in which understanding takes place (Gadamer 2004). As such, it seemed to me to be an approach that was based on researcher interpretation and not on developing understanding of a situation of whether two groups of women from extremes of socioeconomic background may perceive a difference in their antenatal care. Interpretivist approaches, according to Schwandt, share common features, one of which is for the researcher to develop understanding of the subjective meaning of action. This would be an appropriate epistemological stance in more expansive elements of antenatal research, perhaps as a follow up research that would build

on any initial findings. However, at this stage, my research questions were designed to determine the existence and nature of potential differences between cases without calling for a level of interpretation. As such, the most appropriate paradigm for my thesis was that of constructivism.

The use of the constructivist paradigm was based on the perception that constructivism was an approach to research inquiry that saw people as being constructors of knowledge through the development of concepts, models and schemes “set against a backdrop of shared understanding, practices, languages and so forth” (Schwandt 2000 p197). Through the development of this knowledge, the world, *as it appeared to the subjects*, could be described and explained. Constructivism fitted with the context of my research being shared within case groups in respect of the situational aspects of antenatal care and socioeconomic background but inherently personal in terms of how the provision and nature of that care shaped or constructed the experience of each woman. Furthermore, the real and practical foundation of these experiences underpinned the strength of constructivism as highlighted by Hammersley (2008). He considered that the strength of constructionist research was its ability to focus not only on how people described their experiences (in this case antenatal care) but on how they related to these experiences within their social context. In other words, constructivist research was based on accounts of ‘language in action’ (Hammersley 2008).

Therefore, my thesis was underpinned by a qualitative, constructivist approach that sought to describe the social context of each individual and use their social context as a basis from which each subject was able to describe their experiences and perceptions of antenatal care.

#### **4.4 Rationale for Case Study Method**

The research design is the logic that links the theoretical paradigm to the specific research strategy and ultimately to the method of collecting and analysing data (Yin 2003). In the first place, the design must relate to the study context and the research questions being asked (Yin 2003). The research questions can often point to one specific strategy as being more appropriate than others and, in my study, one constructivist approach particularly suited to the research questions and the study context was that of case study inquiry.

There are a number of reasons for this decision. Yin (2003) considers three conditions should underpin the choice of research method. These conditions are: form of research question; researcher need to control behavioural events; and the focus on contemporary events. Research questions can take many forms but a key feature of mine was the 'how' aspect particularly in relation to the potentially differing perceptions of women from different socioeconomic backgrounds. It would be this 'how' aspect that would lead to the development of new knowledge. As such, it was important to utilise a research strategy suited to answering the 'how' type of question. There were a number of potential strategies that could be adopted here, case study being one. The second condition in determining a research strategy was the researcher requirement to control behaviour (Yin 2003). This was not a feature of my approach as the desire was to establish perceptions and experiences without influence. Yin considered the case study to be ideally suited to this type of research as it relies on a variety of evidence such as direct observation, documentation and interviews.

The third condition that should inform the research method, as outlined by Yin (2003), was the strength of focus on contemporary events. To this point, a number



of approaches, including case study, may have suited each of Yin's first two conditions. However it was the fit with this third condition that was the deciding factor in choosing a case study strategy. Essentially, the case study approach could investigate "a contemporary phenomenon within its real life context especially when the boundaries between the phenomenon and context are not clearly evident" (Yin 2003 p13). In my thesis this was important because, whilst it was clear that at a population level socioeconomic deprivation (the context) did impact on pregnancy and antenatal care (the phenomenon), the previous chapters reinforced the point that health professionals were still unclear how best to translate this knowledge to the provision of effective antenatal care. However, by studying the socioeconomic impact at the level of the individual pregnant woman - or case - then we could obtain insight into the perceptions that operated at this level. This would allow the development, if appropriate, of a theoretical framework based on the relationship between socioeconomic background and antenatal care. It is this theoretical framework that would have the potential to inform strategies for future antenatal research and provision.

Furthermore, the literature highlighted some key features of case study research which confirmed that it was an appropriate strategy in which to underpin the study of individual, context based perceptions. For instance Robson (2002) highlights the following aspects about case studies:

- They allow access to variables concerning individual, naturally occurring entities
- They focus on current events and concerns
- Their strength is in enhancing understanding within specific contexts

The aspects highlighted above matched the research approach that was emerging in relation to my thesis. But there were other key features of case study research that also informed my thinking. For example, Jones & Lyons (2004) considered that a case study is able to facilitate an in depth investigation that has “the potential to reveal multiple dimensions of any one given case” (p73). They also considered that case studies provide clearer understanding of the nature and extent of a problem. Furthermore, Yin (2003) maintained that the case study method allows researchers to retain holistic and meaningful characteristics of real life events.

#### **4.5 Case Study Design**

Both Yin (2003) and Stake (2000) outline possible case study designs. However, they take different approaches. Stake (2000) considers there are three different strategies to case study research: *intrinsic*, which is used to enhance understanding of a particular case without the need to consider other cases; *instrumental*, in which a case is of secondary interest but is used to provide insight into a particular issue; and *collective*, in which a researcher would study a number of cases in order to investigate a phenomenon or population. Stake (2000) considers the collective approach as potentially leading to better understanding or theory development in relation to a larger population of cases.

Yin (2003) outlines four basic case study designs based around two factors: whether the design encompasses a single case study or multiple case studies and whether the design is ‘holistic’ or ‘embedded’. Yin maintains a ‘holistic’ case study is applicable when there is only a single unit of analysis or a single aspect of a programme being studied. A holistic design is considered advantageous if only one unit of analysis can be identified at the outset but is limited if unexpected aspects emerge during the study. An ‘embedded’ design’ is where, within the case analysis,

attention is paid to sub-units of analysis and has the advantage of increasing sensitivity to the data.

Yin's rationale for using one case (a single case study) includes a case representing a 'critical case' for testing a specific theory; or a case representing an extreme or unique case; or conversely, a case representing a typical case. However, Yin considers that multiple case studies, whilst more time consuming, have the potential to produce more robust and compelling evidence. Importantly, though, the logic underpinning the use of cases alters when undertaking a multiple case study. Yin advocates that in multiple case studies, each case is used because it is similar or contrasting to other cases. This will be discussed in more detail in section 4.6 below. Furthermore, he outlines a specific approach to multiple case studies called the 'two-tailed' approach whereby cases are selected to form two research 'tails' on the basis of their extremity in relation to a theoretical concept – such as their socioeconomic context.

Thus, based on the work of two proponents in the field, there are a range of potential research designs within a case study framework. In the following subsection, the specific approach taken in my study is detailed. This approach is based largely on the work by Yin (2003) as his literature expands on embedded analysis which facilitates exploration of data subsets.

#### **4.5.1 Case Study Design within this Thesis**

The tenet of my thesis was to determine the perceptions and expectations of women in relation to their antenatal care and also determine if these perceptions and expectations differed across socioeconomic backgrounds. As stated above, I was seeking to explore individual cases within their own real life context and, where

possible, gain a depth to that exploration that would allow me to consider each case as a discreet unit of analysis.

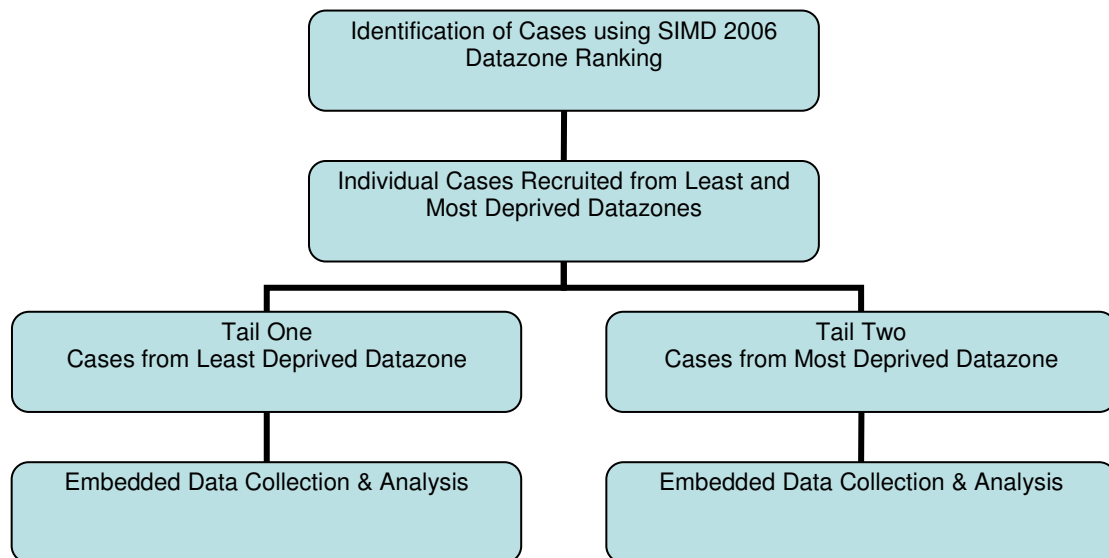
Miles & Huberman (1994) describe this discreet unit of analysis' as 'the heart of the study', a view also held by Stake (2000) who considered that case study designs are strongly associated with the 'uniqueness' and 'wholeness' of the individual – with a single case being very important. As the research questions called for comparative analysis, then the plan was to collect data on a number of 'embedded' contextual factors using multiple cases. These cases would be obtained from the extremes of socioeconomic deprivation in order to facilitate the comparison.

In the first instance, this necessitated a design that allowed for the identification of women, or cases, from different socioeconomic backgrounds. Each individual case would have the potential to provide a unit of analysis on which to base individual case findings. However, by aggregating cases into one of two extreme socioeconomic case groups (or tails), each individual case would also have the potential to increase the sensitivity of the data through embedded 'sub-units' of analysis within their respective case group. Therefore, building on the qualitative, constructivist approach outlined earlier in this chapter, the specific case study design in my thesis was a collective (or multiple), embedded, two-tailed case study.

Specifically, my design was to identify and recruit pregnant women using the Scottish Index of Multiple Deprivation (the detailed process for this is outlined in chapter five). The SIMD would allow for accurate identification and allocation of each case to their particular case tail. Thus cases were selected based on the theoretical concept and unit of analysis which would facilitate answering the research questions - their socioeconomic context (Yin 2003).

The design was collective as the intention was to recruit multiple cases to harness a depth of data that had the potential to result in more robust and compelling evidence (Yin 2003). Each woman would form an individual case within her respective tail and provide a basis for embedded data collection and analysis. Each case tail would represent extremes of deprivation to facilitate the detection of comparative socioeconomic differences.

The first stage of the research design is displayed in figure 3.



**Figure 3 Research Design Part 1**

The following sections will provide more detail on the specific research approach adopted in my thesis and develop figure 3 into a full diagrammatic summary of the research design in section 4.10 below.

#### **4.6 Case Definition**

In case study inquiry it is important to have a clearly specified definition of what constitutes a case and why it has been chosen (Stake 2000). The specific approach to case definition in my study will be detailed in chapter five but Stake (2000) provides detail around what are, and what are not, likely to be suitable parameters for being considered a case. The overarching consideration is whether a situation or person can be seen as 'specific'. In particular, according to Stake, there needs to be a 'functioning specific' where the case is purposive, with working parts and a sense of 'self'. Stake considers a case as part of an integrated system with our interest as researchers being bounded by the specific features of the case – some of which are in the 'system', some of which are boundaries of the case and some of which are external to the case.

In my study, each case was part of an 'integrated system' which, as Stake outlined, had both internal (National Health Service) and external (case centred) boundaries. In particular, each case could be seen as processing through a largely fixed NHS system but with the potential to be influenced by aspects of her social context which were external in terms of her socioeconomic background. It was this external context that suited a constructivist underpinning to my research as each case (within their own case group) was potentially set within the socioeconomic backdrop of shared understanding and practices (Schwandt 2000). However, it was the opportunity to consider each woman as an individual within a complex system that was ideally suited to the case study approach.

#### **4.7 Sampling Strategy in Case Studies**

A multiple two-tailed case study design was adopted. Therefore, multiple cases needed to be identified and recruited from within each case study tail. The detail of

this identification and recruitment will be explored in chapter five but it is important to outline the reasoning behind the case selection process. In the previous sections, Yin's (2003) concept of 'logic' in determining the rationale for case selection has been discussed. In multiple case designs the logic of case selection is that each specific case is selected because it is similar or contrasting to other cases. Yin considers this as 'replication strategy' and he outlines two distinct types: literal replication and theoretical replication. Literal replication refers to the predicted similarity between cases; theoretical replication refers to the predicted contrast between cases albeit for predicted reasons (Yin 2003).

Similarly, Miles and Huberman (1994) suggest that multiple case sampling, with cases 'nested in context', helps 'ground' single cases by determining how, where and sometimes why cases act as they do. This replication strategy is, they suggest, a method of strengthening the precision, validity and stability of findings with generalisability based on one case to the next as opposed to universal.

Therefore, in my study, the aim at the outset was to select specific cases who met the case definition criteria and were 'nested in context' i.e. from the same socioeconomic deprivation backgrounds. These cases would form the tails of the study and afford the opportunity to consider literal replication from within each research tail and possibly theoretical replication between the two tails. Establishing this literal and theoretical replication within the perceptions and expectations of each case would add validity and stability to the findings of the study in that literal replication from each tail would suggest that cases in that tail were similar in certain respects and theoretical replication would suggest that cases across the tails differed in certain respects.

However, because of the need to 'choose' specific context based cases, Stake considers a formal approach to sampling is required that allows selection of cases that 'represent' the larger population. As he states: "the phenomenon of interest observable in the case represents the phenomenon writ large" (p446). Stake further contends that even in large collective case studies the sample size would generally be too small to warrant a random sampling approach. As such the aim is to select a purposive sample from which we can learn the most and that best represents the specific conceptual aspects required to answer the research questions. Therefore, the sampling strategy in my study was purposive in that only women from specific and extreme social backgrounds were required. From this group of women, all women who met the case definition criteria were eligible for selection.

It was recognised that this sampling strategy was not designed to obtain data from 'the middle ground' i.e. those who represented neither affluent nor economically deprived areas. The desire to identify if socioeconomic factors were influential in the perceptions of antenatal women focused attention towards extremes in the first instance. These extremes were felt to be the most likely sample groups to identify socioeconomic differences. If differences were noted then it was intended that future research may focus on less extreme groups.

#### **4.7.1 Sample Size in Case Studies**

Underpinning case selection was the likelihood of literal or theoretical replications. However, the number of cases to be selected at the outset was an inexact science. For example, Yin (2003) states that the number of cases for literal replication is based on discretion but that greater certainty of results arises from higher numbers of cases. He suggests aiming for five or six replications from within each subgroup. For theoretical replication, Yin (2003) considers it is slightly more complex,



depending on the context being studied. My thought here was to aim for literal replication (similarity between cases) within each tail and monitor the data analysis to determine if this approach also ensured theoretical replication (contrast between cases) across both tails. As such, at the outset the aim was to secure five or six cases in each case group that would potentially display literal replication. However, within each case group there would likely be further cases that would not display literal replication or who would drop out of the research. Therefore, initial case group numbers had to be sufficiently high to counteract this. My decision was to aim for 15 cases within each tail at the start of the study.

#### **4.8 Data Collection in Case Studies (Triangulation)**

In case study research, the goal is to “seek both what is common and what is particular about the case” (Stake 2000 p438). Data collection is designed to elicit these commonalities and differences within case attributes including those attributes that encompass the nature of the case, their background and their physical setting. In particular, the case study approach allows the researcher to collect data across attributes (or variables) and cases. Miles and Huberman (1994) consider this a desirable strategy that can aid understanding of the local dynamics within cases and provide the opportunity to see patterning of variables across cases. This patterning of variables is a key factor in the design of case studies and is represented by the desire for literal or theoretical replications as discussed above.

Yin (2003) advocates three principles of data collection in case study research: use multiple sources of evidence; create a case study database; and maintain a chain of evidence. The first principle underpins the triangulation of the research in that it affords the opportunity for ‘converging lines of inquiry’ using several sources of

evidence. Yin (2003) considers potential sources of evidence to include documentation, observation and the use of interviews. In my study, the approach to data collection was 'embedded' as discussed in section 4.5. This demanded the collection of data based on different sources of evidence and on a number of demographic variables from each case. In each case, and in accordance with Yin's approach to triangulation, three methods of data collection would be utilised.

A key requirement of my research was to determine the antenatal perceptions and expectations of each case and, therefore, qualitative data had to be collected from each case. Stake (2000) considers interviews to be the "main road to multiple realities" (p64). Yin (2003) expands on this by viewing the interview as an essential source of case study information as they are about 'human affairs' where respondents can be asked about facts, opinions and their own insight into certain situations. This ability to explore the social reality is noted by Hammersley (2008). He states that interviews offer the opportunity to harness "perspectives and actions without prejudging the parameters of these from the outset" (p24). He also considers the aim as being to understand respondents 'in their own terms' and for interviewers to treat what is said as rational to the social context in which it is derived. This latter point by Hammersley was important in illustrating the distinct advantage of interviews: as they were situated within the social context of each respondent, they enhanced the likelihood that relevant, personally meaningful data could be collected. Interview data was thus the primary method of data collection.

The best approach to the interview was to adopt a semi-structured schedule. By this method, questions would be designed to collect a priori factual data whilst maintaining a flexibility that could ground the case in its specific context. The questions would also be adaptable to the case variabilities of this context. The semi-structured approach is in keeping with the view of Miles and Huberman

(1994) who consider that, particularly in multiple case studies, a degree of 'front end preparation' – i.e. more focused or structured instrumentation – is required in order to provide a level of standardisation for findings to be laid side by side at the analysis stage. Semi-structured interviews provide the desired level of standardisation in that they bridge the gap between structured interviews, which aim to obtain precise codifiable data designed to fit within preset categories, and unstructured interviews where no a priori categorisation is imposed that may limit the information obtained (Fontana & Frey 2000).

Robson (1993) describes semi-structured interviewers as 'having a shopping list' of topics they need answers to but also having tactical freedom in the wording and sequencing of questions and to the time devoted to specific aspects of the interview. As such, they afford a degree of flexibility that recognises the natural context in which the study occurs. Importantly, in case study approaches, semi-structured interviews also have the potential to enhance internal validity through the ability to compare the level of response across cases; enhance theoretical generalisability through the ability to determine data replication; and enhance manageability through being able to standardise some of the approach (Miles & Huberman 1994).

In my study design, it was important to develop an approach that would allow me to harness case expectations of antenatal care. To limit the potential for memory recall problems or for problems with labour and delivery to bias any antenatal perceptions, the data collection was best harnessed after some aspects of care had been completed but before the full completion of care. It was this combination that would allow me to answer the research questions. As such, the best strategy was to interview each case longitudinally: once just after recruitment where data could be obtained on their early perceptions and their expectations of what would

happen for the remainder of care; and once in the final trimester when they would have completed the antenatal education programme and data could be obtained on their overall use and perceptions of their antenatal experience.

The second method of data collection stemmed from the recorded Scottish Government SIMD data and ranking which would confirm each case's socioeconomic deprivation status based on area of residence. The third method of data collection was researcher observation. This related to my own observations of these areas of residence as qualitative data was collected. These aspects will be expanded upon in chapter five. The triangulation of each of the three methods of data collection – interview, documentation and observation - would strengthen the evidence for the case selection matching the defined criteria. Thus it would confirm each case group as being an appropriate sample on which to collect qualitative data to measure literal and theoretical replication.

Yin's second principle of data collection is 'creating a case study database'. The belief is that there should be a formal, presentable database that allows other researchers and readers to review the evidence underpinning the research findings. Again a variety of research material can contribute to this database including case study notes (for example based on observation and interview) and documentation that has been used to inform the case study process (for example to inform selection). Yin (2003) advocates that the formation of this database markedly increases the reliability of the case study. As such, the intention was to develop a structured database to underpin my study. The creation of the database will be explored in more detail in chapter five.

The third principle of data collection, which also increases reliability, is to 'maintain a chain of evidence'. Here the goal is to ensure that other researchers or readers

can follow the “derivation of any evidence, ranging from initial research questions to ultimate case study conclusions” (Yin 2003 p105). Again, the chain of evidence will be explored in more detail in chapter five.

#### **4.9 Data Analysis in Case Studies**

In constructivist research, analysis is considered in terms of pattern theories (Denzin & Lincoln 2000). This patterning, or coding, of data is particularly important as it has four specific functions: it reduces a large amount of data into smaller analytical units; it focuses later field work; it elaborates a cognitive map to aid understanding; and lays the groundwork for cross case analysis by surfacing common themes (Miles & Huberman 1994). The use of software programmes to assist in this coding and categorising of data is particularly beneficial when narratives are verbatim transcripts of interviews and the research is attempting to derive meaning from words and patterns contained within these texts (Yin 2003). However, in addition to the use of software, a clear analytical strategy is required that takes the data from preliminary coding to one that facilitates the development and articulation of reasoned and compelling conclusions (Yin 2003).

Miles & Huberman (1994) and Yin (2003) describe similar analytical strategies for case study data. They outline an approach of a ‘mixed strategy’ combining case orientated and variable orientated approaches. Preliminary analysis allows for cases to be ordered and analysed according to the specific contextual factors that underpin their initial selection into the study - such as socioeconomic background. From this initial order, specific ‘within case’ and ‘across case’ variables can be analysed. Yin (2003) considers the prioritising of data into categories that relate to the initial research questions as the preferred analytical approach in case studies; the strategy being to follow the theoretical propositions that led to the study and

which underpin the research questions – especially if these questions are of a how and why nature.

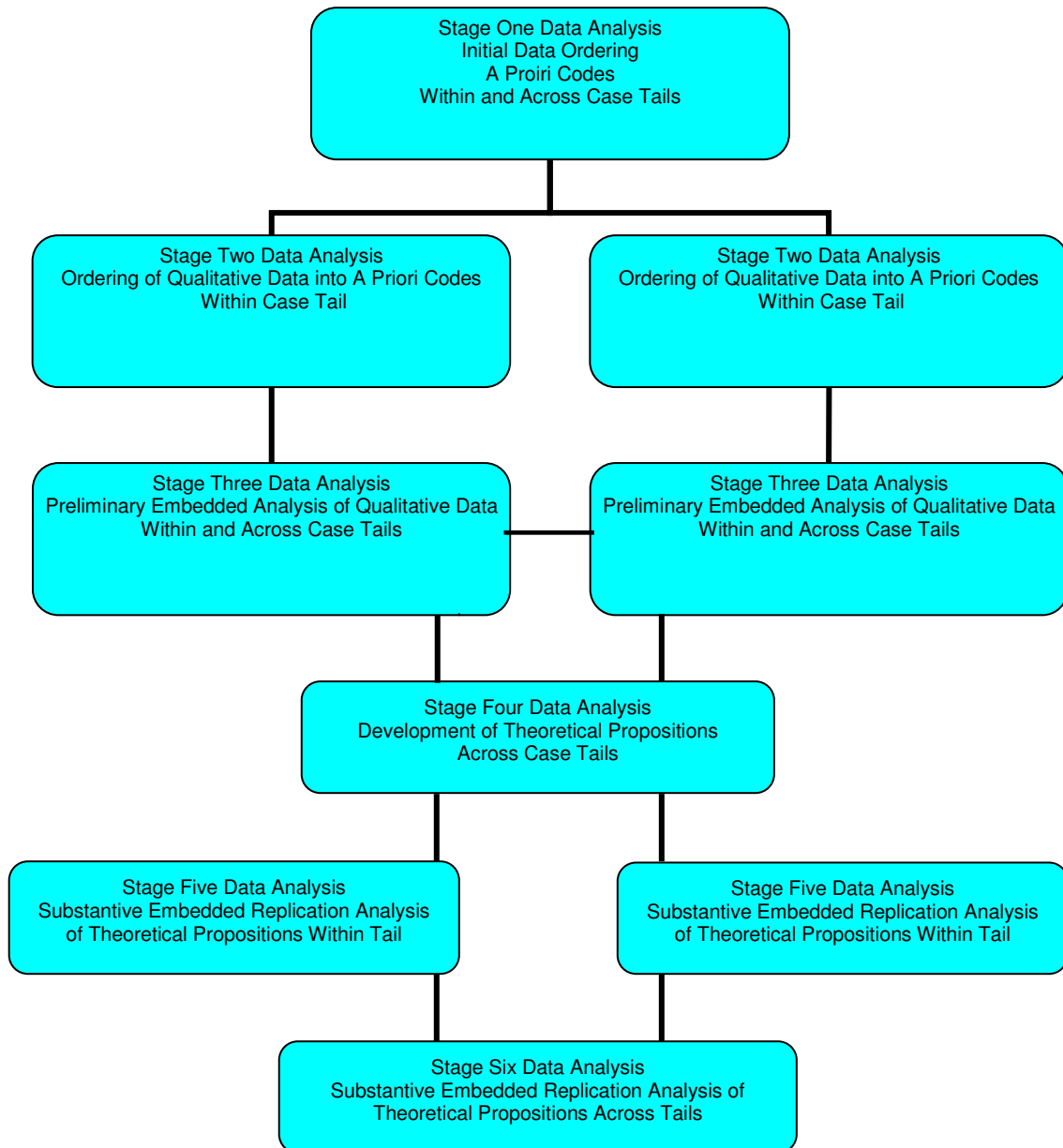
Specifically, Yin outlines an analytical technique that is suited to the development of propositions: 'explanation building'. Using the explanation building technique, the analysis builds from an initial theoretical position. Importantly, though, the theoretical position does not need to have been fully stipulated at the beginning of the study. The propositions can develop through familiarisation with the data and as the analysis becomes more substantive. Miles and Huberman also consider this 'inductive approach to propositions' by outlining several case study examples where the researchers formalised initial data analysis and thinking into coherent sets of explanations or themes and then sifted the evidence in relation to these themes. Importantly, in case study research, the analytic coding process described here needs to be considered in terms of literal and theoretical replications within and across case groups.

In my study, the framework for analysis was a six stage process:

1. Preliminary analysis and comparison of a priori categorical data
2. Ordering of qualitative data into a priori codes
3. Preliminary embedded analysis of qualitative data
4. Development of theoretical propositions
5. Substantive embedded replication analysis using theoretical propositions within tail
6. Substantive embedded replication analysis using theoretical propositions across tails

The analysis framework is shown graphically in figure 4:

**Figure 4: Analytical Framework**



Whilst the detailed process at each stage will be outlined in chapter five, the above framework ensured that the analytical process adhered to the original principles of data collection outlined above. In particular it can be seen that there was an

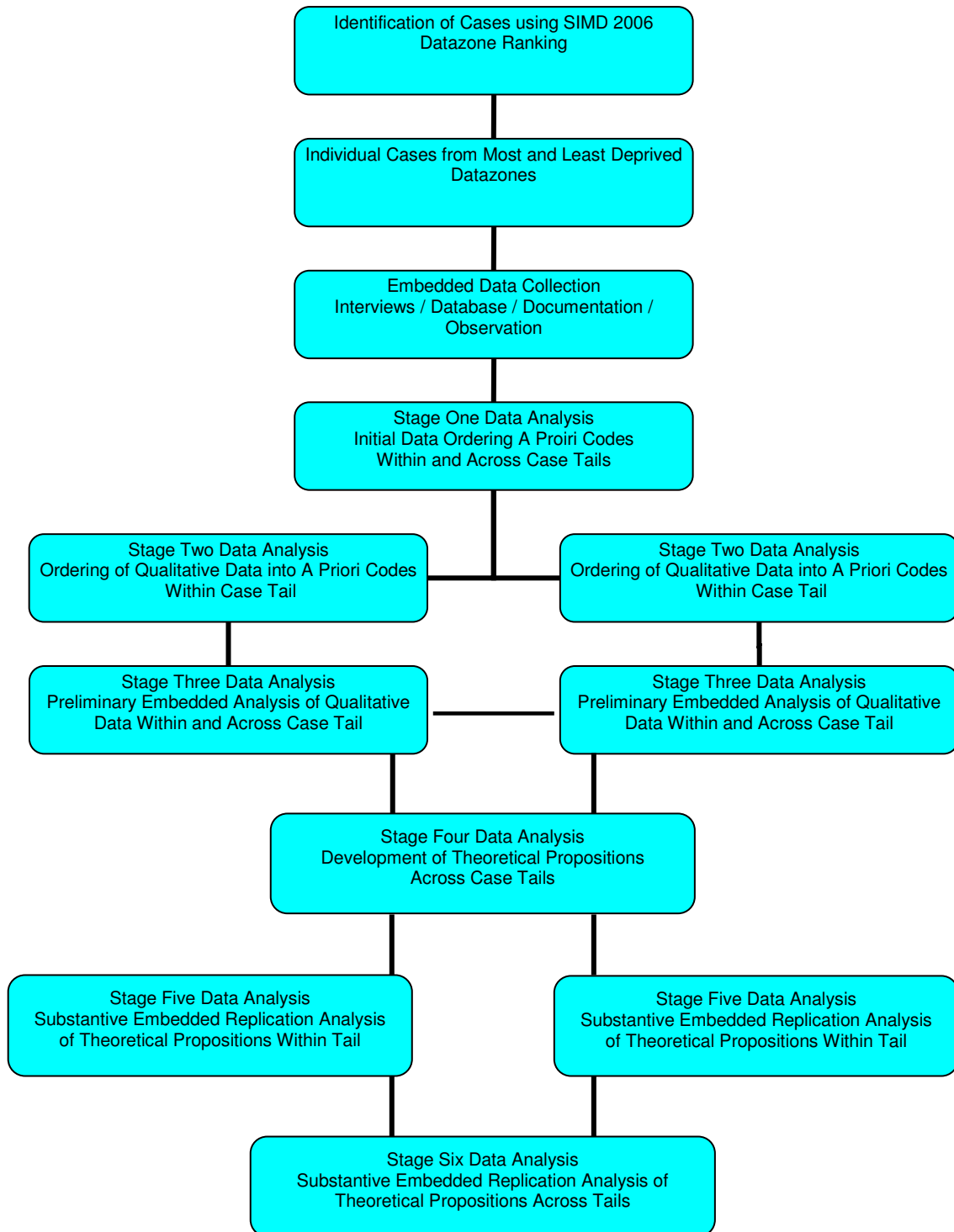
observable process that flowed through the study from the setting of a priori questions in the semi structured interviews to the derivation of emerging theoretical propositions that underpinned the substantive replication analysis.

#### **4.10 Summary of Research Design**

In the preceding sections the rationale for my chosen research approach and subsequent research design have been outlined. The real-life, context based study demanded the explorative opportunities afforded by a qualitative, constructivist approach. More specifically, the wish to explore specific phenomena of antenatal provision and the potential socioeconomic influence on this provision was best suited to case study inquiry where each case could be individually explored. Using the analytical framework, the design progressed through a preliminary analysis to a level of analysis that considered each case in terms of uniqueness or replication to cases from similar backgrounds and then in terms of replication or difference to cases from extreme backgrounds. This substantive level of analysis ultimately led to the research findings discussed in chapter 7. The overall research design from sampling, through data collection to data analysis is summarised diagrammatically in figure 5:



**Figure 5 Full Research Design**



#### **4.11 Research Rigour and Generalisability in Case Studies**

In constructivist, qualitative research, quality measures such as credibility, transferability, dependability and confirmability (Denzin & Lincoln 2000) usually replace the more positivist based quality measures such as validity, reliability and generalisability. However, in this chapter reference has been made to the concepts of validity, reliability and generalisability. This is because, in case study methodology, Yin (2003) advocates the use of the positivist measures of research quality and, in particular, construct validity, internal validity (although only for causal studies), external validity and reliability. His reasoning for this is that case study research is grounded in the social sciences and, more specifically, is one form of social research on a spectrum that includes experiments, surveys and historical research. Yin maintains that there are different criteria for using each of these research strategies but that each strategy is measured in terms of quality in exactly the same way. Therefore, in my study, there are three aspects of quality that need to be explored: construct validity; external validity (generalisability) and reliability.

Construct validity is concerned with “establishing the correct operational measures for the concepts being studied” (Yin 2003 p34). Yin considers construct validity as being underpinned by triangulation of data collection in that multiple converging sources of evidence are an indication of appropriate operational measures. Furthermore, construct validity is further strengthened if, in the process from data collection through analysis to conclusion, the chain of evidence is maintained and visible. In my study, the triangulation of data, as discussed in section 4.8, was underpinned by the use of multiple sources of evidence ranging from published documentation on deprivation, researcher observation of residential areas and qualitative data obtained via interviews.

External validity refers to the level at which “a study’s findings are generalisable beyond the immediate case study” (Yin 2003 p37). Before considering how generalisability applied to my study, the issue of generalisability within qualitative case study methodology is discussed more generally. Yin (2003) considers case study to be a positivist approach and, therefore, subject to positivist measures of quality such as generalisation. He is not alone in this view as Gomm, Hammersley & Foster (2000), Schofield (2000) and Stake (2000) all consider case study methodology to be a suitable basis for generalisation. Their approach to this differs at times though. For example, Stake (2000) argues that case study generalisation is less aligned to scientific analysis and more aligned to an intuitive approach based on personal and vicarious experience. He considers this to be ‘naturalistic generalisation’ which is shaped by researchers using explicit situational comparisons and ‘tacit knowledge’ of these same situations in order to form empirical generalisation.

Yin (2003) acknowledges that the case study is not designed to ‘generalise’ in statistical terms. Specifically, Yin argues that case studies are designed to be generalisable to theoretical propositions and not populations per se. They are, therefore, designed for analytical or ‘theoretical generalisation’ with the aim being to develop and generate theories rather than provide conclusions through generalisation (Yin 2003). Because of this, Yin (2003) maintains that small number samples should not be an issue in case study research as data replication in as little as two cases may be a basis for analytical generalisation.

However, Gomm, Hammersley & Foster (2000) argue that case studies should use the same process of generalisation as experimental and survey researchers which they refer to as theoretical inference and empirical generalisation. Theoretical inference involves reaching conclusions about what happens with a given degree

of probability. Empirical generalisation involves drawing inferences about a larger population of cases from a study sample from that population. Gomm, Hammersley & Foster argue that empirical generalisation does not require statistical techniques though there will always be a high level of error. What is important is to “use what is actually known about the cases and the wider population to get a fix on where the case fits” (p105).

The concept of ‘where the case fits’ is inherent in the ‘generalisability’ or validity debate outlined by Hammersley (2008). Hammersley details the difficulties and challenges qualitative researchers can have in terms of utilising robust criteria that can demonstrate research quality. Hammersley’s view is not that researchers should argue about the specific criteria but instead should focus on the practical application of the research and, in particular, the “validity (that is the likely truth) and relevance of the research to some general human concern” (p161). Hammersley puts forward a series of questions that he considers appropriate for assessing validity:

- Are the main claims plausible or credible enough to be accepted at face value?
- If not, is evidence provided?
- If so, is the evidence sufficient, both in terms of strongly implying the validity of the main knowledge claim and in being sufficiently plausible or credible to be accepted?

My own perception of generalisability, as it related to my case study methodology, was aligned to the views of Hammersley. The approach was to maximise the evidence available to support the ensuing conclusions. There was a recognition that my research questions did not call for statistical generalisability and instead

leaned more towards the development of theory, or analytical generalisation, (Yin 2003) that could inform future research and practice. However, if my data and evidence were credible and facilitated a 'fix' on where the case fitted with the wider population then the potential for generalising would be enhanced.

Underpinning my approach was the recognition that whilst single cases were unlikely to afford the opportunity for generalising, multiple cases offered the opportunity to determine replication or match between cases and this afforded a greater opportunity for generalising at least to a level of multiple cases within the same study. So too did the approach of 'studying the typical' in terms of individual cases and locations (Schofield 2000). In my study this applied to both the study site (being typical of Scotland in general) and the individual cases as being considered typical of their socioeconomic grouping. Furthermore, as the research design was 'two-tailed' with cases chosen from theoretical extremes, then this replication could be considered in terms of generalisability to each extreme.

Reliability refers to the extent to which "the operations of a study – such as the data collection procedures – can be repeated with the same results" (Yin 2003 p34). Yin states that, in case study research, reliability is strengthened through the development of a clear protocol and the development of an accurate, bias free, database. Miles and Huberman (1994) also point to other factors which enhance reliability in qualitative case study approaches. These factors include: researcher familiarity with the phenomenon and setting under study and strong conceptual interests. In my study, the opportunity for reliability was enhanced by being familiar with both the concept of socioeconomic deprivation, particularly within the research area, and the process of antenatal care. Furthermore, reliability was maintained throughout the research by keeping accurate documentation, computer databases and a record of the analytical process.

#### **4.12 Methodological Limitations**

Case study methodology requires the exploration of specific cases with the strategy being to learn all that is possible from each case in terms of the research questions. This can be a time consuming practice and, as such, case studies are generally limited in terms of size and scope. Furthermore, the cases are selected purposively based on their 'fit' with the case parameters as set in the research design. However, this fit with the case parameters forms only one aspect of what constitutes each 'case' and therefore unexpected or atypical case presentations may emerge. To a degree these factors may limit the ability for theoretical generalisation if they reduce the homogeneity of each case group.

There are also specific debates that are inherent in case study approaches. For example, Jones & Lyons (2004) who consider case study a comprehensive research strategy, also highlight the confusion about whether it is a research design or a research method. They point out that even Yin (2003), one of the most considered proponents, uses the term 'case study' interchangeably between design and method.

There is further confusion about where case study 'fits' within the research field. For example, Stake (2000) considers that the case study approach is not a qualitative methodology per se but more a 'choice of what is to be studied'. By this he maintains that the approach to the study and data collection is not necessarily defined by a qualitative perspective but by the case itself. Similarly, Jones & Lyons state that a "case study as a design should not be associated with a particular qualitative or quantitative philosophy as this may result in it being judged against the criteria of the paradigm" (p72). However Anthony & Jack (2009) consider that

case study is particularly suited to the constructivist approach to inquiry as it is an ideal method by which to research complex issues in the context of real life.

In conclusion, it is apparent that case studies do have their strengths and limitations. The limitations relate in the main to the 'fit' of case studies within the research arena and also to the issues of generalisability. With respect to the first of these points, a sound rationale has been provided for choosing a qualitative, constructivist approach. Furthermore, the case study design outlined here was selected as the best method by which to answer the research questions. As such, there can be a degree of confidence that the issue of research 'fit' has been addressed. With respect to generalisability, my case study, although small in qualitative terms, fitted with the 5-6 replications that Yin (2003) considered appropriate in case study methodology. Furthermore, whilst the research questions did not call for generalisability in the widest sense, the two tailed multiple design would ensure that the potential for theoretical generalisability was at least maximised.

In the following chapter the research design will be expanded and detail will be provided on the specific methods undertaken in my case study research.

## **CHAPTER 5 RESEARCH METHODS**

### **5.1 Introduction**

In the previous chapter the rationale for choosing a qualitative, constructivist approach and case study methodology was explained. In chapter five, detail will be provided as to how that design translated into practice. The research methods will be discussed as will an outline of the clinical context in which the research took place. The process of gaining ethical approval will also be outlined. Detail will also be provided on the processes of case definition, selection, recruitment and consent and the processes of data collection and analysis. There will be a demonstration of adherence to the three principles of case study data collection outlined in section 4.8: multiple sources of evidence; creation of a case study database; and maintaining a chain of evidence.

### **5.2 Ethics & Access to Participants**

Ethical approval was sought and granted from the Department of Nursing at the University of Stirling and the Local NHS Research Ethics Committee. The process for this is detailed below.

#### **5.2.1 University Ethics**

The research protocol and Central Office for Research Ethics Committees (COREC) form were submitted to the Ethics Committee of the Department of Nursing at Stirling University. This was on 25<sup>th</sup> November 2005 and ethical approval was given on 24<sup>th</sup> January 2006. Annual reports were submitted to the university detailing changes and progress.



### **5.2.2 NHS Ethics**

Ethical approval was initially sought from Argyll & Clyde NHS Research Ethics Committee. Latterly (following a health board merger) this approval was from South Glasgow & Clyde NHS Research Ethics Committee, part of NHS Greater Glasgow & Clyde.

The COREC form (LREC 06/S0101/11) was reviewed at an ethics committee hearing on 1<sup>st</sup> February 2006 along with the following:

- Participant Invitation Letter
- Participant Information Sheet
- Participant Response Form
- Participant Consent Form
- General Practitioner Notification Letter

Following attendance at the hearing on 1<sup>st</sup> February amendments were required to some of the consent paperwork in terms of address spacing and font size. Ethical approval was granted on 19<sup>th</sup> April 2006 for the period up to 31<sup>st</sup> March 2007. However, whilst waiting for initial ethical approval a Substantial Amendment Form (SAF) had to be submitted due to a change of job within the NHS to one within higher education. This affected research access to the clinical sites and necessitated a 'letter of access' from NHS Argyll & Clyde. The protocol remained unchanged though the researcher contact details on all paperwork had to be altered. The SAF, letter of access and altered paperwork were submitted to the ethics committee on 27<sup>th</sup> March 2006 along with a request to extend the study period to 30<sup>th</sup> April 2007. The SAF was approved on 26<sup>th</sup> April 2006.

Following this approval in April 2006, four further substantial amendment requests were submitted. Primarily, these requests reflected recruitment difficulties and these will be discussed below. Following the final research extension, the recruitment period ran until 31<sup>st</sup> December 2008.

### **5.2.3 NHS Research & Development Approval**

At each of the above stages of ethical approval a copy of all documentation was also submitted to Argyll & Clyde (then Greater Glasgow & Clyde) Research & Development (R&D) Department. Full R&D approval was in operation throughout the study period which included access to the relevant clinical sites. Annual reports were submitted to the required R&D department as part of the approval requirements.

Whilst the formal Research & Development approval process confirmed access to the clinical site, it was also important to ensure that local managers were aware of, and supportive of, the research study. I wrote to the Director of Nursing and the Lead Midwife for NHS Argyll & Clyde. Both were approving of this research but also advised me to secure the approval of the Lead Obstetrician. This approval was confirmed on 7<sup>th</sup> November 2005. I also met with the Lead Midwife for the Antenatal Service on a number of occasions, particularly prior to the initial COREC submission and prior to recruitment protocol changes, to ensure that planned recruitment processes were appropriate to the clinical environment.

### **5.2.4 Specific Ethical Considerations**

In any health service based research, the issue of informed consent is of fundamental importance. The Royal College of Nursing (RCN 2005) detail informed

consent as being “an ongoing agreement by a person to receive treatment, undergo procedures or participate in research, after risks, benefits and alternatives have been adequately explained to them” (p3). The RCN outline a number of factors which must be taken into account when gaining informed consent. Specifically they detail the importance of providing a full explanation to the participant that explores (among other things) the purpose of the research, the benefits and risks of participation and their role if they agree to participate in the research.

The required information was detailed in a participant invitation letter (appendix 1) and a participant information sheet (appendix 2). In particular, the participant information sheet detailed a full explanation of the research and the implications for participation. The process of data collection was detailed as was the process for anonymising all data and of maintaining confidentiality at all times. For those that agreed to participate, the planned process of obtaining informed consent required the completion of a participant response form (appendix 3) followed by the completion of a consent form (appendix 4). This planned process was altered during the research period and is discussed in more detail in section 5.5.

Due to the potentially sensitive nature of pregnancy there were some additional aspects that required consideration as part of the ethical approval process. The main issue was the need to interview women during pregnancy. Pregnancy has the potential to be an emotional time and sensitivity was required throughout the interview process. The issue of women disclosing relevant health or personal information was discussed with sensitivity as part of the consenting process. The consent form contained explicit permission for the researcher to notify the relevant General Practitioner (GP) that each participant was participating in this antenatal research (appendix 5). If, following each interview, important pregnancy related

health information was disclosed then the consent form also contained permission for the researcher to contact the General Practitioner or midwifery team if it was felt this was required. As the researcher, I was an experienced registered nurse and public health nurse and considered I was capable of determining if further referral or contact was necessary. However, throughout the interviews this situation never arose.

A further potential problem concerned the fact that some pregnancies may not have continued between the first interview at the end of the first trimester and the second interview which would be arranged in the final trimester. As part of the consenting process this was discussed sensitively with the women and consent was obtained to check their pregnancy status with the midwifery unit prior to arranging the second interview. This process worked well throughout the study and there were no pregnancies that failed to progress.

### **5.3 Clinical Site / Context**

The rationale for my sampling being set within one specific local authority area was outlined in chapter three. Importantly, within this geographical locality there was only one maternity unit and, as such, all maternity provision and care was under the same management and operational structure. All antenatal midwifery and medical staff operated from the same base, fed into the one Community Midwifery Unit and accessed the same allied services such as dietetics or smoking cessation, if required. Therefore, as far as was possible, the study area provided an appropriate maternity and geographical context within which to compare perceptions of antenatal care across diverse socioeconomic backgrounds.

### **5.3.1 The Local Antenatal Process for Low Risk Women**

Within the clinical site, all antenatal women deemed to be of low obstetric risk in terms of the EGAMS Report in 2002 (discussed in section 2.7), followed the same standardised programme. The following section outlines this antenatal programme. (Socioeconomic deprivation was not considered a specific obstetric risk factor).

#### **5.3.1.1 First Antenatal Contact**

The first formal antenatal contact with a midwife was usually held in the GP surgery. The antenatal contact usually followed an appointment with the GP service where women had attended to notify of possible pregnancy. NHS confirmation of pregnancy was not always undertaken prior to the first formal antenatal contact and the timing of the contact related to the timing of women attending their GP. It could be as early as 7-8 weeks gestation. The first antenatal contact was the point at which care was discussed and a decision made regarding attending the Community Midwifery Unit (for low risk women) or the Consultant Led Unit (for low risk women who did not wish midwifery led care and all other pregnancies). The level of obstetric risk was ascertained by completion of a 'risk assessment' which was considered a dynamic process starting at this visit and thereafter ongoing. At the first antenatal appointment a 'pre-scan' appointment was arranged.

#### **5.3.1.2 Pre-scan Appointment**

The pre-scan appointment could be at home or in the antenatal clinic. A 'booking pack' was given which contained a number of leaflets and educational material including the 'ready, steady baby' book, hospital information and breastfeeding advice. Information was also given on the ultrasound scan due at the next visit. The risk assessment and a depression questionnaire were completed and depending

on the results a referral could be made to the special needs in pregnancy service (for those with a history of substance abuse or depression) or a referral could be made to the Catch service (which was a midwife led smoking cessation service). None of the cases in my sample were referred to these additional services.

#### **5.3.1.3 Booking Scan Appointment**

The booking scan appointment was a hospital based appointment usually around 12 weeks gestation. The Combined Ultrasound and Biochemistry Scan (CUBS) was completed and bloods were taken for baseline measurements. The woman's body mass index was measured. The body mass index, based on height and weight, gave an indication of whether weight was over or under the accepted norms. Those women falling into either category were offered the opportunity of accessing advice from a dietitian but, anecdotally from the midwifery staff, uptake of this particular service was usually very poor. In general terms, nutrition did not form a specific component of subsequent antenatal contact.

#### **5.3.1.4 15 Weeks Gestation**

At this visit, usually at the GP surgery, blood was taken for alpha-fetoprotein testing if required and other important issues were discussed such as domestic abuse. This completed the first trimester period in which each woman was likely to have received up to 13 different leaflets and booklets regarding maternal and foetal health.

The ongoing antenatal care programme for 'low' risk women was dependent on whether the woman had elected for midwifery or consultant led care but was generally shared between midwives, General Practitioners and the consultant if

required. In general, the programme was based upon ultrasound scanning (at 20 weeks), urinalysis and blood pressure reviews and screening for foetal abnormalities.

#### **5.3.1.5 The Preparation for Parenthood Programme**

In the study locality, this comprised of a four week optional programme with the first 'class' commencing usually after 25 weeks gestation. The topics of the programme included: pregnancy and your body; pregnancy and how to cope; parenting; and labour and birth. Tours of the labour suite and community midwifery unit were also provided. These classes undoubtedly covered important pregnancy related factors, however there was very little focus on maternal health in its widest sense as would be recognised within the Dahlgren & Whitehead (1991) model outlined in chapter two.

#### **5.3.1.6 Alternative Services**

There were also other optional classes which could be taken for those wishing to know more about breastfeeding and those expecting twins. For women attending the CMU, there was the opportunity to attend hypnobirthing classes and acupuncture. All women also had the opportunity, again optional, to attend physiotherapy classes where relaxation and breathing techniques were covered.

### **5.4 Case Definition and Selection**

The methodology of case study inquiry demanded that cases had clearly defined parameters that identified them as functioning parts of a larger system (Stake 2000). The clinical site outlined in section 5.3, was 'the system' and within this system cases were identified of pregnant women receiving antenatal care from the

maternity unit. To ensure a contemporaneous approach to the collection of evidence, which would negate the issue of recall bias and ensure any data were grounded in the current approach to antenatal care, it was intended to identify cases based on those women 'booking' their pregnancy at the time of the research. As such, each case would be a 'specific' early pregnancy case. Primigravida women were chosen to minimise any previous bias in relation to antenatal care and case identification was further refined to English speakers, aged over 16 who had no known cognitive difficulties. These last three aspects were included to minimise any difficulties or concerns regarding the consenting process. This was particularly relevant if referring back to the requirements underpinning informed consent. As the researcher responsible for obtaining informed consent I needed to be sure that all women fully understood the consenting process.

To help aid later comparative analysis cases I aimed to standardise cases as much as possible in terms of their antenatal care. One way of achieving this was to ensure that all cases had no medical conditions necessitating non standard antenatal care and, more specifically, came from the pool of low risk women booking their antenatal care for the Community Midwifery Unit. (The restriction of low risk women to the Community Maternity Unit (CMU) turned out to be an erroneous assumption and, as discussed in section 5.5, the criterion of booking for the CMU was later removed).

Furthermore, as this study was a 'two-tailed' design, cases, or pregnant, primigravida women, had to be chosen to reflect the extremes of socioeconomic background. The socioeconomic case parameters were determined by the Scottish Government 20% deprivation quintile categories outlined in chapter three. Using postcode data, the Scottish Government interactive mapping facility, accessed through the Scottish Neighbourhood Statistics website (<http://www.sns.gov.uk/>)



allowed the extraction of the datazone breakdown for specific local authority areas. This interactive mapping also identified the specific rank of individual datazones within the study locality which in turn allowed an accurate 'ranking' of the locality deprivation of potential research participants. Therefore, through the use of individual postcodes, it was possible to determine which women resided in the top and bottom 20% deprivation quintiles. Importantly, this ranking was based on the 2006 SIMD analysis which was not due for revision until 2009. The lack of revised datazone rankings ensured that, throughout the study period, the same standard was applied in the identification of the deprivation status of all potential cases.

Therefore, initially, potential cases had to meet the following criteria:

- Be an antenatal primigravida
- Be aged 16 or over
- Be an English speaker
- Have no known cognitive difficulties
- Have no medical conditions necessitating non standard antenatal care
- Be booking for the Community Maternity Unit (CMU)
- Be residing in postcode datazones from the top and bottom SIMD 2006 20% deprivation quintiles

The criterion of booking for the CMU was subsequently removed but the other criteria remained unaltered throughout the study period. The outcome was that those women meeting the criteria and living in the 20% most deprived datazone areas were the target population for the case group of 'most deprived' women and those meeting the criteria and living in the 20% least deprived datazone areas were the target population for the case group of 'least deprived' women. Finally, as

stated in chapter four, in order to maximise the potential for within case replication and to allow for potential drop out, it was decided initially to aim for a maximum of 15 cases from each socioeconomic extreme.

## **5.5 Recruitment & Consent**

Throughout the period of study the process for recruitment and consent changed in accordance with the substantive amendments highlighted in section 5.2.2. Initially, the approach to participants was via the CMU midwives. Using midwives, who could freely state they were not part of the research process, to make the first approach to potential participants limited the likelihood that any women would feel obliged to participate. This recruitment via the midwives started in late April 2006 and the midwives at the CMU were supplied with a list of relevant socioeconomic areas and the research inclusion criteria. They were also supplied with the participant information sheet, participant response form and a stamped, addressed envelope. It had been agreed that the midwives would provide relevant women with the required information sheet and ask these women to forward their contact details to me if they wished to participate. The plan was to contact those women who forwarded me their details and proceed to consent. However, despite numerous meetings with midwifery staff, this approach proved unsuccessful with no recruitment occurring through this method.

In September 2006 a substantive amendment was, therefore, submitted to allow me to alter the recruitment strategy. A request to extend the research period to 30<sup>th</sup> September 2007 was also submitted. The amendment was approved in late October 2006 and the new method of recruitment commenced in January 2007. The revised approach removed the need to recruit via the midwifery staff and instead, allowed me to attend antenatal clinics and recruit potential cases

personally. This approach did create new potential ethical issues. For example, Wilson, Draper & Ives (2008) outline a number of ethical challenges that arise out of direct researcher recruitment within a clinical situation. These include additional time pressure on the researcher and the case being recruited, the case not feeling empowered to refuse and the focus being shifted from the case (who in an antenatal situation had just received their first scan pictures) to the research. In the clinical situation, every step was taken to minimise these challenges including confirming via the midwives that each potential case was willing to speak to me and also separating the process of information giving and consent by a period of 48 hours.

The new approach to recruitment now entailed collecting antenatal clinic 'booking lists' each week from the clinical site. Using the postcodes and interactive website it was possible to identify those women who resided in the relevant target socioeconomic areas. Ethical approval had been obtained to access medical records to determine parity and health status and therefore, potential cases which met the inclusion criteria could be identified. Those cases that met the criteria were identified to midwifery staff who were then asked to confirm if each of these potential cases would allow me some time during the clinic appointment to discuss the research. This was always following the 'CUBS' scan to avoid contact with any woman whose pregnancy had 'failed to progress'. Potential cases always agreed to be seen and I introduced myself to each woman, usually with her partner, in a private room within the antenatal clinic.

The invitation letter and participant information sheet were handed to each woman and the research process was outlined. With their signed permission, contact details were taken which enabled me to follow up those that expressed an initial interest in participating in the research. Each potential case was then contacted by

me 48 hours after the initial contact and asked if they would agree to participate in the study. Arrangements were then made to interview those that agreed and, following a recap of the research process and commitment, informed consent was obtained at the first research interview. The informed consent was determined by the signed completion of a detailed consent form. Once this consent form was completed, each woman was given a unique research identification number which was the only identification recorded on any subsequent documentation. This ensured confidentiality was maintained.

The new recruitment approach worked well but the relatively low number of women booking for the CMU made recruitment particularly slow. By August 2007 only four cases had been recruited – two from each case group. To counteract this, a time extension was approved in August 2007 to allow the recruitment to run until August 2008. However, it soon became apparent that even with this extension, I would not be able to recruit sufficient case numbers for either group. This related partly to my own working constraints in not being able to attend as many clinics as I would have liked. It also related to the fact that on some weeks there would be no target cases booking for the CMU. This issue was raised with my research supervisors who suggested discussing the recruitment strategy with senior midwifery staff at the University of Stirling. The midwifery staff felt that the inclusion criterion of 'booking for the community maternity unit (CMU)' was artificially restricting eligible cases from participation as all low risk women, whether booking for the CMU or consultant led care, followed a standard antenatal protocol. As such, it was considered that removing this inclusion criterion would not impact on the outcome of this research.

Therefore, in November 2007 another substantive amendment was submitted which removed the inclusion criterion of booking for the CMU. This was detailed on

research protocol version 5. Approval for this amendment was granted by the end of November 2007 and this revised process improved the recruitment rate. However, due to continuing work constraints I still could not attend as many antenatal clinics as I would have liked to maximise the speed of recruitment. As such, a final amendment was submitted in July 2008 requesting an extension to the recruitment period to 31<sup>st</sup> December 2008. This was approved.

In summary, the recruitment period ran from January 2007 until December 2008. In this period, forty women were approached to participate in this study. This represented 16 women from the least deprived case group and 24 women from the most deprived case group. The final case group sizes were 9 and 12 respectively with each case group containing antenatal, primigravida women as outlined in the inclusion criteria. This was less than the target recruitment of 15 cases from each socioeconomic grouping. This reduction in participants reflected early difficulties in the research recruitment outlined above. However, as the data collection and analysis progressed, and I became familiar with the data, data saturation was noted. As such, it was felt that the case group numbers would provide sufficient replication to ensure the research questions could be answered.

## **5.6 Data Collection**

There were three principles of case study data collection which could strengthen the quality of the overall research process (Yin 2003). These principles were: use multiple sources of data; create a case study database; and maintain a chain of evidence.

### **5.6.1 Multiple Sources of Data**

There were three sources of data in my study. These were 2006 SIMD documentation, researcher observation and two semi-structured interviews with each individual case (where able). As well as being distinct sources of data, each of the three sources was used to compile a case sheet of accessible and relevant data on each individual case. The three sources of data and the subsequent case sheets are discussed below.

#### **5.6.1.1 SIMD (2006) Documentation**

In chapter three, section 3.3, detail on the background to the 2006 Scottish Index of Multiple Deprivation was provided. There was also an exploration of the domains that underpin the statistical measurement of deprivation and how this analysis had been used to rank the postcode sectors of Scotland into 6505 datazones ranging from least to most deprived. In section 5.4 of chapter five, the process for accessing the SIMD information using the postcode data of each case was detailed. These postcodes allowed confirmation that each case resided in either the top or bottom 20% deprivation quintiles. The SIMD information also included data on key health and social indicators as well as the ability to graphically portray the geographical deprivation denseness of each case. This information was used in the compilation of case sheets for each individual case.

#### **5.6.1.2 Researcher Observation**

Observation is an important part of research in that “social scientists are observers both of human activities and of the physical settings in which such activities take place” (Angrosino & Mays de Perez 2003). My approach to observational data collection was twofold. Firstly, written researcher observations would be recorded

based on travel to the home of each interviewee. These recorded aspects related to the distance from the main urban centre, perception of the geographical area in relation to type of properties, defined boundaries, property condition and any other aspects that would help build a picture of the area of residence of each case. Secondly, written researcher observations would record the tone of each interview such as whether they were talkative or reserved and also who was present at these interviews.

From the outset, there was a personal awareness of the potential for 'observer bias' in my approach. This potential for bias is noted by Angrosino & Mays de Perez (2003) who acknowledge that each research observer will bring their own talents and limitations to the observation process. Angrosino & Mays de Perez highlight the distinction between what is observed (which they see as idiosyncratic and not replicable) with what is recorded in relation to the observation. It is the recording of the observation which they consider of most importance as this can be monitored and replicated. Hence, a systematic process of recording my observations before and after each interview was developed using a standardised case sheet. The compilation of this case sheet was commenced when the SIMD data was recorded as described above. Also prior to each interview there were recorded categorical data relating to the age and pregnancy gestation of each case. Once each interview was completed the recorded observational data could be added.

### **5.6.1.3 The Interviews**

The third process of data collection in this study was via semi structured interviews with the case group participants. The content, procedure, processes and challenges of these interviews is detailed below:

### **Interview Type & Format**

In chapter four, section 4.8, detail was provided on the rationale for collecting data via interview and for using a semi-structured approach. To recap on the main reasons for this: a degree of standardisation was sought which would allow the comparison of data within and across case groups; a degree of flexibility was also sought that recognised the natural context in which each of the interviews took place. A longitudinal approach was planned in order to determine early expectations and later perceptions of each case. The intention at the outset was to interview each pregnant woman twice during pregnancy: once post 'booking' at the end of the first trimester and once in the third trimester. This provided an opportunity to determine levels of uptake of the service and perceptions of the service at various stages.

### **Interview Content**

The interviews were designed to obtain data that would add to the existing categorical variables and also to obtain qualitative data which gave insight into expectations and perceptions of the antenatal programme. The schedules are shown as appendices 6 and 7. The additional categorical variables that were collected during the interview process included marital status, smoking status, housing tenure, planned pregnancy, occupational status of both the case and her partner and highest case educational level. The rationale for collecting these specific variables was that they reflected a number of the determinants of health, explored during the literature review, that were shown to have an association with pregnancy outcomes. They were also reflective of other measures of health inequalities. Furthermore, the collection of the categorical variables also allowed a detailed comparison of each of the case groups to determine their 'fit' with the socioeconomic population they represented.



Qualitative data were obtained in relation to the case use of antenatal care as per the programme outlined in section 5.3.1. The content was designed to relate to the research questions and ensure that the data obtained would be sufficiently robust to answer these questions. As such, information was sought regarding case thoughts and perceptions about the information received prior to each antenatal appointment; the thoughts and perceptions of the antenatal appointments; what use was made of educational literature; what additional information was sought by the women - either from health professionals, other agencies or family and friends; and, ultimately, to determine overall perceptions of the care provided. As the interview process was semi-structured, it also provided an opportunity for women to discuss other issues of importance to them.

### **Pilot Process**

The first interview schedule was piloted on two pregnant women from areas bordering the SIMD 20% datazones. These early interviews were transcribed and reviewed in conjunction with one of the research supervisors. The pilot interviews each lasted about twenty minutes and tended to obtain rather descriptive data. Following this review, the interview schedule for the first interview was lengthened to ensure the data collected could answer the research questions. In addition some exploratory questions were added to attempt to determine opinion on specific aspects of targeted antenatal care. A mock practice interview was undertaken between my principal research supervisor and myself and based on this, the final interview schedules for interviews one and two were established. These final interview schedules had a series of key headings designed to measure the key categorical and qualitative data outlined above. Overall the process was intended to establish if literal or theoretical replication in the form of similarities and differences based on socioeconomic background was observed between cases.

## **Reflexivity in Interviewing**

Before detailing the interview procedure undertaken in my research some of the aspects of the interview process and setting that may influence the data are explored. Richards & Emslie (2000) describe the awareness of these factors as 'reflexivity'.

Fontana and Frey (2003) summarise reflexive aspects as a series of factors the researcher should consider:

- Accessing the setting
- Understanding the language and culture of the respondents
- Deciding on how to present oneself
- Gaining trust
- Establishing rapport

The first of the points above had already been determined in that access to each case location was agreed in advance. The second point above was perhaps less important in terms of language but aspects of culture, along with the third point of researcher presentation, raised some reflexive considerations. Richards and Emslie (2000) reported on the differing interview interactions relating to the perceived professional role of the interviewer. Interview respondents reacted differently to those they perceived to be of a higher status and this was particularly notable in terms of 'deference' from lower social class respondents and 'alignment' from middle class respondents.

There was an awareness that how I presented myself at each interview would impact not only how the respondents in my study would defer or align themselves to me but also on the final two points above of gaining trust and establishing a rapport. My approach was to aim, as far as possible, for a neutral stance that would not create the environment where my background or presentation would interfere with the data collection process. However, it was incumbent upon me to be honest regarding my professional background. As such, I always introduced myself as a health and education professional but one who was not directly working in the antenatal field. It was hoped that this approach would ensure that each case felt unrestricted in their interview responses regarding their current antenatal care. Part of the 'neutral' presentation process was to be aware of how I dressed at each interview. As far as possible, I chose not to look overly professional in that suits and briefcases were avoided. I also adopted an approach that was casual and friendly with the use of first names. However, overall, there was personal recognition that some of the reflexive aspects described here were not entirely avoidable and, therefore, my approach was at least to follow the same standards for each interview to minimise any researcher influence.

A further reflexive point in relation to interview data collection stems from Hammersley (2008). He reminds researchers not to assume that information told to us is a direct representation of how someone thinks and feels. This is also a point raised by Weis & Fine (2000) who ask a series of challenging questions about interviewees. Specifically, Weis & Fine (2000) ask the researcher to acknowledge the potentially hidden historical and cultural challenges that underpin identities. They highlight that not all interviewees will have the necessary articulation to accurately relate the 'forces' that operate in their lives. However, the discussion in section 4.8 reminds us that interviews set in a real social context offer an

opportunity to enhance understanding of personal perspectives and actions in a structure that is not constrained by prejudged categorisation.

Hammersley (2008) also states that what people say in an interview is shaped by what they are asked and researchers need to be wary when interpreting the data. One way to balance out some of these problems was to undertake more than one interview with each person. Hammersley considers this an opportunity to check earlier answers for consistency. Hammersley also advocates that validity can be strengthened if interview data is related to other data such as documentation and researcher observation. Each of these approaches was employed in my study.

### **Interview Procedure**

The process for the trimester one interviews was as follows: each case was contacted by telephone to arrange a suitable time, date and location for interview. All research interviews were completed by me and this was always in the home of each case and generally held in the evening for those women who were in employment. On attending at the home of each case the consent procedure was completed as outlined in section 5.2.4. At this stage all women were happy to proceed and all signed the consent form. Part of the consenting process was agreeing for the interview to be audiotaped. However, clarification was sought that they were happy for me to switch the audio recorder on prior to doing so. All women agreed to be audiotaped. To minimise the awareness of the audiotape it was switched on prior to a recap on my role and the research process. After this point the first questions were asked. The first question always asked for a description of 'how they had been feeling in their pregnancy to date'. This question was used as an icebreaker and generally helped ease the women for the remainder of the interview. A series of key questions then followed as outlined in the interview schedule (appendix 6) and most interviews lasted between 30 and 45

minutes. At the end of the first interviews, confirmation was sought that each case was happy to be contacted towards the end of pregnancy to complete a second interview. All women stated they were. On returning to base the researcher observations, as described in section 5.6.1.2, were added to the case sheet.

The process for the trimester three interviews was as follows: The database was reviewed on a monthly basis to determine which cases had reached the final trimester of pregnancy. The Lead Midwife for the CMU had agreed to act as clinical contact for reviewing ongoing pregnancy status and details were provided of the cases due to be re-interviewed that month. On receiving confirmation that pregnancy was continuing telephone contact was attempted with each case to arrange the second interview. In most cases, contact was successful by this method and the interviews were arranged. Some cases could not be contacted by telephone and letters were sent instead. I was then contacted by most of those cases to arrange the interview. In the least deprived group, all women completed the second interview. In the most deprived group I was unable to complete the second interview with four cases. Three of these cases declined the interview when contacted and one case was not contactable. The interview process followed a similar pattern to the initial interview. All interviews were audiotaped and the first question was again designed to aid relaxation by asking 'how they had felt since the last interview'. A series of key questions then followed as outlined in the interview schedule (appendix 7) and most interviews lasted around 30 minutes. The case sheets were updated by noting any additional and relevant researcher perceptions.

### **Management of Interview Data**

The process and phases of data collection were based on the timings of recruitment. As such, data collection began shortly after the first case was recruited

in early 2007 and continued until the final third trimester interview in April 2009. All audiotapes were transcribed by one senior administrator with extensive transcribing experience. The initial transcripts and audio tapes were reviewed to ensure accuracy. Any areas where audio clarity was poor were highlighted following transcription and, if possible, I added to the transcription in these areas. All audio tapes and personal details remained locked in a secure drawer where access is limited to myself. All electronic transcripts were anonymised and stored on my work and personal computers. Both computers require password entry.

#### **5.6.1.4 Case Sheet Compilation**

Following completion of the three sources of data collection the case sheet could be finalised for each case. These case sheets contained categorical information including age, marital status, pregnancy status, occupation, educational level and deprivation ranking. They also contained geographical mapping information that allowed comparison of proximity to main urban conurbations and other areas of deprivation. On completing each interview, observation notes were added that encompassed the urban or rural setting of each case, the type of property that each case resided in, the presence or absence of landscaping and open spaces and the general perception of a deprived or affluent area of residence. This was important in terms of triangulating with the SIMD datazone allocation that initially identified the case. Information was also recorded on who was present during the interviews and my perceptions of whether the participant appeared reserved or expansive in her replies to my interview questions. As such, the case sheets formed an important component of the case study database described below. An example is shown in appendix 8.

### **5.6.2 Case Study Database**

The second principle of case study data collection is the creation of a case study database. According to Yin (2003) an accurate and comprehensive database, reviewable by other readers and researchers, enhances study reliability. In my research the database was compiled using Nvivo7 software which collated the categorical information from the case sheets described above. In particular, the database allowed documented comparison between cases regarding specific case attributes such as age, educational background; registrar general occupational groupings; housing tenure, smoking status, planned pregnancy and marital status. As such, the database, in spreadsheet form, was a valuable tool at the stage of analysis. The database for each case group is detailed in chapter six.

### **5.6.3 Maintaining a Chain of Evidence**

The third principle of case study data collection is maintaining a chain of evidence. In my study, the chain of evidence from potential case identification, through participant confirmation and consent, to the completion of first and second interviews is transparent and available for review. Examples of the audio tapes and transcripts, case sheets and case database were shown and discussed with the principal research supervisor and, with the exception of the secured audio tapes, remain available for review.

In summary, the three principles of data collection (using multiple sources of data; creating a case study database; and maintaining a chain of evidence) were maintained throughout my study and ensured, as far as possible, a level of convergence of evidence that enhanced the validity and reliability of my research. In particular, the data collection from researcher observation and SIMD documentation underpinned the accuracy of the initial case selection and ensured

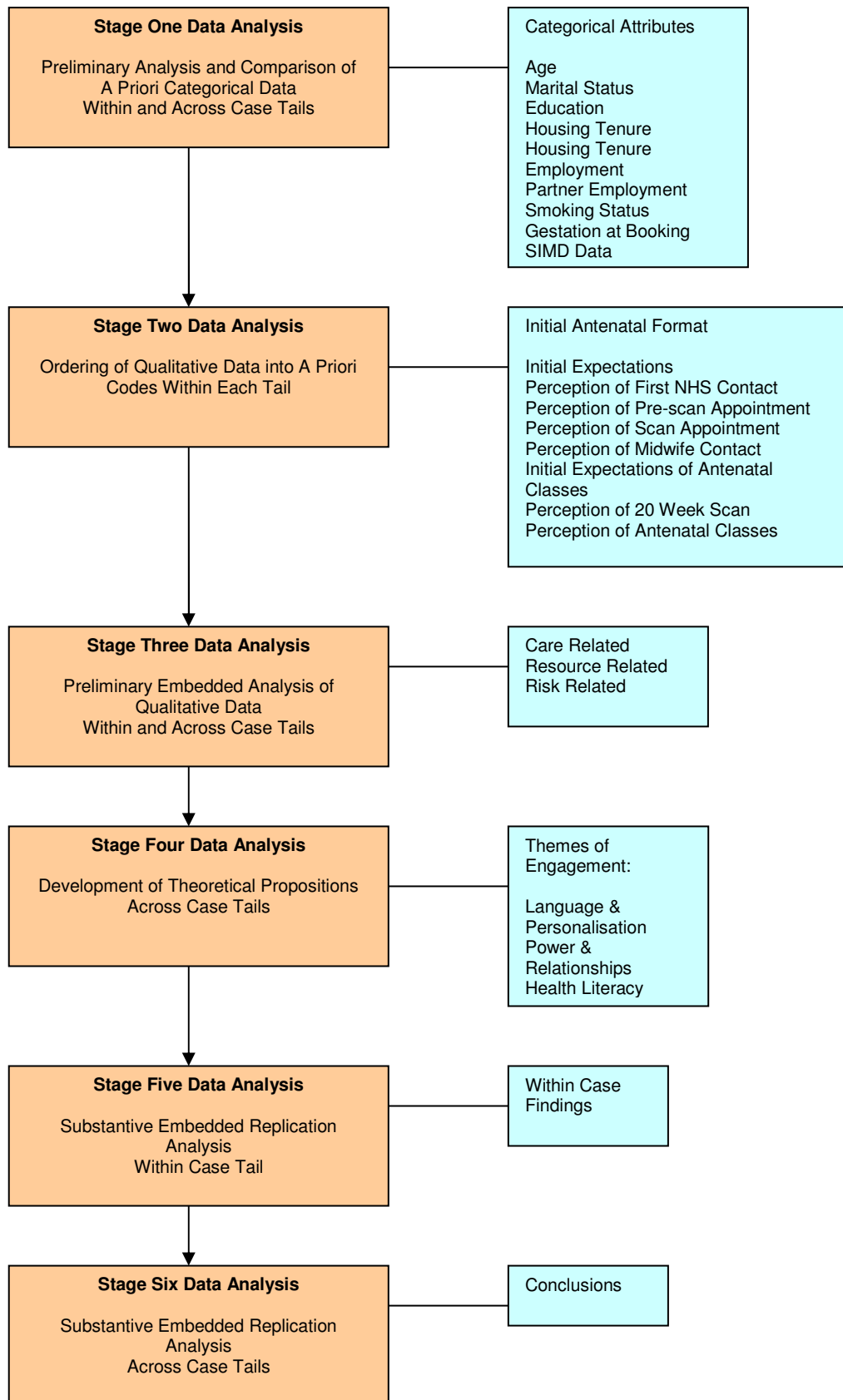
that the data obtained from the longitudinal interviews was appropriate for analysis in that the cases resided in deprivation extremes.

## **5.7 Data Analysis**

Chapter four outlined the theoretical approaches to data analysis in case study research and highlighted the six stage approach adopted in this study. Figure 6 represents the actual data analysis process undertaken in this study and each of the key stages is discussed in more detail below.



**Figure 6 Data Analysis Flow**



### **5.7.1 Preliminary Analysis of A Priori Categorical Data**

Stage one encompassed the preliminary analysis and comparison of a priori categorical data. Based on the analytical framework outlined in chapter four, a series of descriptive a priori codes was developed. The categorical data from each case were ordered in relation to these codes and, within Nvivo7, a database of categorical variables was developed for each case group. Each case group's database was reviewed to determine specific factors: how each case fitted with the SIMD requirements of residing in the relevant deprivation extremes; how each case matched with other cases within the same case group; how the two case groups matched with each other; and how samples from each case group matched with similar data from the study area as a whole and from national data. Comparisons were also made with the known categorical variables of age and SIMD status of those who chose to participate in the study; those who declined; and those who 'dropped out'. The aim of this stage of the analysis was to determine if my sample case groups were appropriate groups on which to consider aspects of generalisation as discussed in the previous chapter. The findings of this stage of the analysis are presented in chapter six.

### **5.7.2 Ordering of Qualitative Data**

Stage two encompassed the ordering of qualitative data into a priori codes based on the interview schedules. These codes included:

- Perceptions of first NHS contact
- Perceptions at completion of first trimester
- Perceptions before and after antenatal classes
- Perceptions in final trimester

Whole text transcript data were reviewed and coded into the key headings shown in the analysis flow (figure 6), again using Nvivo7. At this stage my approach was to sort the data, or women's perceptions of their care, into smaller chunks, or 'units of analysis' (Ryan & Bernard 2003) to help provide a structure through which to facilitate further stages of analysis.

### **5.7.3 Preliminary Embedded Analysis of Qualitative Data**

Stage three encompassed the preliminary embedded analysis of the ordered qualitative data using the thematic units (Ryan & Bernard 2003) that emerged from stage two. From these thematic units each individual case was compared with cases from within their own case group and across case groups. This was an important stage of the analysis as I had developed a perception during the interview stages that, with some exceptions, both case groups were describing similar thoughts in relation to antenatal care. However, by theming the data into distinct units, it became more evident that the case groups were using subtle language differences that necessitated further exploration. To help understand this, literature on discourse analysis was reviewed prior to progressing to the next stage of analysis. The aspect of language use is explored further in chapters six and seven.

### **5.7.4 Development of Theoretical Propositions**

Stage four of the analysis encompassed the development of theoretical propositions. In this analysis, there were a number of potential theoretical themes that emerged related to issues such as utility of information and engagement. However, as this research related to a clinical doctorate, it was decided to restrict

the analysis to one theoretical proposition to ensure the final thesis remained within the expected work and size norms of a doctoral thesis. As such, the theoretical proposition of engagement was progressed through the final stages of analysis. One reason for this was that aspects of utility of information would be encompassed within an analysis of engagement. A more important reason was that engagement was a new line of inquiry in this research that had not been considered at the outset. This was appropriate as an analytical outcome as it matched with Yin's (2003) explanation building approach outlined in chapter four. What Yin considered was that some propositions develop through familiarisation with the data. As I became more familiar with the data, and worked through the analytical stages, the coding was extended and the data re-explored in light of the new line of inquiry. In doing so, relationships emerged between the data and the new line of inquiry which resulted in a new theoretical proposition surfacing.

#### **5.7.5 Substantive Embedded Replication Analysis Within Tails**

Stage five encompassed the substantive embedded analysis of the emerging theoretical proposition as it related to each case tail. As stated above, this theoretical proposition related to the theme of engagement and the detail of this will be outlined in chapters six and seven. An exploration of the literature around engagement refined three distinct aspects which could justifiably be considered to underpin the concept: language and personalisation; power and relationships and health literacy. Using these three themes, a substantive analysis of the entire transcripts was completed to determine the level of literal or theoretical replications present within each case group. The aim here was to consider the data looking for commonalities and differences and to determine if the required '5 or 6 replications' (Yin 2003) were met within each case group.

### **5.7.6 Substantive Embedded Replication Analysis Across Tails**

Stage six expanded the substantive embedded analysis of the emerging theoretical proposition across the case groups. The aim here was to consider whether the replications within each case group could be considered in terms of literal (similarity) or theoretical (contrast) replication (Yin 2003). It was this stage of analysis that would determine how any potential socioeconomic differences in the perceptions of antenatal care presented.

Throughout the six stages of analysis, Nvivo7 software was used to record personal notes and memos. Miles & Huberman (1994) describe this as a method of theorising about ideas from codes and their relationships in order to allow the analysis to build from the conceptual level towards an integrated understanding of the data and the development of propositions. The overall aim of this process ensured an iterative process that was able to identify themes of importance to women within each of the case groups.

### **5.8 Validity and Reliability**

The issues of validity and reliability in the research design have been considered in the previous chapter. In particular, the replication strategy was considered one aspect of enhancing validity or at least analytical generalisation. So also was the use of semi-structured interviews which had the potential to enhance internal validity through case comparison. Reliability was also enhanced through the compilation of a case study database and case sheets available for external review. A further aid to validity and reliability was the data triangulation available through supporting documentation, particularly in the identification of cases. This data included the Scottish Index of Multiple Deprivation (2006) and the study area datazone distribution and relationship to resources.

## **5.9 Potential Limitations of the Research Methods**

Accurate case identification was determined by a standardised process which was independent of the researcher. However, the opportunity for case recruitment was limited by researcher time and could only occur when attendance at the antenatal clinic was possible. This meant that some eligible cases would not have had the opportunity to participate in this research. However, on the occasions when recruitment was possible, all those who were eligible were approached. From this point, the process of recruitment into the research was voluntary and, although all those approached agreed to being contacted for consent and first interview, not all were subsequently contactable. This may have resulted in the cases that proceeded to interview being different in some degree to those who could not be contacted. This potential difference is explored further in the following chapter.

Another limitation concerned the length of time from recruiting the first case to recruiting the final case. This covered a period of almost 24 months and may have led to differences in the provision of antenatal care during that period. However, a difference was unlikely due to the fact that antenatal care within the study area followed the programme outlined by the Expert Group on Acute Maternity Services (EGAMS, 2002). This programme was in operation throughout the period of study.

There were also potential limitations in the primary method of data collection – interviews. As discussed in section 5.6.1.3, the potential for interviewer bias is well documented in research methodology texts and there are strategies that can be utilised to counteract this. In my study, there was only one researcher carrying out the interviews and the semi-structured nature of the interview schedule ensured each case had the opportunity to state what was important to them with the final

question allowing them to add anything they wished. All transcripts were reviewed and coded through Nvivo7 and the process from data collection to analysis was designed to be transparent and reviewable.

### **5.10 Summary**

In chapter five the study design and methodology outlined in chapter 4 has been operationalised. The processes of case identification, selection, data collection and analysis have been demonstrated and, as far as possible, the strategies for research quality in terms of validity, reliability and limitations have been highlighted. These will be returned to in the discussion in chapter eight. The following chapters will now detail the results from this study.

## **CHAPTER 6 PRESENTATION OF RESULTS**

### **6.1 Introduction**

In this chapter the results of the first four stages of data analysis are presented. Specifically, section 6.2 details the results of the first stage of analysis which ordered and compared the categorical data. The results compare participants and non participants and draw comparisons between those agreeing to be interviewed and those who did not. A demographic comparison between the two final case sample groups is also outlined. Section 6.3 summarises stage two of the analysis which ordered the qualitative data into a priori codes and developed themes for further analysis. Section 6.4 details stage three of the analysis focusing on the results of the preliminary coding of qualitative data based on the participants who completed at least one interview. Primarily the data is considered from within the case groups, but where possible the data is compared and contrasted between the two sample groups. To aid the presentation, these groups have been shortened to 'least deprived' and 'most deprived'. Section 6.5 summarises the initial findings from the preliminary analysis whilst section 6.6 details the fourth stage of analysis with an introduction to the emerging theoretical proposition. The substantive stages of analysis will be explored in chapter seven with a discussion on the key findings being presented in chapter eight.

### **6.2 Preliminary Analysis of A Priori Categorical Data**

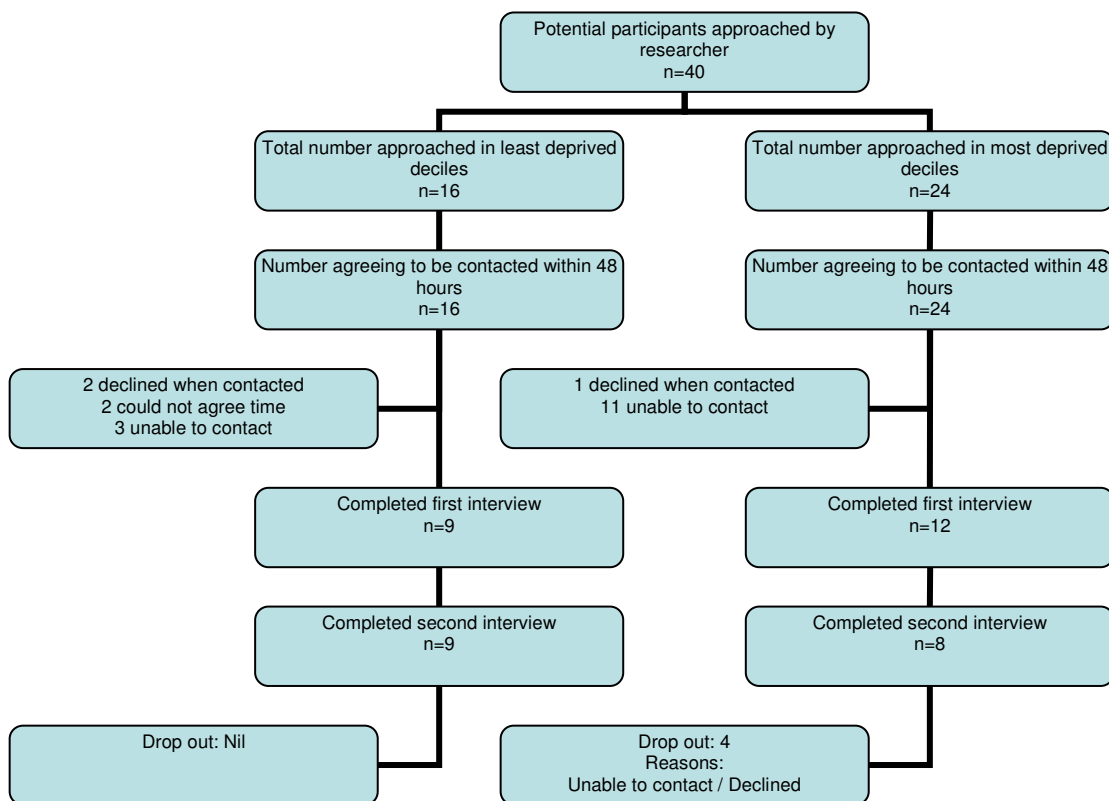
The first stage of data analysis had two components. The first was to order and compare the categorical data concerning participants and non participants. The second was to order and compare the a priori categorical data in relation to the two sample groups. The two components are detailed below.



### 6.2.1 Comparison of Participants and Non-Participants

From January 2007 until December 2008 forty women were approached to participate in this study (16 least deprived and 24 most deprived). The participation rate from initial researcher approach to completion of data collection is illustrated graphically in Figure 7:

**Figure 7 Research Recruitment Flow**

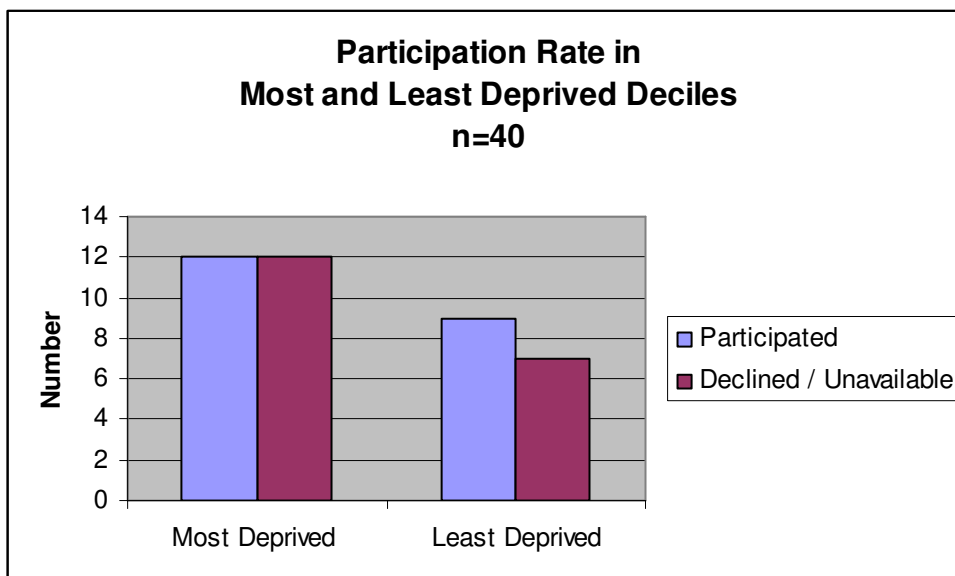


The only data obtained for all women approached to participate in my study related to their age and deprivation decile status. Of the 40 women approached, all resided in the least deprived deprivation deciles 9 and 10 or the most deprived deprivation deciles 1 and 2 (based on the most recent 2006 SIMD data). Overall, 21 women proceeded to consent and 19 women either declined when contacted or could not be contacted following the initial provision of details. In the least deprived grouping

9 proceeded to consent and first interview and in the most deprived grouping 12 proceeded to consent and first interview.

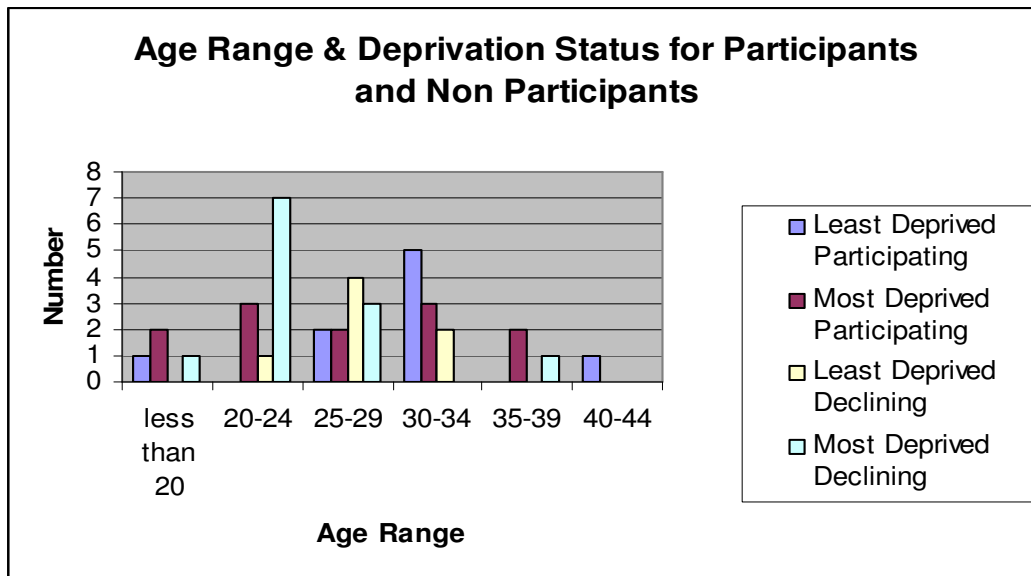
Drop out after initial details were obtained was particularly high in the most deprived group and although no definitive reason can be given for this, it was noted that almost all of these women had provided a mobile telephone contact rather than a fixed landline number. One explanation is that this resulted in an 'unidentified number' display when the attempt was made to contact them and therefore calls remained unanswered. Figure 8 illustrates the breakdown for those who participated and for those who did not:

**Figure 8 Participation Rate**



From this deprivation decile data, and from the small numbers involved, it is unlikely that any distinction can be drawn between those who chose to participate and those who did not. Figure 9 shows the age range and deprivation status of those who participated and those who did not:

**Figure 9 Age and Deprivation Status of Participants and Non-Participants**



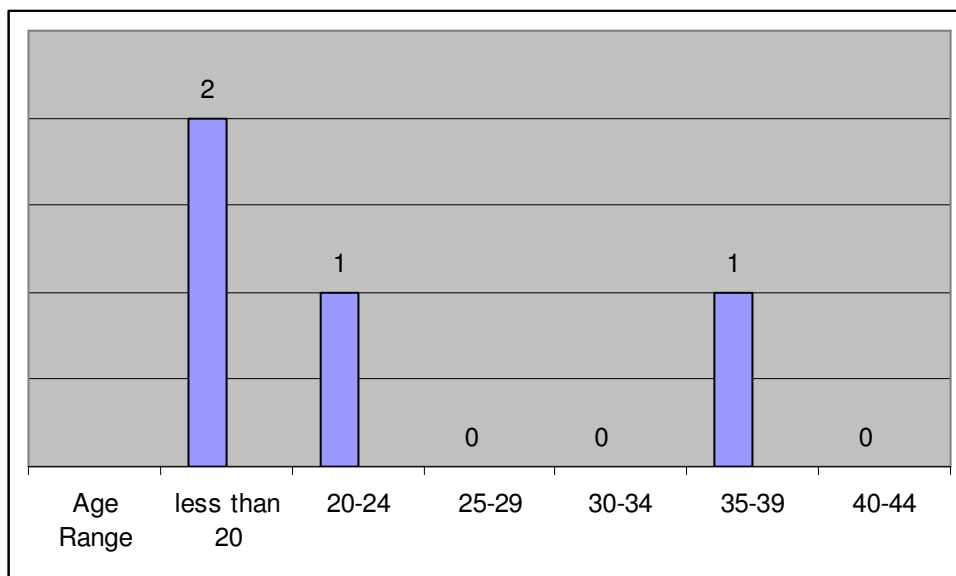
Of the 40 women initially approached, there was a significant difference in the mean age between the least deprived and most deprived sample group (t-test 2.352, 95% confidence interval). This indicated that the least deprived target group was significantly older. However, there was no statistically significant difference in the mean age of the two groups that actually participated in my research. This means that younger women from the most deprived group may have been more likely to decline to participate. The result of this was both groups were more similar in age than the original target groups would have suggested. This aspect will be discussed further in section 6.2.5.1.

### **6.2.2 Participant Drop-Out at Second Interview**

The second interviews were arranged either by telephone or letter. In total, 17 cases completed this interview, 9 from the least deprived group and 8 from the most deprived group. This rate of 'drop-out' at second interview in the most deprived group was noted early in the research which is why effort was made to

recruit more women into this group initially. On a number of occasions telephone calls, particularly to mobile phones, were not answered. This may reflect the unwillingness of the participants to answer calls from unidentified numbers as discussed earlier. On these occasions letters were sent and in three instances, on attending to complete the interview, I was informed that the participant no longer wished to be interviewed. One case in this group was unable to be contacted. Figure 10 indicates the age range of the participants in the most deprived case group who did not complete the second interview. As can be seen, apart from the one woman aged 36 who was unable to be contacted, it was the younger women who declined the second interview:

**Figure 10 Age Distribution of those not Completing Second Interview**



### 6.2.3 The Final Case Sample Groups

In total, research data were collected from 21 women: 9 from the least deprived socioeconomic grouping and 12 from the most deprived socioeconomic grouping. Tables 1 and 2 overleaf outline the socio-demographic characteristics of the two sample groups. Participants in the least deprived group are numbered LD1 to LD9.

Participants in the most deprived group are numbered MD1 to MD13. There is no 'MD2'. This is because a research number had been allocated but the participant could not subsequently be contacted:

**Table 1: Socio-Demographic Characteristics of Least Deprived Sample Group**

Case	Age	Deprivation Decile	Education Level	Employment *	Partner Employment*	Marital Status	Booking Gestation	Planned Pregnancy	Smoking Status	Housing Tenure
LD1	30	9	Post Grad.	Associate Prof & Technical	Not Recorded	Married	< 10 wks	Yes	Non	Owner
LD2	17	9	Standard	Personal Service Occupations	Not Applicable	Single	10-12wks	No	Smoker	With Parents
LD3	31	9	HNC/HND	Associate Prof & Technical	Professional Occupations	Married	10-12wks	Yes	Non	Owner
LD4	29	9	Degree	Professional Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
LD5	31	9	Higher	Professional Occupations	Professional Occupations	Co-hab	13-15wks	Yes	Non	Owner
LD6	34	10	Post Grad	Managers & Senior Officials	Professional Occupations	Married	13-15wks	Yes	Non	Owner
LD7	26	10	Degree	Professional Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
LD8	31	10	Degree	Admin & Sec Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
LD9	40	9	HNC/HND	Admin & Sec Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner

\* Based on Registrar General Standard Occupational Classification 2000

**Table 2: Socio-Demographic Characteristics of Most Deprived Sample Group**

Case	Age	Deprivation Decile	Education Level	Employment*	Partner Employment*	Marital Status	Booking Gestation	Planned Pregnancy	Smoking Status	Housing Tenure
MD1	20	2	No Quals.	Process, Plant & Machine Ops	Not Recorded	Co-hab	10-12wks	Yes	Smoker	Renting
MD3	36	2	Degree	Admin & Sec Occupations	Professional Occupations	Married	> 15wks	Yes	Non	Owner
MD4	30	2	HNC/HND	Admin & Sec Occupations	Personal Service Occupations	Co-hab	10-12wks	Yes	Non	Owner
MD5	20	1	HNC/HND	Unemployed	Unemployed	Single	10-12wks	No	Non	Renting
MD6	30	2	Post Grad	Professional Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
MD7	17	1	Standard	Elementary Occupations	Elementary Occupations	Single	10-12wks	No	Smoker	With Parents
MD8	39	1	Standard	Admin & Sec Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
MD9	30	2	HNC/HND	Professional Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
MD10	18	1	Standard	Sales & Customer Services	Unemployed	Single	10-12wks	No	Non	With Parents
MD11	25	1	Degree	Professional Occupations	Professional Occupations	Married	10-12wks	Yes	Non	Owner
MD12	22	2	Standard	Unemployed	Student	Married	10-12wks	Yes	Non	Owner
MD13	29	1	Post Grad	Sales & Customer Services	Admin & Sec Occupations	Married	10-12wks	No	Non	Owner

\* Based on Registrar General Standard Occupational Classification 2000

## **6.2.4 Overview of the Sample Groups**

### **6.2.4.1 Least Deprived Socioeconomic Group**

Six women resided in the second least deprived deprivation decile and three women resided in the least deprived deprivation decile (based on SIMD 2006 data). From analysis of researcher observation field notes, participants in the least deprived group lived further from the main urban conurbation, in detached or semi-detached properties and with defined property boundaries. The participants in this group ranged in age from 17yrs to 40yrs, with the mean age being 29.8. LD2, the youngest in the group, was the only participant in this group who smoked. She was also unemployed and lived with her parents. All other women were self reported non smokers. Eight of the nine women booked at or before 12 weeks gestation with no woman booking later than 15 weeks. Only LD2 was an unplanned pregnancy.

### **6.2.4.2 Most Deprived Socioeconomic Group**

Six of the group resided in the second most deprived deprivation decile and six of the group resided in the most deprived deprivation decile (based on SIMD 2006 data). From analysis of researcher observation field notes, participants in this group lived close or central to the main urban conurbation in semi-detached, flatted or traditional tenement properties. Often the accommodation still was or had been local authority housing. One participant (MD8) lived in a modern, private housing estate whose postcode reflected the historical deprivation of the area of residence. The participants in this group ranged in age from 17yrs to 39yrs, with the mean age being 26.3. Two participants in this group (MD1, aged 20 and MD7, aged 17) reported to be smokers and two (MD5 and MD12) were unemployed. Eleven of the twelve women booked at or before 12 weeks gestation and one woman booked beyond 15 weeks gestation. A third of the group did not plan their pregnancy.



## **6.2.5 Case Group Analysis of Demographic Variables**

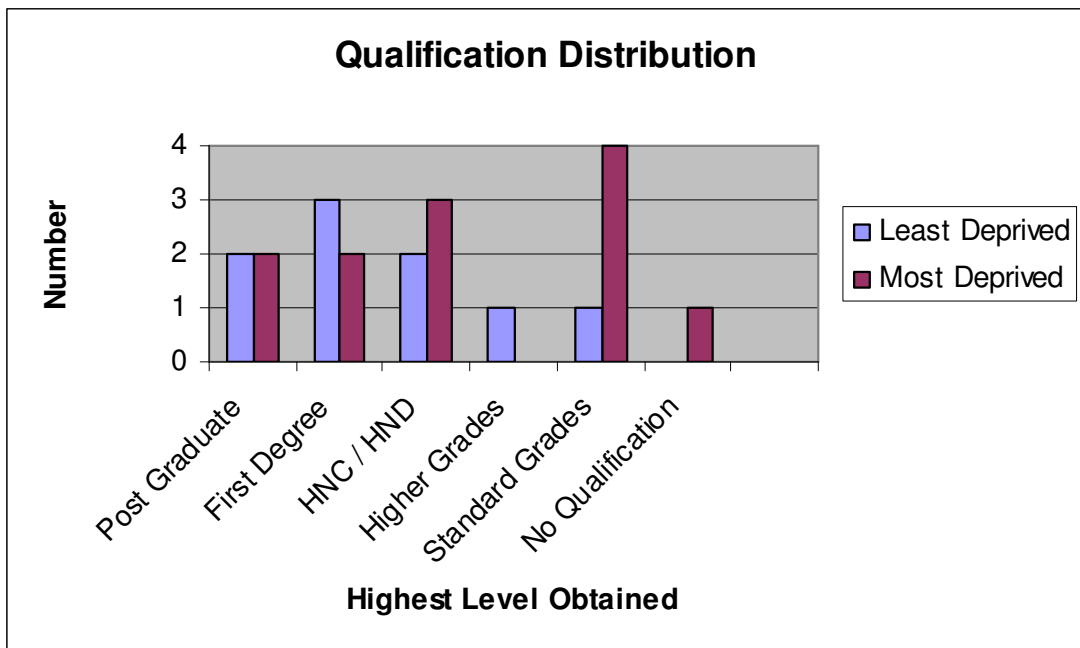
### **6.2.5.1 Age**

The mean age of the least deprived group was 29.8 and for the most deprived group it was 26.3. Generally, the small numbers made statistical tests less relevant, however a 'difference of means' test (t-test) on these means gave a t-statistic of 1.216 which, even at a confidence interval of 90%, indicated that there was no statistical difference between the mean ages of the sample groups. However, if the youngest and most atypical member of the least deprived group was removed (LD2 aged 17), this alteration gave rise to a significant difference between the group means at a 90% confidence interval (t-statistic = 2.037, critical value = 1.725). This revised mean difference between the groups was more in keeping with data from ISD (2009) which indicated that, in terms of first pregnancy, women from more deprived socioeconomic backgrounds were approximately four times more likely to have their first child below the age of 25. It also reflected the earlier data in section 6.2.1 that compared participants to non participants and showed a statistical difference in age between both 'approached' groups. However, the lack of participation from younger women in the most deprived group resulted in the two sample groups being closer in age than might have been expected.

### **6.2.5.2 Education**

Participants were asked about their highest level of educational qualification and the results ranged from no qualifications to post-graduate level qualification across both socioeconomic groups. This is illustrated in Figure 11:

**Figure 11 Highest Educational Qualification Distribution**

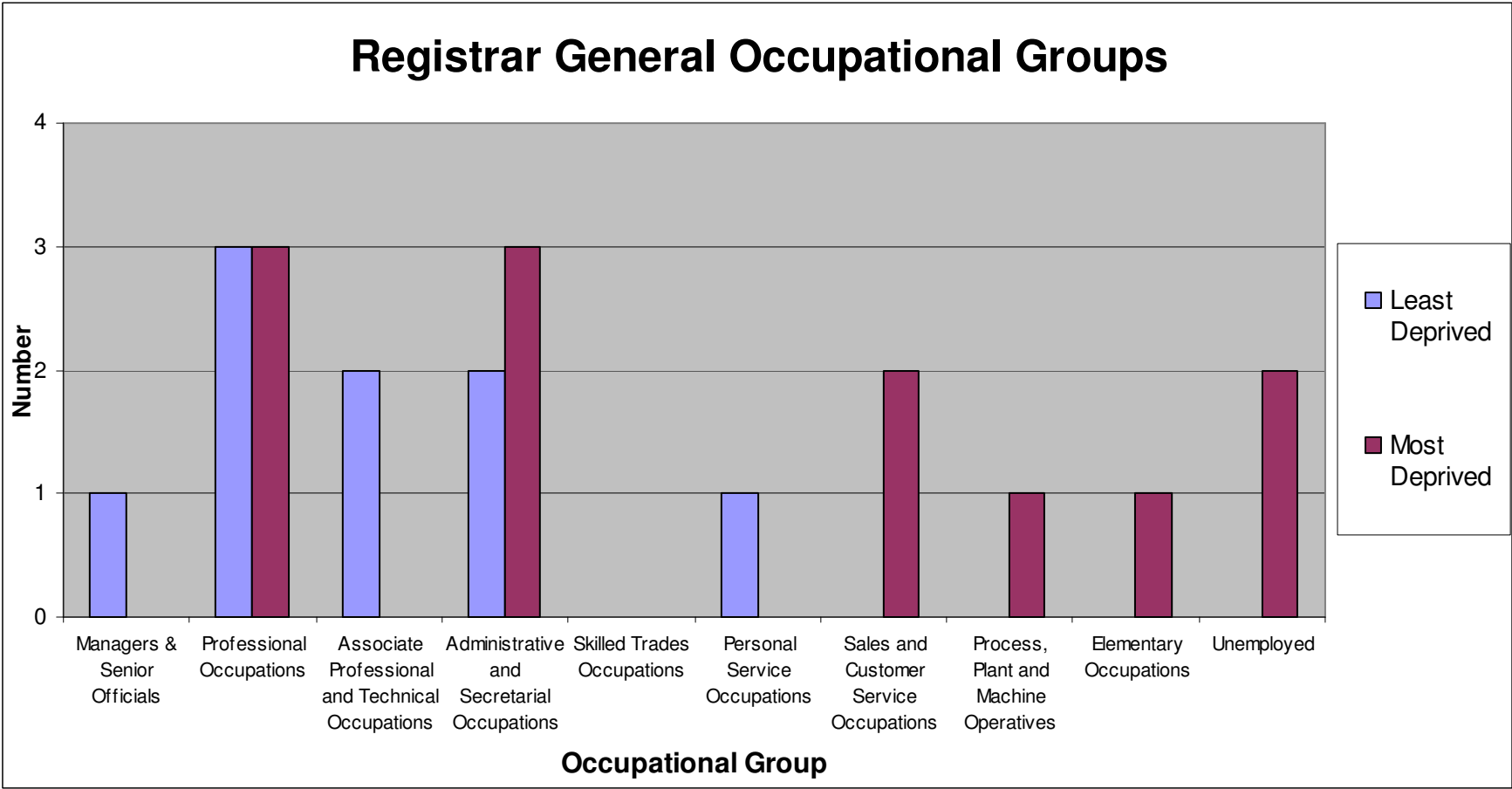


It was interesting to note that the same number of women in both groups had post-graduate level qualifications although the illustration does indicate a greater tendency for women in the least deprived group to have tertiary qualifications. Indeed, 5 out of 9 women in the least deprived group had university qualifications compared to 4 out of 12 women in the most deprived group. In the study area as a whole, covering both deprived and non deprived areas, only 17% of the adult population had higher level qualifications at the 2001 census (General Register Office of Scotland 2009). This indicated that both sample groups were educated to a higher level than would be expected. More recent data from 2007 indicated that about 10% of qualifiers from Scottish Universities came from the 20% most deprived areas (Scottish Government 2008). Therefore it appears the sample from the most deprived group in this study was not typical of deprived area residents in terms of education level.

### **6.2.5.3 Employment**

It seemed reasonable to expect the higher educational attainment level would relate to the level of occupation as based on the Registrar General Standard Occupational Classification (2000). Figure 12 illustrates the occupational distribution of the sample groups:

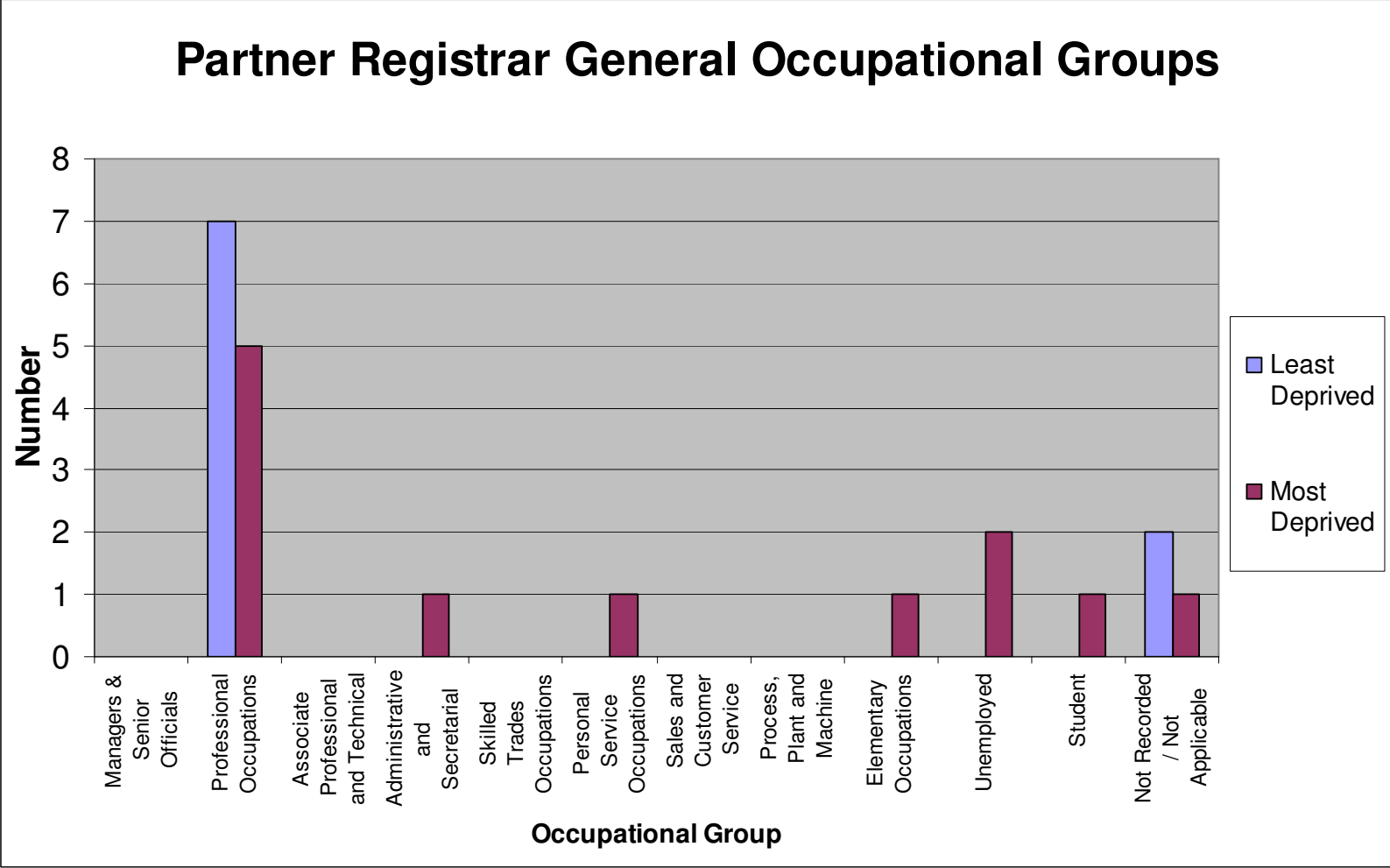
Figure 12 Employment Distribution



The majority of the women from the least deprived group were employed in higher level occupations. However, the occupational distribution for those in the most deprived group was more diverse which was not necessarily in keeping with the higher than expected level of education.

When looking at the occupational distribution of the partners of both groups there was a difference in the distribution as shown in Figure 13:

Figure 13 Partner Employment Distribution

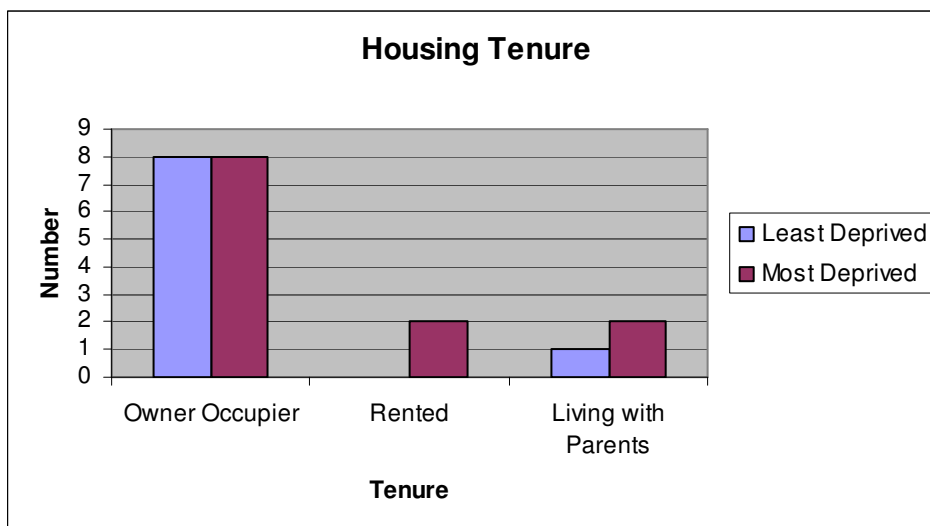


One partner occupation was not recorded in the least deprived group (LD1) and one woman did not have a partner (LD2). Therefore discounting these it was noted that all the partners of women in the least deprived group were in professional occupations. (Professional occupations included health & science related occupations, teaching, and business and public service occupations, Registrar General 2000). However, in the most deprived group it was noticeable that the majority had partners in economically lower level occupations.

#### 6.2.5.4 Housing

The lower level of economic occupational grouping may have been represented in the difference between the two groups in terms of housing type although not housing tenure. For example, similarity in terms of housing tenure is noted in Figure 14:

**Figure 14 Housing Tenure**

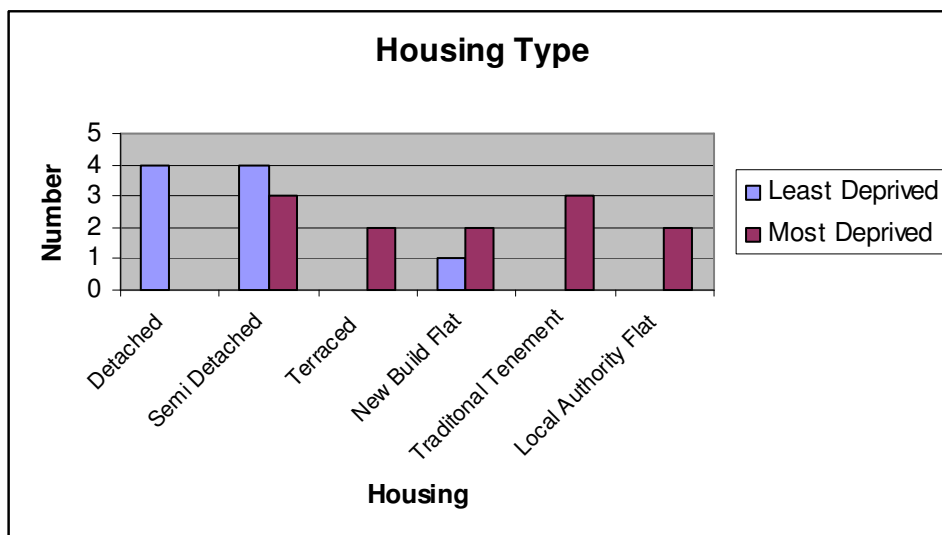


This demonstrated that despite the difference in deprivation deciles, three quarters of the most deprived group were owner occupiers. This compared to almost all of the least deprived group. If those in both groups still living with parents were

discounted, the figures were 100% owner occupied for the least deprived and 80% owner occupied for the most deprived. The owner occupancy rate for the study area as a whole was just over 65% based on the 2001 census. Therefore this indicated that both sample groups were not typical of the area as a whole in terms of their occupancy status.

However, when considering the type of property occupied, a much greater difference was noted between the two sample groups. This is illustrated in Figure 15:

**Figure 15 Housing Type**



Four of the least deprived sample group lived in a detached dwelling. However none of the most deprived group lived in a detached dwelling and the figure for the study area as a whole was 15%. In relation to semi detached dwellings, four of the least deprived group lived in this type of housing as did four of the most deprived group. For the study area as a whole, the figure was 22%. This indicated that the least deprived group were not typical of area as a whole in that they were more likely to live in detached or semi-detached properties. The most deprived group



were also not typical of the study area in terms of detached properties however they followed a more predictable pattern of dwelling in terms of semi-detached properties.

Only one of the least deprived group (LD7) lived in flatted accommodation although it should be noted that this property was a modern dwelling enclosed within a secure gated boundary. However, nine out of twelve women in the most deprived group lived in flatted accommodation despite the area wide figure only being 39%. Furthermore, the nature of the flatted accommodation in the most deprived group was a mix of traditional tenement and older local authority properties. All buildings had secure entry systems fitted but, at several of these, entry to the building could be obtained without permission.

Therefore, the standard of accommodation in the least deprived group exceeded that in the most deprived group. This reflected the demographic data outlined in this section particularly in terms of economic occupational level in both groups. In particular, it could be considered that the economic occupational level of the woman's partner contributed substantially to the opportunities open to them in terms of choosing a residency area. For example, in the study area in 2007, the *average* selling value of the property in the least deprived area (residency area of LD6) was £216k, which was £65k above the Scottish average. In the most deprived area (residency area of MD13), the *average* selling value of property was £59k which was almost £100k below the Scottish average (Scottish Government 2009).

#### **6.2.5.5 Scottish Index of Multiple Deprivation (2006) Comparison**

The residential difference extended beyond property aspects to encompass a wide range of area based deprivation indicators as recorded in the 2006 Scottish Index

of Multiple Deprivation. And whilst the headline deprivation decile was the mechanism by which both groups were distinguished in terms of recruitment, when comparing the two sample groups it was important to consider what underpinned this allocation to a specific decile.

Chapter three outlined the key deprivation indicators measured by the Scottish Government when producing the SIMD. In total, 64 summary indicators were measured for each small geographic datazone to produce a ranking scale across Scotland ranging from 6505 (least deprived) to 1 (most deprived). To illustrate the difference between deprivation deciles, table 3 below outlines selected indicators for the most extreme deprivation areas from each sample group: LD6 (datazone rank 6315) and MD13 (datazone rank 18).

**Table 3 Comparison between Datazone 6315(LD6) and Datazone 18 (MD13)**

<b>Selected Summary Indicators</b>	<b>6315 (LD6)</b>	<b>18 (MD13)</b>	<b>Study Area</b>	<b>Scotland</b>
Total Population 2007	678	347	169600	5144200
Percentage at Pensionable Age 2007	22.27	13.83	19.29	19.45
Percentage of Working Age Population who are Employment Deprived 2005	4.8	42.1	13.8	12.9
Total Income Support Claimants 2008	5	80	7800	213080
Percentage of Women Smoking at Booking 2005-07	9.1	55.6	24.4	20.8
Percentage of Children Breastfeeding at 6-8 Weeks 2007	100	20	30.68	35.92
Hospital Admission for Alcohol Use 2001-2004 per 100000 Population	288.18	3307.61	744.78	722.66
Hospital Admission for Drug Use 2001-2004 per 100000 Population	0	385.89	67.75	127.46
Number of Crimes per 10000 Population 2004	130	1696	N/A	N/A
Percentage of People within 500 Metres of a Derelict Site 2006	0	100	25	26.6

**6.2.5.6 Summary of Case Group Comparison**

The data presented here illustrate some similarities and differences between the sample groups. In particular, the data regarding age and educational qualification appear less differentiated than might have been expected. However, the age similarity was largely due to the atypical age of LD2 in the least deprived group and to the lack of younger participation in the most deprived group. This resulted in a higher than expected age distribution in the most deprived sample group. This unexpected similarity between the sample groups may have implications in terms

of the findings of this study. For example, the 'most deprived' sample group could be considered older and more educated than a 'typical' sample group from that background. As such, their perceptions of antenatal care may well be more closely aligned to the least deprived sample group and certainly less aligned to younger, less educated antenatal women from deprived socioeconomic backgrounds. This may lead to a lack of difference between the sample group in terms of their perceptions of antenatal care, or to one where any differences are minimised or atypical of other socioeconomically deprived women. However, it may also mean that any differences that do emerge may be greater than presented in my thesis.

There were, however, areas where both groups clearly did represent socioeconomic extremes particularly in relation to their area of residence and to the employment of both the women in the sample groups and their partners. Comparatively, joint potential income was certainly diminished in the most deprived sample group and this was reflected in the clear residential difference between both groups. This residential difference was represented particularly strongly in the example SIMD comparison data. As table 3 illustrates, the study area as a whole was very similar to Scotland in terms of the selected deprivation indicators. However, the residential areas of both sample groups represented extremes in terms of both the Scottish and the study area average. As such, there was undoubtedly an area based differential between the two sample groups in terms of health, environmental, social and economic indicators.

These differences represent an important point as they confirmed that the sample group representing the 'most deprived' antenatal women was reflective of deprived women as determined by the Scottish Government. In Scotland, one of the public health approaches to address issues of deprivation and health inequalities is to target resources via the Fairer Scotland Fund (Scottish Government 2008b). This

fund allocates resources towards vulnerability, poverty and disadvantage as determined by the most deprived datazones highlighted through the SIMD (2006). Therefore, as the cases in the most deprived sample group in this study resided in these most deprived datazones, they could be considered indicative of a deprived population. As such, they represented an appropriate case group on which to base further analysis.

### **6.3 Ordering of Qualitative Data**

The second stage of analysis involved the ordering and coding of qualitative data. For all women in the least deprived group, the first NHS based contact in relation to their pregnancy was their General Practitioner (GP). In the most deprived group ten women saw their GP first whilst one woman was referred directly to the midwife via the practice nurse (MD4) and one woman was referred via the sexual health clinic where she had attended for a pregnancy test (MD5).

At the end of the first trimester (around the time of the first interviews), all women had attended for antenatal appointments as requested. This meant that, in general, each case had at least four antenatal contacts, which usually equated to one with their GP and three with midwives. All women in the least deprived group (with the exception of LD2) completed at least part of the standard antenatal education programme and in the most deprived group, among those who completed second interviews, only one woman (MD9) did not participate in any antenatal education (which she stated was because she had accompanied a friend through a previous series of classes). LD2 and MD5 both attended an age specific antenatal education programme run jointly by the NHS and Barnardos. MD12 attended a 'twins' antenatal class. All the women who completed a second interview, towards the

end of the final trimester, confirmed they had attended for appointments as requested.

The coding of the qualitative data confirmed the data to be in keeping with the expected antenatal process outlined in section 5.3 and robust across both case groups. The analysis could now progress to a more iterative and detailed analysis. In particular, the ordering of the data into small chunks, as outlined in section 5.7.5, suggested three distinct and common themes inherent in each individual antenatal process that could be used to underpin the next stage of analysis. These were: care related analysis; resource related analysis; and risk perception analysis.

#### **6.4 Preliminary Embedded Analysis of Qualitative Data**

The third stage of analysis related to the themes that ran across each individual case description of their antenatal process. These three themes were: care related; resource related; and risk related. The following sections detail the initial findings, perceptions and selected quotes in relation to these three categories of analysis. However, it is important to state that the numbers within the study were small. Sample size in case study methodology was discussed in section 4.11. Specifically, Yin (2003) considers small numbers not to be a concern in case study research as analytical generalisation is the goal. However, in qualitative terms the small numbers in my study limit the strength of the findings.

To aid the presentation, the quotes will be presented according to deprivation grouping. Participants from the least deprived group will generally be shown first. In all cases the Nvivo7 Coding reference is also shown.

## 6.4.1 Care Related Analysis

### 6.4.1.1 Perceptions of First NHS Contact

Across groups, there were examples of the contact with the GP generally not being seen as useful or helpful in terms of antenatal care or advice. For example:

“I don’t even know what her name is which probably doesn’t help much and she looked at a little chart thing...I would say maybe 3 or 4 minutes and then that was it” (LD8 Reference 1)

“I was quite astonished actually; I was in and out in two minutes” (MD9 Reference 1)

In the cases where the women reported an established relationship with their GP, this contact was viewed positively:

“He was great you know he was thrilled for us” (LD9 Reference 4)

However, the issue of ‘time being wasted’ was highlighted in both groups:

“At the time I think that was my only thing because the doctor didn’t really give me a lot of information, he just said right you’re pregnant are you taking folic acid, yeah, right, that’s it basically and he didn’t discuss anything else with me so I felt then that I was left in limbo for a few weeks before I actually seen sort of people” (LD 4 Reference 3)

“There was such a big gap so I was constantly on the phone to the hospital and stuff because I was so anxious about everything” (MD12 Reference 3)

The potential issue with this time delay was noted in the need across both groups to access pregnancy related information from the earliest point in pregnancy. However, without direction from health professionals, the quality of this information was noted to be variable. For example:

“I did give myself a bit of a fright at the very start when everything’s a bit overwhelming and I didn’t know who to contact and things and I looked online and then all the things you worry about I stupidly looked at people

who've just given birth and I know I can't believe I did it, I was in shock for about 2 days after it...there is some stuff out there that could kind of mess with your head" (LD8 Reference 2)

"This is my first and I don't really know what to expect so it helps you a wee bit and what you should do. It tells you things like eating wise and things like that" (MD1 Reference 3)

Therefore, there may be an important issue here in relation to the gap between pregnancy confirmation and the first provision of evidenced based antenatal information. This issue will be explored in the discussion in chapter eight.

#### **6.4.1.2 Perceptions at End of First Trimester**

Analysis in this section considered factors such as initial expectations of care, awareness of what to expect for the remainder of care and overall perceptions towards the end of the first trimester. For both groups, there was evidence of some uncertainty about what to expect from antenatal care and how it would be structured:

"I'm not even sure what the antenatal care really does" (LD2 Reference 1)

"I don't really know what to expect. You know, all I know is that I'm due another scan in not very long and that I think then after that a two week appointments with the doctor myself and I don't really know to be honest" (MD4 Reference)

However, some women, all from the least deprived group, did report an awareness of the process that they would be undergoing. For example:

"I've filled out my chart for the next couple of months so I know when my next antenatal appointment is, I know when my scan is, my physio care and then I start antenatal classes" (LD1 Reference 1)



A majority of women from both groups did not value the 'pre scan' appointment. Even among those who had expressed some positive comments, it was generally viewed as an appointment geared towards hospital administration, record generation and the provision of required information:

"Basically just went through the same ...just repeats of things purely information and it's a paperwork exercise" (LD3 Reference 1/3)

"Again it was more a paper exercise I thought. There's a lot of paper in this thing. A lot of duplication for them as well" (MD3 Reference 3)

Interestingly, some women from the most deprived group appeared to know this would be the case:

"I knew it was just like a paperwork appointment. I didn't really expect anything from it" (MD4 Reference 1)

Not surprisingly, all women across both groups valued the first 'booking' scan appointment highly and considered this a significant stage of pregnancy:

"I just thought the woman who did the scan was absolutely lovely. She was just. I mean she was very professional but she was very again relaxed and friendly, enthusiastic but I thought God love you, you probably do this day in day out you know but she was lovely. In fact the whole process was absolutely fine" (LD6 Reference 2)

"It was weird. The two of us were just in silence going oh my goodness you know. It was nice. Cos we came out and we said ok we'll make this a special day, we'll go and look at prams and go for a nice lunch and things like that" (MD3 Reference 2)

Some of the 'value' of this scan appointment can, in part, be attributed to the shared feeling across both groups that pregnancy was 'finally' clinically confirmed:

"What happens if you basically come off the street and thinking oh I fancy being pregnant and just saying to them. They didn't actually test you.... I

know they're all accurate now that they use the same sort of test, you know a doctors test rather than a Boot's test. I know it sounds stupid but" (LD1 Reference 1)

"So the scan for me was good, final, official, right in front of me. I could see that I was definitely pregnant. There was something there" (MD3 Reference 6)

As can be seen from the quotes above, there were similarities in the perceptions of women across both sample groups - at least at this initial level of analysis. For example, at this stage of pregnancy both groups could be considered as speaking positively about their overall care and, where negative perceptions were held, these were reflected in a similar manner across both groups.

However, differences began to emerge when analysing the overall perceptions of the women in both groups at the completion of the first trimester. More specifically, in the least deprived group, almost all women spoke in positive terms about their antenatal care at this stage:

"They're always saying to you any questions, any questions, and at the first appointment, the girl said, the midwife said, they gave you their telephone number during the day and out of hours and said if you're ever worried about anything or you have a question that you think of just phone us, there's always going to be somebody here so, which is nice as well. It's reassuring" (LD3 Reference 3)

Only one woman in this group was slightly less effusive:

"I just thought I would have more contacts and if maybe that happens the further down you go I suppose that it tells you all the things you do at certain weeks, you'll have more contact, but yea I'm just kind of left to get on with it which is probably the best thing I suppose" (LD8 Reference 6)

This positive consensus in the least deprived sample group was not reflected in the perceptions of women in the most deprived sample group where, when asked to describe what they felt about their care at the end of the first trimester, there was a

tendency to temper positive comments with a more neutral perspective. For example:

“I think just because it was the very first after the doctor, I didn’t think too much about it but when I went up to the hospital it was a different midwife I was seeing and she had asked me what had happened. Did you get this, did you get that and I said no and she went, her reaction was kind of you’ll be thinking I’m doing everything today so I think she was a bit surprised” (MD6 Reference 4)

One of the differences between the groups related to the use of language, and, in particular, the specific words used to describe their thoughts and perceptions of their antenatal experience at this early stage. For example, a preliminary look at the words used across the sample groups suggested that women from the least deprived group tended to use words that might be considered more ‘active’ or ‘involved’ especially when relating to midwifery contact. Specifically, terminology was used such as:

“It’s reassuring” (LD3)

“She was like sort of explaining (LD4)

“Very informative” (LD5)

However, the terminology and language of the women in the most deprived group, even when clearly slanted towards a positive perception, was perhaps more passive than that contained within the analysis of the least deprived language. In fact it could be argued that it was somewhat functional in nature:

“Quite happy being treated” (MD8)

“Quite happy” (MD11)

“Yea I think it’s been good” (MD13)

Indeed, there was little evidence of the 'active' or 'involving' words among the transcripts of the most deprived group and, therefore, the possibility was considered that whilst women across both sample groups tended to describe a positive perception of their early antenatal experience, the reality may be that at the end of the first trimester there was a level of difference in terms of the way that the groups became involved with the service. Importantly, this level of involvement was not at all related to level of use of the antenatal service as each group accessed the service at similar stages and attended appointments as required. Therefore, the issue appeared to be more fundamental than mere 'access to' or 'equality of' services. This issue will be expanded upon at the end of this chapter prior to a substantive analysis in chapter seven.

#### **6.4.1.3 Perceptions on Antenatal Education**

The antenatal education classes started around the beginning of the third trimester and the content was as detailed in chapter five section 5.3.1.5. At the first interview (where information on content had already been provided as part of the standard antenatal programme) both groups were asked about their initial thoughts on these classes and about what they expected to be covered. Both sample groups reported a lack of awareness of what to expect:

“No idea at all.... it'll be September I guess, I don't know. I'm sure someone will tell me when to go” (LD8 Reference 1/2)

“Well I know I've got all these classes but I don't really know what's happening at them. I've got the physio class but I don't.....I'm not really sure I don't know” (MD5 Reference 1)

Despite the lack of awareness about content, there appeared to be an 'inevitability' about attending these classes which was present in both groups:

“I’ll go to them because I’ve never had it before (LD5 Reference1)

“Don’t know what a lot of the classes will do or anything like that, I just know I’ve to attend” (MD12 Reference 1)

However, some differences emerged between the sample groups in relation to their pre-class perceptions of the potential relevance of the planned antenatal education. In particular, a few of the least deprived sample group expressed a perception that the classes may not be geared towards their needs. For example:

“I’ve heard different things. I’ve heard people, it’s a waste of time, first one’s great, you see round the labour suites and things like that but then it’s just silly like they just say stupid things to you but then ...They just said oh it’s just a waste of time, silly young girls that couldn’t think for themselves. That’s been from people that are a bit older so 30 or older but they seem to have this attitude” (LD1 Reference 1)

“I said to my sister did you go to parentcraft? No she says ‘what told how to make up a bottle’? She says I’ve got a University degree it tells you how to make up a bottle on the tin and she says I’ve no intentions of feeding my baby out a bottle anyway. I’ve breastfed them both’. I wouldn’t dismiss it as that. I will I’m sure go” (LD6 Reference 2)

Both LD1 and LD6 were over the age of 30, but so too were five of the most deprived sample group and yet a pre-class perception of the potential lack of relevance did not emerge in this group. For example MD8 (aged 39) had quite a different attitude:

“She had a big list and asked me if I wanted and I said yea put me down for everything” (MD8 Reference 1)

The second interviews provided the opportunity to determine if the pre-class perceptions persisted following the delivery of the educational programme. In both groups there were positive comments about the programme. However, in many cases these were again tempered with some negative or neutral comments. Based on the analysis, and to begin to illustrate some emerging themes, these are

collated under the headings of content; structure; and perceived ability to ask questions.

### **Content of Antenatal Classes:**

Some women in both groups found the content of the classes entirely beneficial.

For example:

“It was great and the other thing that was really good was they gave you a little tour of where you were going which I thought was brilliant just where you’re going to be and what’s going to happen and that put my mind at rest quite a lot” (LD8 Reference 3)

“Especially about the birth, the last two were really, really good” (MD6 Reference 5)

But there was a majority across both groups who found the content did not entirely meet their needs. For one woman, this related to the lack of provision in terms of written material:

“The only thing is we didn’t get any, at the antenatal classes there was no leaflets handed out or anything but a girl that I was working with, she got leaflets handed out” (MD4 Reference 9)

But for the majority of women the main issue was their perception of the content and / or educational level being insufficient for their needs:

“If you read the book, that ready, steady baby book, I don’t think it they’ve told me anything at my classes that I’ve not read in the book. So when I was going to me classes it was just like kind of sort of going over again the same stuff” (LD4 Reference 3)

“Yea I think I’ve done quite a lot of research myself so there were very few things that I didn’t already know but it was still useful to hear them coming from a midwife and you can ask questions, so I really enjoyed them” (MD4 Reference 5)

In fact, only one woman expressed a perception that the educational level suited her:

“The level it was pitched at was pretty right I would say” (MD8 Reference 8)

### **Structure of Antenatal Classes:**

Another area of the antenatal education programme that the women focussed on was the structure of the classes. In general, across groups, the structured format of presentations and discussion within a large group was not seen in a positive light in either sample group:

“And it feels almost like being back at school and there’s a teacher just like talking to you and you’re just sitting trying to like pay attention and stay focused and it’s hot and it’s busy”( LD4 Reference 17)

“Well we all went in, it was just really, I had thought it would be more mixing amongst the couples but there wasn’t really, we were too shy maybe, so the midwife just talked to us all” (MD8 Reference 1)

### **Perceived Ability to Ask Questions:**

The class format was reported to inhibit some women, again across groups, from asking questions or clarifying points of information:

“Initially no we didn’t ask questions. The labour one I certainly asked some questions, again they split it into two so it was quite small groups and I found that very, very interesting, that class and I did ask questions. She would say something like the second stage of labour crowning and I would say can you just explain what you mean by crowning. Then she was talking about once you’ve actually delivered the baby about when you had this injection to deliver the afterbirth but what she didn’t make clear was at what point did you make that decision whether you want the injection or not” (LD6 Reference 5)

“I felt very young I was the youngest there by far. I felt everyone else was older and married. The group was very big and I did not want to ask any questions. It was more formal (MD5 Reference 1)

Two of the younger women (LD2 and MD5) were offered the chance to attend a separate antenatal education programme run jointly by the NHS and Barnardos. This programme is known as ‘Threads’ and is usually aimed at pregnant women

under the age of 20. It is held more frequently than standard antenatal education and the two women who attended reported considerable benefit:

“It’s like young mums and they do a lot of stuff for folk, it’s quite good...They take you through how to feed, how to change their nappies and bath them and they do all different things” (LD2 Reference 1/2)

“If I was not at threads I would just not have had much” (LD5 Reference 1)

As can be seen from the above quotes, the Threads programme was more practical in focus (which was seen as lacking in the general programme) and had a more flexible structure that met the needs of the women attending.

Overall, with the exception of one case in each group, both groups generally accessed the standard antenatal education programme in a similar way. However, there did appear to be an across group perception that the antenatal education programme was not successful in meeting the specific needs of the women. This related to content, which was seen as very general at times and not relevant and also the structure, which was seen as inhibiting. The reported lack of need being met will be explored in the discussion in chapter eight.

#### **6.4.1.4 Perceptions in the Final Trimester**

By this stage each case had received the majority of antenatal input and was attending routine midwifery appointments before their estimated date of delivery. In common with the perceptions at the completion of the first trimester there were some positive aspects across groups in the way the women described their experiences:

“It’s been good. It has been really helpful and folk have been really good with me” (LD2 Reference 3)



“Great” (MD8 Reference 12)

However, there was an overall tendency in both groups to describe their experiences from a largely neutral perspective where positive comments were tempered by negative remarks:

“I thought maybe they would talk to you more about things like for example in my notes I’ve got like a labour plan and stuff like that and I wonder what stage they would start to talk about this... I don’t really know whether to say it’s met my expectations or not because I think as a first time mum I didn’t really know sort of what to expect but I did think it would be a wee bit different” (LD4 Reference 1/2)

“She just generally asks how I’ve been, how I’ve been feeling, how I am feeling. One of the early appointments I did take a list in with me and I felt as if I was holding her up a wee bit for the next person. Whereas in the hospital you know I know I won’t get that feeling” (MD6 Reference 5)

This neutrality continued to reflect the first trimester findings in respect to the most deprived group. There was no identified connection in the data between access of service and the value or meaning placed on that service. However, the data suggested a shift in the perceptions of women from the least deprived group between the first and final trimesters. In the first trimester, these women appeared to display evidence of a level of involvement with the service that was less obvious in the data as the pregnancy progressed. This may well reflect the point made earlier in the analysis that women from the least deprived group may have placed less ‘value’ or relevance on the educational component of their antenatal care than they appeared to place on the clinical aspects – which in early pregnancy happened fairly rapidly before the more education based input was pronounced.

## **6.4.2 Resource Related Analysis**

In the antenatal period women in both groups had a number of resources at their disposal in terms of obtaining information. Specifically, the entire sample was provided with the standard educational material from the midwifery service. However, the entire sample reported they had access to the internet and to purchased material and the interviews provided an opportunity to obtain their perceptions on the utility of this material. The analysis is structured under the key headings of NHS provided material and external resources (encompassing books and online material).

### **6.4.2.1 NHS Provided Educational Material**

Early in pregnancy, usually at the pre-scan or booking appointment, the women were provided with a number of educational leaflets that covered aspects such as antenatal screening, breastfeeding, seatbelt safety and domestic abuse. They also all received a larger publication entitled 'ready steady baby' which covered important aspects in pregnancy and after birth. At each interview the women were asked about their perceptions of this material and the use they made of it. Across groups only a minority spoke in positive terms about this information:

“I feel like the reading material and that, that they've provided you with along with the meetings has sort of helped to fill a lot of gaps” (LD4 Reference 2)

“The one about the RAH, the blue one, I enjoyed reading that and the one about the blood tests was really informative because that put my mind at rest about some of the things that were, you think why are you getting all these done” (MD11 Reference 1)

Most of the women tended to have a more negative perception of the written information they had been given. This negative perception fell into three distinct

aspects: quality; volume and relevance. For example, in terms of quality some of the women questioned the publication style:

“I think one of the books we got Ready, Steady Baby or something and it’s really old fashioned, so dated already I think from when it was published to getting that now I feel it’s sort of laughable some of the stuff that it was asking you to do or just tips and things like that it wasn’t really helpful at all to be honest” (LD8 Interview 2 Reference 1)

“They just seemed like magazines but not particularly good magazines” (MD8 Reference 2)

More specifically, the volume of material impacted across both groups. An indication of this volume was given by MD8:

“Oh goodness, well including all the wee pamphlets I would say more than ten. I think there was something like 16” (MD8 Reference 6)

In one case this was seen as positive:

“Cos when I came back with all the leaflets and that was just the second time, I was like that, my God, they’re so thorough” (LD3 Reference 3)

But overall, there seemed to be a strong feeling across groups that the volume of written material was overwhelming:

“Yea I got a lot of information, I came out with a bag with books and leaflets and stuff so there was quite a lot.... and then when I went for the scan I got more books as well, I haven’t actually read them all but I’ve got quite a lot” (LD5 Reference 1)

“I have only read the ready steady baby book. That was good. I have not read any [others]. I have them in my notes” (MD5 Interview 2 Reference 1)

All of the written information that was provided was considered essential by maternity services. However, it could be argued that this volume of material might be lessening the likelihood of all of the material being read. For example, there

were only two women in each group who stated they had read all of the given material:

“Absolutely [read what’s been given]” (LD6 Reference 1)

“I did actually read all of them. I was off work at the time. I had time to kill” (MD 4 Reference 1)

The rest of the women, in both groups, utilised the material in a different manner.

For example:

“I kind of flicked through it ...but I didn’t really read the stuff, the book anyway” (LD8 Reference 3)

“To be truthful, I’ve scanned them all, but there’s only, like the breastfeeding ones and the cubs ones, I’ve actually sat in depth and read word for word, you know I’ve actually looked up and read” (MD9 Reference 2)

One particular point that featured in the perceptions of both groups was the perceived relevance of the material:

“Some of them weren’t, didn’t really relate to me you know the ones about did you claim benefits and things like that, there was a lot about child care and breastfeeding classes and you know go to breastfeeding classes before you’ve even had the baby and stuff” (LD5 Reference 3)

“There’s a lot of leaflets that I think that wasn’t really anything to do with us and that we didn’t need” (MD12 Reference 4)

The impact of this perceived relevance may have been that some women across both groups self-selected what they considered relevant or what they would read at particular stages of pregnancy. For example:

“If someone was saying there’s a higher risk of that then obviously I’d read up on it but at the moment as long as they’re telling me everything seems to be ok. I’m just going for everything seems to be fine” (LD1 Reference 3)

“I don’t see the point in reading bits that I don’t need to just now basically, so I just forget it” (MD4 Reference 2)

Women in both groups seemed to utilise the written NHS provided information in similar ways. Importantly, women reported that they did not like being overwhelmed by reading material and they tended not to read anything they didn't personally perceive as relevant. Not surprisingly then, was the fact that what both groups also had in common was their use of external resources.

#### **6.4.2.2 External Resources**

The use of external resources, such as purchased books, magazines and the internet, was of note when it was reported that the use of the NHS provided information was not necessarily as beneficial as intended. The women in both sample groups outlined specific reasons for using these external resources:

“I went and bought a couple of things that gave me more detail about the different stages, week by week kind of thing” (LD6 Reference 1)

“Just again my friends, they're all having kids just now or just had kids and they've bought books” (MD3 Reference 1)

The internet was used by all women in the sample. Specifically they commented on the convenience and speed of accessing their required information:

“I think it's because I can look at it at work and it's not that, the stuff on the internet is like medical you know it's just people like myself who've got swollen feet or I feel sick, you know it's people saying.....I'm feeling like this and then it shows you, it's pictures and it's telling you exactly what size your baby would be and shows you pictures of babies that size” (LD5 Interview 2 Reference 2)

“Like I'd probably go online, that's quicker (MD5 Reference 3)

Some women, across both groups, reported that the information obtained from the internet was used to clarify or check information provided by the antenatal service:

“Oh you go on the internet and things like that because at one point the baby was lying the wrong way round. That was at my 32 week appointment

so I'd went down and had a look but they said they wouldn't do anything till my 34, 35 week appointment and then they would give me exercises but I just started doing exercises myself that I got off the internet and when I went back the baby had turned" (LD3 Interview 2 Reference 2)

"Yes because a lot we weren't asking and she wasn't entirely sure of how to answer the question about premature, she actually had to look up the notes to find the answer to that so I've basically been online" (MD12 Reference 3)

Furthermore, one woman from each of the sample groups gave the additional impression that information obtained from the internet negated the need to seek some information from the midwifery service:

"I would imagine that these people who don't have access to the internet would have a list of questions to ask the midwife" (LD3 Interview 2 Reference 7)

"Not really. I'd done a lot of reading myself on the net" (MD11 Reference 1)

Importantly, across both groups the internet allowed the women to seek information that they perceived as relevant to them:

"I suppose my main source of information is the kind of doctors net forum type thing in the sort of family threads, maternity threads, people in the same boat so I've not posted on it and that's really interesting stuff" (LD7 Reference 1)

"I mean you don't want to be one of these, I just don't want to be one of these that phones fifteen times you know. You don't want them to think that of you either. I want to do it right but I thought it was a little bit kind of vague. The actual information I got was off the net" (LD8 Interview 2 Reference 1)

For women in the most deprived group this relevance seemed to relate to the ability to obtain regularly updated information in keeping with their stage of pregnancy:

"There's been things on the computer as well. I've been getting the pregnancy weekly thing. That tells you each week, it tells you what you should be expecting and stuff like that...This is my first and I don't really know what to expect so it helps you a wee bit and what you should do. It tells you things like eating wise and things like that" (MD1 Reference 1/3)

“They send you an email every week. What stage of pregnancy you’re at and everything so that’s quite good” (MD4 Reference 2)

Potential difficulties with the accuracy of online material were reported – but only in the least deprived group:

“Yea I had to wade through different answers but yea, enough to kind of reassure me” (LD4 Reference 1)

“I did give myself a bit of a fright at the very start when everything’s a bit overwhelming and I didn’t know who to contact and things and I looked online and then all the things you worry about I stupidly looked at people who’ve just given birth and I know I can’t believe I did it, I was in shock for about 2 days after it and some of the advice, there’s like forums and things but I think maybe, I’m not stupid, I wouldn’t rely on any information put n the internet regardless of whether it was by some American lady or a Professor you know but there is some stuff out there that could kind of mess with your head, oh yes some crazy forums telling you to lie still for 12 months or 9 months and do this and real crap on it” (LD8 Reference 1)

The women were asked where they obtained the most useful information for them and across groups there was reported value placed on the information obtained from the internet:

“I feel awful but it is online and I guess it’s more up to date you know” (LD8 Interview 2 Reference 1)

“Aye, aye the website I like that. I look at that every week, every week” (MD 1 Reference 4)

“I’d go online” (MD12 Reference 5)

From a professional perspective there are some important issues that need to be considered in this analysis of information exchange and the use of external resources. These include the selection of reading material based on self-determined relevance and the use of the internet as a means of obtaining required information. These issues will be explored in the discussion in chapter eight.

### **6.4.3 Risk Perception Analysis**

Before concluding the preliminary analysis, the perception of risk was considered. The literature review in chapter two illustrated the potential impact of specific risk factors on pregnancy outcomes. In particular, cigarette smoking, substance misuse and the effects of socioeconomic deprivation were shown to impact negatively on certain pregnancy outcomes such as low birth weight. Normatively, it is recognised that these factors may require additional education or support during the antenatal period but what is less well recognised is how this 'additional care' is perceived by women. For example, the analysis presented in this chapter did seem to suggest that the women in the sample groups were aware that certain factors, particularly in relation to education, were more relevant to them than others. However, what was less obvious was whether the issue of relevance related to any perception of risk and, particularly from my perspective, whether a perception of risk related to socioeconomic deprivation. To attempt to answer this, the women were asked a series of questions about their views on whether they believed care should differ for certain women. More specifically, they were asked about their thoughts on smoking and drug use in pregnancy and on the impact of living in certain areas.

#### **6.4.3.1 Smoking and Substance Misuse**

Both groups expressed strong opinions on the use of specific substances, including tobacco, alcohol and illicit drugs, in pregnancy. For example:

“Smoking and drinking they’re pretty easy to give up, you know what I mean, smoking you can get patches for, drugs you should just go to your doctor and speak to him and get put on some treatment course or something, but I just think you shouldn’t be stupid enough to get pregnant in the first place if you can’t give your child a chance” (LD3 Reference 5)

“They [drug users] should be shot” (MD5 Reference 1)



“I think for the baby you know smoking and drinking and taking drugs I just think that’s really unfair giving them a really bad start to their life” (MD6 Reference 1)

The women were all asked if those who smoke, drink to excess or misuse drugs should get ‘more’ antenatal care than women who don’t. The responses to this were interesting in that although women in both groups recognised the increased risk to the babies of those women who misused substances, not all were keen to support any type of additional care that exceeded what they themselves received. Those that were supportive were in the minority:

“I think they probably should. I think people, anybody that’s at higher risk whether it’s through smoking, drinking, taking drugs or just ill health in general. If they’re at higher risk then I would say probably it’s sensible that they are checked” (LD4 Reference 1)

“I have no idea what it feels like to crave something so badly and I’m talking about even a cigarette here and I know that people are dealing with far worse and more threatening things to their baby than that but no I would have said, no I wouldn’t grudge them better care” (LD6 Reference 1)

One woman in the sample who was a smoker (LD2) had been offered smoking cessation help but declined:

“No I’ve not been keen” (LD2 Reference 1)

But when asked about the level of antenatal care for women who misuse drugs she had an interesting response in that she considered their care should be reduced:

“I don’t really think they should be taking anything obviously like that really when they are pregnant so just less maybe...Uh huh they’re doing it themselves” (LD2 Reference 3)

The remaining women across groups tended to favour similar care to themselves but not increased care. This, though, was not a decision they came to lightly:

“No, you see people that take drugs are really, that’s a sore point you know I hate that and you hear about babies that are born heroin addicts and stuff but if they have got a child that didn’t ask to be born and it needs to be treated you know it needs to be given the best care cos it never asked to be born so I suppose everybody should get the same treatment yea” (LD5 Reference 1)

“I’ve not got a lot of patience for women who smoke during pregnancy. I think it’s very selfish but should the baby suffer through antenatal care, no, I wouldn’t think so. But it does annoy me when I see women smoking and drinking through pregnancy” (MD3 Reference 1)

Finally, the women were also asked if they would take less care to allow someone more care. Only two women (LD6 and LD8) considered that they might:

“I would uh hu I would because I just feel, I feel fortunate that I haven’t, and I think the whole drug thing is you know I have education on my side, but I don’t think that because I’ve got a University degree and because I have a good job and obviously nice things you know drugs isn’t necessarily a lower class thing you know I just am very fortunate you know, the choices I’ve made in life have kind of steered me down a pathway and I don’t have to deal with these sort of things” (LD6 Reference 2)

“I don’t know. I guess as long as you got enough adequate care for yourself” (LD8 Reference 2)

However LD8 revised this opinion by the second interview:

“I could be a little bit more selfish this time but I don’t know I think last time I was oh everyone deserves the same and I suppose that’s a very hard question to answer now having been through everything where I’ve kind of fought for a place” (LD8 Interview 2 Reference 1)

All other women were of the opinion that whilst care for some may be enhanced beyond the standard care, nobody should receive less to accommodate this:

“No I wouldn’t like to get less care just because I looked after myself no, no I wouldn’t, I’d be angry at that yea” (LD5 Reference 3)

“Oh no, no, no, my baby’s just as precious as theirs” (MD8 Reference 2)

#### 6.4.3.2 Area of Residence

The women were asked if they felt that where a woman lived whilst she was pregnant should impact on the care they receive. This was phrased in such a way as to highlight if women living in a well-known 'affluent' area should receive the same care as women living in a well-known 'poorer' area. In contrast to the clarity of risk that both groups appeared to associate with smoking, drug or alcohol use in pregnancy, there was less association perceived by either group that area of residence might carry a risk. Certainly, some women did discuss a potential risk though more of these were from the least deprived group:

"I come from like a clinical background so I can understand like the meaning of things. But I think maybe if you're like maybe not had such a good education or whatever then it might be more difficult, so they might need a wee bit more time spent to explain things....They might not have the knowledge of how to go about to find the information and stuff" (LD4 Reference 1/2)

"I suppose that would be down to a kind of diet and lifestyle" (MD4 Reference 2)

However, as with the risk perception in relation to smoking and drug use, most women, including some of those above who seemed to recognise the area based risks, were not in favour of enhanced antenatal appointments at the expense of their own care:

"This doesn't sound right, but just because I work and I've looked after myself, no I don't see why I should get any less care for it. You know I work and I pay my taxes, like you probably do.....but I don't think you should be penalised for people in poorer areas" (LD5 Reference 1/3)

"I don't think it should affect your care at all but maybe people from a poorer social place don't have the same mentality and I don't mean that in a bad, I'm from L....., but maybe they don't have the same information or the same education at times and from that maybe they should be educated more or maybe that facility should be open to just anybody that wants to go for more education on it but that's all, maybe from an information point of view and more an education to educate maybe people that don't know they should be eating better and don't know what a good diet means and things

like that so, if it's available, it should be available to everyone" (MD3 Reference 2)

The evidence on risk, presented in this section, illustrated an interesting point. Most of the women were knowledgeable about the personal risks inherent in smoking or substance misuse but they were much less knowledgeable about the inherent risk of socioeconomic deprivation. Yet, based on the analysis of the utility of resource use, some women may have more relevance for educational input that they actually realise (particularly as it is less feasible to 'remove' outright the risk associated with socioeconomic deprivation). The aspect of risk will be discussed further in chapter eight.

#### **6.4.4 Summary of Stage Three Findings**

The preceding sections of this chapter have presented the results of the preliminary analysis and introduced some key findings. Before proceeding to summarise these findings and progress to stage four of the data analysis, it is important to qualify the data. Overall the numbers within the study were small which limits generalisability. However, in chapters four and five, it was stated that 5-6 replications within case groups are considered by Yin (2003) to be a basis for a degree of generalisation. Furthermore, section 6.2 detailed that both case groups, whilst atypical in some respects to women from their respective backgrounds, were representative of women from the least and most deprived backgrounds in terms of residential status and environmental, social and economic indicators.

The key points emerging from the preliminary analysis of the data were as follows:

- In each case group there was a perceived inadequacy of first antenatal contact
- In each case group the utility of antenatal education, whether written or delivered via structured antenatal classes, may have been based on self perceived relevance
- In each case group there were examples of an additional perceived difficulty in asking questions within the antenatal education programme
- In the least deprived case group there may have been less utility placed on the educational aspects of antenatal care than placed on the clinical aspects
- Across each case group the access and use of the antenatal service followed a similar pattern
- Across each case group, despite the access being similar, there were suggestions that women from different socioeconomic backgrounds did perceive their antenatal care differently

These findings will be discussed in chapter eight following the substantive analysis of the theoretical proposition emerging from the preliminary findings.

### **6.5 Development of a Theoretical Proposition**

The fourth stage of analysis, discussed further in chapter seven, encompassed the development of a theoretical proposition. In part, initial theoretical propositions shape the design and data collection of a study (Yin 2003). In my case this had led to the creation of two socioeconomically extreme case groups and the research question focusing on if and how these two groups might differ in terms of their perceptions of antenatal care. However, there was no pre-determined theory underpinning the potential emergence of any differences. Instead the approach

was to review theoretical ideas in light of the collected evidence, preliminary analysis and current policy and research (Yin 2003). Each case could then be reviewed substantively against the emerging proposition to determine replication.

The preliminary analysis demonstrated that women from the least and most deprived case groups accessed the service in very similar ways in terms of routine clinical antenatal appointments. Furthermore, almost all cases across both case groups accessed some form of structured antenatal education. This level of 'equality' across both socioeconomic groups in terms of their access to antenatal care may indicate that socioeconomically deprived women in my study counteracted the inverse care law discussed in the literature review.

However, in section 2.7.2, some of the confusion around equality and equity was discussed. An example of the confusion was noted in the 2003 report by the Parliamentary Health Select Committee (PHSC) which looked at the issue of inequality in maternity services. The introductory paragraph stated:

“Care for mother and baby throughout pregnancy and the early postnatal period can have a marked effect on the child’s healthy development, on resilience to health problems encountered later in childhood, and on the woman’s health and experience of motherhood. Yet some of the most disadvantaged and vulnerable women, who have the greatest need of care and support throughout pregnancy and the early stages of motherhood, are less likely to receive the same quality of care as other women” (p5).

This statement placed the focus not on access but on 'quality of care' and was based on quantitative data from sources such as the Royal College of Obstetricians (2001) which confirmed inequalities in pregnancy outcomes. However, in the same PHSC report, despite the initial emphasis on quality of care, the attention was subsequently drawn to access of services. This was made clear by the questions they asked in order to compile their report:

- What evidence was there that disadvantaged groups did not have full access to maternity services?
- What was the Government doing to help disadvantaged women gain access to maternity services?
- What were the barriers to access for disadvantaged women and their babies?
- How could barriers to access be overcome?

Therefore, from an initial approach based on quality of care the focus shifted towards access.

The weakness of the focus on access has recently been noted in other studies. For example, a systematic review by Lavender et al (2007) concluded that access was not the most important factor in determining pregnancy outcomes. Similarly, a study by Howard et al (2008) indicated that to make a difference to pregnancy outcomes, increased contact or access, per se, was not as important as access at the right time in pregnancy.

The result of an emphasis on access to antenatal services may be that attention is being diverted away from a focus on the efficacy of that access. My data suggest there may be some truth to this as the preliminary analysis demonstrated that, despite accessing their care in a similar manner, the two groups did not seem to perceive their antenatal care in the same way. Therefore, there needed to be a level of analysis that could explore the data beyond access. In the following section the data and reasoning underpinning 'engagement' as a theoretical proposition will be detailed.

### 6.5.1 Developing the Theme of Engagement

In my data, there may have been evidence of access overriding quality based on an analysis of the language used by each woman. For example, all women in my study, irrespective of socioeconomic background, accessed the standard antenatal services in a similar fashion. What did not seem to be similar was their experience of the service once they had accessed it. This was suggested in the analysis in section 6.4 above, and in particular the sections on perceptions at the completion of the first trimester and perceptions at the final trimester. The analysis in these sections suggested a subtle difference in the use of certain words and phrases between the case groups. For example:

“Going up to the hospital and seeing the floor and the midwives and things and understanding how they’ve chosen to go midwife led. So they’re obviously explaining that about it....Hypnotherapy and things like that, you know the things that were available to you, that’s really interesting so I’ve put my name down for some of that” (LD1 Reference 2)

“I think I thought there might have been more happening in the early weeks but I can see why they don’t really.....I’ll continue to be impressed and quite happy being treated” (MD8 Reference 1/2)

Both these quotes represented a positive view of antenatal care and were typical of the statements made across the case groups. Both cases were expressing a level of satisfaction with the services they had accessed but there may have been a fundamental difference in the way that both cases placed themselves ‘within’ the antenatal system. For example, in the first quote, from a case within the least deprived group, there were several words and phrases that could be considered as representing active involvement or interest such as: ‘explaining’; ‘understanding’; ‘really interesting’; and ‘I’ve put my name down’. This described a level of involvement in antenatal care that had gone beyond passive recipient. The second



quote, from a case within the most deprived group used much more passive terminology such as 'quite happy being treated'. This passive approach, whilst not negative, might not represent a woman who was actively involved in her own care. Replication of this passive approach to the antenatal service was noted in the language used by several of the cases from the most deprived group:

"I don't really know. I haven't really thought about it... I don't know because I don't really ask a lot of questions when I go to the appointments so" (MD5 Reference 2)

"I've been quite happy with anything that's happened so far...Yea probably because if I don't know something I'll go and find it out myself" (MD11 Reference 1/2)

Discourse analysts, such as Fairclough (2001) consider language an important basis for analysis particularly as both language and communication are influenced by the context in which any interaction takes place. In particular Fairclough cites examples of organisational structures, such as exist in the NHS, that limit the 'space' in which patients can explain their problems. In my study the evidence seemed to suggest that this 'constriction of space' may be a problem more apparent in the socioeconomically deprived group.

The concepts of activeness and passiveness are central to much of the work by Coulter (2006) and Coulter and Ellins (2006). In particular, Coulter and Ellins (2006) undertook a review of patient focused studies that encompassed a specific range of outcomes such as patient knowledge, patient experience (including satisfaction) and patient behaviour. Those that they considered to be truly 'patient focused' recognised "the role of patients as active participants in the process of securing appropriate, effective, safe and responsive healthcare" (p7).

The theme that underpinned the work by Coulter & Ellins was 'engagement'. Coulter & Ellins (2006) outlined evidence to illustrate that those patients who

'engaged' with the health service and their treatment utilised the health services more appropriately and cost effectively and, more importantly, had better health outcomes. It was these benefits of engagement that were central to the Wanless Treasury Report (2002) which looked at various funding scenarios of the future NHS based on the level of patient engagement that could be obtained. The ideal funding scenario, that which had best outcomes and best cost effectiveness, would only occur if there was a full level of patient engagement. Interestingly, Wanless also considered engagement as an "active partnership between those who provide care and those who receive it" (p115).

Therefore, the body of work by Coulter & Ellins, and the work by Wanless illustrated the following:

- There was a difference in perceived quality of care between those who were 'engaged' and those who were not
- There was a difference in health outcomes among those who were 'engaged' and those who were not
- The concept of 'activeness' was central to whether 'engagement' was present

My study was not designed to measure health outcomes. However, it did suggest evidence in relation to the other two points of engagement cited above. Specifically, there was evidence in my study suggesting socioeconomic differences in the perceived quality of care and there appeared to be a greater level at which women from the least deprived group were active or involved in their care. What was fundamentally important was that, as both case groups accessed the service in a similar fashion, this level of involvement did not seem to be related to access or use of the antenatal service. Therefore, I considered that the level of 'engagement'

between the two groups may be a factor in explaining the perceived difference in the antenatal experience of both socioeconomic groups. As such, the concept of engagement was used to underpin the fifth and sixth stages of analysis. In the following chapter the concept of engagement is explored in more detail to illustrate the specific components used to underpin the substantive analysis of my data.

## **6.6 Concluding the Preliminary Analysis**

This chapter has covered four main stages of analysis: the a priori coding of categorical data; the ordering of qualitative data; the preliminary analysis of qualitative data; and the development of a theoretical proposition in which to underpin a substantive analysis. The first stage indicated that younger, deprived women were less likely to take part in my research which largely contributed to the two sample groups being more similar than would be expected in terms of age and education. However, in key areas of employment (and therefore income), housing and area based deprivation indicators, the sample groups were representative of the extremes of deprivation as determined by the 2006 SIMD. This difference in socioeconomic background between the sample groups, and the similarity of antenatal process, ensured that the third stage of analysis, the comparison of qualitative results, had an appropriate basis on which to answer my research questions.

The qualitative analysis reviewed important stages in pregnancy from first NHS contact through to the final trimester. The key findings that emerged from the analysis provided a picture of how women from both socioeconomic groups perceived their antenatal care. These findings will be explored in chapter eight. The qualitative analysis also showed that, in relation to the sample groups, women from socioeconomically deprived areas accessed the service in concordance with

women from the more affluent areas. However, there was much less concordance in the way the case groups perceived their antenatal care. The difference appeared to relate to the presence of engagement and this will be explored in the following chapter.

## **CHAPTER 7 SUBSTANTIVE ANALYSIS: ENGAGEMENT**

### **7.1 Introduction**

The preliminary analysis led to the development of the theoretical proposition of engagement. Before this theoretical proposition could be used to underpin the substantive embedded analysis within and across case tails (as discussed in section 4.9 and section 5.7) the theme of engagement had to be refined into a set of coherent analytical codes. The importance of refining themes was identified by Ryan & Bernard (2003) and Miles & Huberman (1994). They considered that initial themes are often abstract and are generally subject to a process of inductive coding, usually through close reading of the texts and through relevant literature reviews. Once these analytical codes have been refined they can then be used to analyse the data. As such, the substantive analysis had three distinct phases: to develop analytical codes that encompassed the concept of engagement; to use these analytical codes to undertake literal and theoretical replication analysis within each case group to establish case group similarities and differences (stage five of the data analysis); and to undertake literal and theoretical replication analysis across case groups to establish if there were similarities and differences in terms of engagement between these case groups (stage six of the data analysis). This process is detailed below.

### **7.2 Development of Analytical Codes of Engagement**

Engagement was a word that featured prominently in published policy and strategy documents and in published research. It was also a word fraught with ambiguity. The challenge of developing robust analytical codes is explored below and the resulting codes, synthesised from the literature review, are outlined in section 7.2.2.

### **7.2.1 Methodological Challenges**

Engagement was a theme central to the Wanless Report (2002). Wanless projected how the NHS might look in 2022 based on the level of engagement with the health service. However, Wanless never explicitly defined what he meant by engagement other than it would require an “active partnership between those who provide care and those who receive it” (p115). Wanless also never explicitly stated how engagement would be measured other than in societal terms of long term health outcomes and a change in the responsiveness of the NHS. It would appear that the NHS would know patients were engaged because the NHS would perform better and patients would have better life expectancy and health status.

Similar ambiguity was noted in the antenatally relevant policy approach to engagement found in the Scottish Government Action Plan: Better Health, Better Care (2007). The action plan stated that “we need to strengthen antenatal care so that we get better engagement with families who are at higher risk of poor outcomes” (p28). But again, the Scottish Government failed to outline a definition of ‘engagement’, or state how ‘better engagement’ would be measured. There was also a lack of clarity noted in terms of equating ‘engagement’ with ‘access’ or use of services. For example, the Scottish Government linked the recommendation for ‘better engagement’ with the recommendation to pay “particular attention to the needs of teenage mothers who have traditionally started antenatal support later” (p28).

Therefore a possible inference from contemporary policy is that the definition of engagement is unclear and that the term can often be considered to equate to access. This lack of clarity can extend to research. For example, an evaluation of a Sure Start scheme in England (a UK wide initiative designed to tackle child poverty

and social exclusion) looked at 'patterns of engagement' with specific services (Northrop, Pittam and Caan 2008). In this study, 67 families with at least one child were offered the chance to participate in a Sure Start initiative (although no demographic data was collected for fear of being intrusive). The results appeared to present three measures of engagement: *contact*, which considered engagement as a product of first contact; *access*, which appeared to measure engagement in terms of accessibility; and *use*, which appeared to measure engagement in terms of those who used the service.

Measuring 'engagement' in terms of contact, access and use may have the effect of narrowing the focus of the term. For example, Northrop, Pittam and Caan (2008) state that "in families initially engaged by a health visitor the person who used the most types of service accessed a mean of 11.17 different services, compared to a mean of 7.17 for families whose initial gateway to sure start was a midwife" (p26). Here 'engagement' is reduced to a term that indicates initial use of the service. This type of result would be beneficial if access and use of services required to be monitored but numerical monitoring of attendance and uptake adds little detail to understanding the reasons families choose to access services or what value they obtain from them. The distinction may be important as the preliminary analysis from my study suggests that access and use may not necessarily be indicators by which to gauge effectiveness or meaningfulness of services.

Arguably, the association of engagement with 'use' or access of a service reduces the concept to a largely passive process evidenced by 'turning up'. Yet a basic review of standard dictionary definitions indicates that the term 'engagement' is defined as a more dynamic concept that moves beyond the one dimensional process of access. For example, Merriam Webster (2008) considers engagement (or more accurately 'engage') to mean to involve or hold the attention of; Oxford

Online (2009) considers engage to mean to attract or involve someone's interest or attention; and Cambridge Online (2009) considers engage to mean to interest someone in something and keep them thinking about it.

Therefore, to refine the concept of engagement for analytical purposes, it was necessary to focus on large analyses and systematic reviews that synthesised a number of studies where engagement was a central theme. This would offer a depth and consistency across the findings that could expand the dimensions of engagement. The outcome would be identifiable themes, or codes, which could underpin a substantive analysis.

### **7.2.2 Literature Review & the Analytical Codes of Engagement**

To refine analytical codes for engagement, a literature review was undertaken (Ryan & Bernard 2003, Miles & Huberman 1994). Databases were searched for research literature, particularly reviews, published within the last ten years. Engagement was used as a key search term and both UK and international literature was reviewed. It was recognised that much of the work on engagement refers to 'patients' and this is a term not generally associated with pregnant women. Therefore, where possible, antenatal research was included though there is not an extensive literature in this area.

Three analytical codes emerged: language and personalisation; power and relationships; and health literacy. The literature and the reasoning underpinning each of these codes are explored below.



### **7.2.2.1 Language and Personalisation**

Coulter & Ellins (2006) undertook an international evidence review of English language literature published between 1998 and 2006. Studies were included based on a hierarchy of evidence classification with priority given to systematic reviews, randomised trials and evidence reviews. A detailed search strategy was included in the review. Coulter (2006) also reviewed the findings from two consecutive annual surveys undertaken in six English speaking countries including the UK in 2004 and 2005. In both reviews, considerable emphasis was placed on care that was 'patient-centred' i.e. there had to be evidence that individuals played a distinct role in their own health care. In a patient centred or 'engaged' scenario an individual experienced a supportive, communicative relationship from health professionals that took patients views into account and assisted and empowered patients to become involved in their own care. Both reviews (Coulter & Ellins 2006, Coulter 2006) suggested that engagement is not a passive process; it doesn't happen 'to' somebody but 'with' them and to be 'engaged' requires a perception of being part of the process, of being involved.

A systematic review by Griffin et al (2004) looked at over twenty thousand initial reports focusing on interventions designed to alter the interaction between patients and practitioners. Only 35 studies made it through their inclusion criteria. An increased level of patient involvement, or as they termed 'activation', was one of the main outcome measures and was associated with improved health outcomes in 15 out of 17 trials in which it was measured. The improvement was significant in nine of the studies. It was suggested that the key to enhanced patient activation was pre-consultation communication that included a two-way exchange of information and consultations that included skilled communication and provision of information.

Patient activation was also the focus of a research brief using data from over 13,500 people collected during the 2007 American Household Survey (Hibbard & Cunningham 2008). In this review, activation referred to a willingness to take on the role of managing personal health and health care. The authors identified four levels of activation: the lowest level equated to passiveness in care and only at the fourth level did people have the desired confidence to adopt health enhancing behaviours. It was noted that less than half of all adults in the US were at the highest level of activation which was also associated with higher income. Importantly, highly activated individuals were more likely to obtain preventative care and exhibit health maintaining behaviours. Furthermore, personalised or individual support from health professionals enhanced activeness and engagement.

Coulter, Parsons & Askham (2008) undertook a meta-synthesis of 120 systematic reviews published since 1998. These authors identified gaps in the evidence base but considered the synthesised evidence sufficiently robust for the following conclusions: those with lower levels of income or education were less confident about becoming involved in their care; and fostering a culture of partnership with the patient needed an understanding and ability to respond to each patient's personal perspective. The preliminary analysis in my study did suggest a socioeconomic difference in the level of involvement based on the language used by individual cases (section 6.5.1). There was also antenatal evidence for a lack of personalisation in other published research such as that by Stapleton et al (2002) which indicated a generic 'packaged response' by midwives in the provision of antenatal information.

Therefore, in terms of this first analytical code, the literature review pointed to specific aspects of language that could evidence engagement. Wetherell, Taylor &

Yates (2001), hypothesised that language use is an interaction responsive to the system in which it takes place. Within this system they suggest there are certain components that are fundamental. For example, the system is not static and as such, language is not a neutral information carrying vehicle, but instead is constitutive, in that it adapts to this changing system. Wetherell, Taylor & Yates also consider that the ability to 'adapt' to this system may be more limited in certain groups (such as the socioeconomically deprived). In their approach, the language user is not always seen as a free agent but one who is constrained by 'power and resistance, contests and struggles'.

In my data there were likely to be recognisable indicators of involvement, personalisation and adaptability to the process represented in the language a case used to describe their antenatal experience. Specifically, for engagement to be present, language markers would need to extend beyond a superficial level of describing antenatal care as 'good' to a description that evidenced an active involvement in the process. I considered these markers to be: *personalisation*; *active involvement*; *understanding* of the process; and *adaptability* to the system. These aspects became the sub codes encompassed under the first analytical code of Language and Personalisation.

#### **7.2.2.2 Power and Relationships**

The meta-synthesis by Coulter, Parsons & Askham (2008) concluded that the roles between patients and professionals were important in the development of engagement. Specifically, they concluded that recognising the role of patients and, where required, seeking to strengthen it was fundamental to securing a more patient centred approach (Coulter, Parsons & Askham 2008). However, their analysis also suggested that cultural perceptions which aligned professionals to a

more powerful role, coupled with traditional paternalistic practices and styles, continued to undermine patients' confidence to become more involved.

Other role and power related barriers to engagement were noted in a meta-synthesis by Edwards, Davies & Edwards (2009). This analysis of qualitative papers focused on three themes: information exchange, decision making and external influences. The authors did acknowledge that the topic area was not well defined and there was a narrow range of literature available. Therefore, from 135 papers that met the initial criteria for review, only seven papers were included. The conclusions reached were that patients could be apprehensive about challenging [perceived] professional knowledge. Where patients sought external information, such as from the internet, an open discussion about this was regulated both by the patient controlling the exchange of information and by the professionals behaviour such as rejection or dismissal.

In some cases, external information was not sought as it was seen to be the professionals' role to provide information (Edwards, Davies & Edwards 2009). The problem with this approach was noted in a systematic review by Legare et al (2008). In a review of 1130 international papers reporting on professionals perceptions about shared decision making, 38 papers were reviewed. The results suggested that based on perceived characteristics, a receptiveness to perceived knowledge of their patients, or the complexity of the clinical situation, health professionals screen patients 'a priori' to determine who they will encourage to become actively involved.

An antenatal example of the influence of roles and power is found in the structured review by Rowe et al (2002). The authors reviewed studies on the effectiveness of interventions designed to improve communication within antenatal care. The overall

number of studies was small and they tended to provide information about few aspects of care (Rowe et al 2002). As a result, only 11 papers, from 95 potentially eligible studies, were included. The researchers noted that there were 'power differentials' between antenatal women and the health professionals which tended to result in client compliance and conformity to the normative choice of care. This was supported by two more recent antenatal qualitative studies (Svensson 2006, McCourt 2006). Specifically, the study by McCourt (2006) noted an 'expert-audience' nature of hospital based antenatal consultations from as early as the first booking visit.

Based on a randomised trial by Beeber et al (2007) which looked at engagement in low income mothers, it was suggested that a power imbalance would impede the development of engagement. The authors found that engagement related to the ability of professionals to form 'interpersonal relationships' with their clients and on the strategies they used to support these clients. To develop and sustain engagement professionals needed to use strategies that related to the perceived role between them and their client through aspects such as a natural approach, empathy, social conversation and physical touch.

The suggestion is that the perceived relationship between the care provider and the care receiver is of fundamental importance to engagement. Specifically, the literature points to aspects of the client – professional relationship and the professional approach as providing markers to explore the qualitative data. These aspects include: the perceived '*equality*' between midwife and case where there is no imbalance in the perceived 'power' of the professional service; the recognition and acknowledgement of *prior knowledge*; the case perceiving a social or relationship building aspect to the consultations; and a feeling of a *relaxed*

*approach*. These aspects became the sub codes encompassed under the second analytical code of Power and Relationships.

### **7.2.2.3 Health Literacy**

A further aspect of engagement that emerged from the literature was health literacy. Coulter & Ellins (2006) in the evidence review cited above, considered that it was the environment of health literacy that was “fundamental to patient engagement” (p21). Specifically, health literacy was the ‘foundation for active and informed involvement’ and if it was not present then individuals would lack the capacity to “obtain, process and understand basic health information...or make appropriate health decisions” (p21).

Health literacy is defined as “the ability to make sound health decisions in the context of everyday life” (Kickbusch 2008 p101). Kickbusch considered that the context for health literacy extends from the home to the health care system and the political arena. Jochelson (2007) in a research review which aimed to update thinking in relation to health literacy, considered the concept reached far beyond basic aspects of literacy such as reading and writing to encompass a set of functional and conceptual skills which included the ability to “seek out, understand, evaluate and use health information to make informed choices” (Jochelson 2007 p5). Jochelson also stated that health literacy includes an individuals’ knowledge about the working of the health care system and could be considered the ‘bridge’ between individuals and their health care contexts (Jochelson 2007).

The meta-synthesis by Coulter, Parsons & Askham (2008) focused on health literacy particularly in terms of promoting engagement. Specifically, Coulter, Parsons & Askham (2008) pointed to the importance of tailoring information to

individual need in order to reinforce normatively relevant information. They also highlighted the importance of communication, particularly as they noted that information needs often changed during the course of treatment. Effective communication techniques were necessary in order to empower patients to be more active in their own care and participate in shared decision making (Coulter, Parsons & Askham 2008).

An earlier synthesis of 26 national patient surveys undertaken by Richards & Coulter (2007) also identified specific aspects of care that were important to patients. In addition to effective treatment, value was placed on factors that could support a level of shared decision making. These included the level of involvement in their care; the level of respectful and empathetic emotional support; and the level of effective communication, information and advice that could underpin involvement in decisions. Some of these factors were shown to be lacking in a recent maternity related study (Furber & Thompson 2008) which found that midwives may communicate in a way that directs their clients to pre-determined decisions.

Health literacy was emerging as a fundamental aspect in terms of engagement. However, there was an important distinction between health literacy and the other codes already discussed: health literacy itself did not illustrate the presence of engagement but instead encompassed factors whose presence enhanced the potential for engagement. In other words, what health literacy indicated was the environment that underpinned whether engagement could reasonably occur within specific cases and how well an individual case would function within the health care system.

Coulter & Ellins (2006) outlined some of the factors that could underpin health literacy. They included reading, comprehending and evaluating health information;

verbal communication with health professionals and the ability to participate in health decision making. For the environment to be right for shared decision making there needed to be a partnership between the expert knowledge held by the health professional and the personal knowledge of social circumstances, values, attitudes etc held by the patient. The relevance of this professional awareness of social circumstances was particularly important to my study as there was published evidence to link low levels of health literacy to low socioeconomic status (Andrus & Roth 2002; Sihota & Lennard 2004). There were also suggestions from my preliminary analysis (section 6.4.2) that the perceived value of some aspects of antenatal care was less than normatively intended.

Based on the literature cited above, I considered there were three main components that could illustrate the case level of health literacy: *utility of information; communication; and shared decision making*. These components were considered necessary precursors for engagement (Coulter & Ellins 2006) and became the sub codes encompassed under the third analytical code of 'Health Literacy'.

The three analytical codes and their sub components are illustrated in figure 16.



**Figure 16 Substantive Analysis Codes**

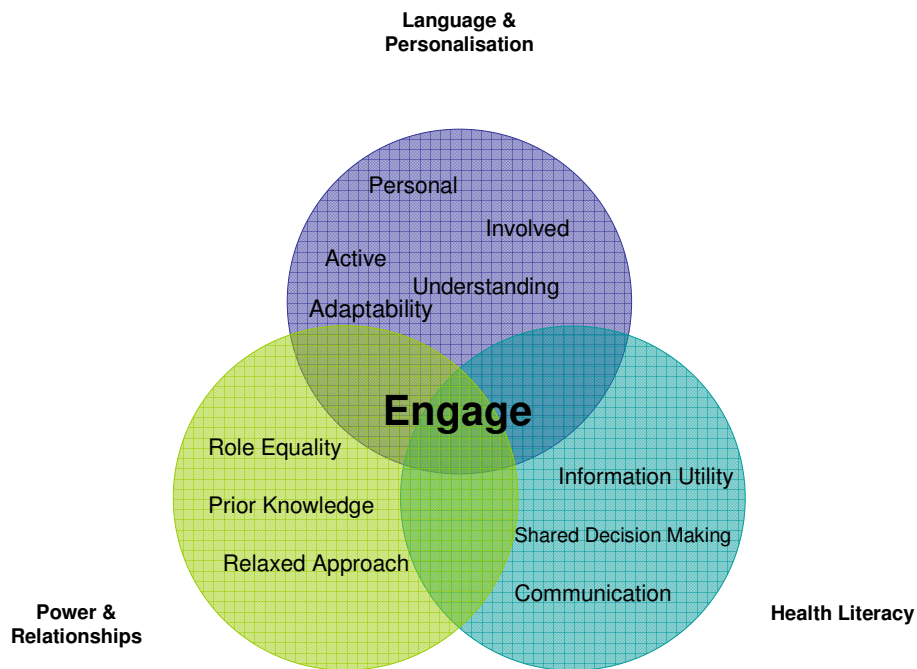


Figure 16 illustrates that, despite the ambiguity of 'engagement' inherent in the literature discussed above, there were sufficiently cohesive aspects of engagement that could be distilled to facilitate a substantive analysis of data. It also reflects the degree of overlap between each code. For example, communication, which is included within the code of health literacy, also underpins each of the other codes. As such, there is a degree of artificial restriction within each code.

### **7.2.3. Potential Data Limitations**

Before detailing the analysis, potential limitations are considered. The dataset is small with nine sets of complete data from the least deprived case group and 8 complete and 4 incomplete sets of data from the most deprived case group. As

discussed in chapter 4 section 4.5.2, in replication analysis, these numbers may be considered sufficient in case study methodology to demonstrate the required level of replication for analytical or theoretical generalisation (Yin 2003). Furthermore, as discussed in section 4.11, Yin (2003) also considered that small number samples should not necessarily be an issue in case study research as any data replication may be a basis for analytical generalisation. However, in my sample, the sample size is compounded in relation to the embedded analysis of subsets of data. Therefore, overall, the case numbers are too small to be able to draw substantive conclusions.

A further limitation related to the emergence of the theme of 'engagement' during the preliminary analysis. The substantive analysis occurred after the completion of the data collection and, as such, I was retrospectively exploring the data for evidence of engagement rather than being able to adapt my data collection to gather prospective evidence. The outcome of this is that there may be less evidence to be found in relation to some of the analytical codes developed from the literature. This was particularly evident with the second analytical code of 'power and relationships' as, with hindsight, the questions were not designed to elicit such specific information.

### **7.3 The Substantive Embedded Replication Analysis**

The following sections detail the substantive replication analysis, illustrating first the 'within case' replication analysis under each specific code (stage five of the analysis). As outlined in chapter five, each case is analysed and compared against all other cases within the case group. Key demographic variables (previously detailed in chapter 6, section 6.2.5) were explored that could potentially have influencing or modifying properties. In each case group, case similarities and

anomalies are highlighted along with case summaries which help the exploration of these anomalies. An 'across group' replication analysis is then detailed (stage six of the data analysis), highlighting areas of similarity and difference. Finally, an 'across code' analytical summary of all three codes is provided. The analysis was completed using Nvivo7 software and, as in chapter 6, selected quotes have been used. In all cases, Nvivo7 references have been shown.

#### **7.4 Language & Personalisation**

The analysis of language and personalisation focused on specific aspects of language in the data. These aspects were outlined in section 7.2.2 as: the level of personalisation of care; the level of being involved and active in their care; the level of understanding of their own antenatal process; and evidence of the ability to 'adapt' or respond to the antenatal system.

##### **7.4.1 Language & Personalisation in the Least Deprived Group**

There were six cases from the least deprived case group (LD1, LD3, LD4, LD5, LD6, and LD9) who described evidence of engagement in terms of personalisation at least as far as the first trimester. For example:

“The midwife, sure the midwife had said to me if you're ever, if there's anything you're ever worried about they gave me those two numbers and it was like they really meant it if you know what I mean, they were like it doesn't matter what time of night, just phone, there's always going to be somebody at the other end of the phone” (LD3 Reference 10)

There was a less personalised and more detached perception evident in the data from two cases (LD2 and LD7). For example:

“So I completed most of the health information so it was really just a case of the student midwife checking that everything was complete, past medical

history that sort of thing. My height and weight, domestic violence questionnaire, social background, smoking, alcohol that sort of thing but I think it would have been longer if I hadn't done all this before hand" (LD7 Reference 6)

LD2 did describe a more positive perception of the age appropriate antenatal input with a slight degree of personalisation in the use of 'with' rather than 'to':

"It has been really helpful. Folk have been really good with me" (LD2 Reference 4)

One case (LD8) was more fluctuating in terms of both sub codes of personalisation and understanding and provided evidence that generally positive statements were not necessarily indicative of engagement. This is illustrated by the following comments:

"The ladies have been really nice. Everyone I've spoke to has been really nice" (LD8 Reference 13)

"Well yea definitely I mean I guess, the woman that we spoke to, she was going on about you know about protein in your urine or whatever and all this stuff and I just didn't have a clue what you're talking about. It is all very, I know they must do it all the time" (LD8 Reference 14)

A level of active involvement was evidenced in six cases (LD1, LD3, LD4, LD5, LD6, and LD9). For example:

"Like hypnotherapy and things like that, you know the things that were available to you, that's really interesting so I've put my name down for some of that" (LD1 Reference 5)

However, like the previous sub code, three cases in this group (LD2, LD7 and LD8) showed evidence for a lack of engagement. Specifically, LD2 and LD8 lacked knowledge of certain aspects of their care although LD8 seemed to consider this as inaction on her part:

“But I kind of felt at the process there was lots of things I wanted to ask and I didn’t want to bother anybody or bother the midwives or anything cos after being up at the hospital they were really, really busy you know so I don’t know yea it was good. I mean I didn’t come out any different from when I went in I suppose” (LD8 Reference 7)

In keeping with the findings regarding personalisation, LD7 appeared to detach herself from an overly active role in the midwifery component of her antenatal care:

“Although I suppose the midwife taking information, the few bits of my medical history we did go over, she didn’t really know what that meant so, the midwife part maybe wasn’t really that useful going over it again, perhaps anything medical the consultant needs to you know take the time with me” (LD7 Reference 11)

In relation to language being adaptable to or constrained by the system in which it occurs, there was evidence in the data that several cases in this case group had positive perceptions of being part of, or supported by, a functioning system (LD1, LD3, LD5, LD6, LD9). For example:

“I’ve not been ill or anything. I’m sure if I had been then there would have been the support system there. I’ve got the phone numbers to phone if you’re worried about anything or – the support system seems to be great for it” (LD1 Reference 11).

However, within the data, there was also evidence of a more constrained and less integrated approach to the antenatal system:

“Cos I didn’t know I was supposed to fill it out or anything so when I went up to the hospital on the Sunday the woman was like, you’ve not filled any of this in. I said I didn’t know I was supposed to so I must have missed that piece of information” (LD8 Reference 6)

There was a suggestion, across the sub codes, that there was a weakening of engagement towards the end of pregnancy in cases that appeared previously

engaged. This may have related to some cases being more aware of their own needs in the later stages of pregnancy and a realisation that certain aspects of care were not as personalised as they initially perceived:

“I thought maybe they would talk to you more about things like for example in my notes I’ve got like a labour plan and stuff like that and I wonder what stage they would start to talk about this” (LD4 Reference 1 Interview 2)

Therefore, in terms of identifiable language markers of personalisation of care, understanding, active involvement, and adaptability to the antenatal system, there were data to suggest engagement, at least as far as the first trimester, in six cases and no data to suggest engagement in three cases. Of the six ‘engaged’ cases (LD1, LD3, LD4, LD5, LD6, and LD9) each was comparable in terms of the categorical variables of deprivation status, planned pregnancy, age above 29 years, housing tenure and non-smoking status. A case summary is shown below in relation to one of the six engaged cases.

### **Case Summary LD1**

LD1 was a 30yr old married woman with a postgraduate qualification and living in detached owner occupied housing, in a satellite town ten minutes from the main urban town. She resided in deprivation decile 9 and the area was one of detachment from an urban setting with tree planting, traffic calming and an obvious feeling of being near open spaces. She attended all clinical appointments and attended all antenatal education classes with her partner. She also attended hypnobirthing and physiotherapy classes. She was talkative during interviews.

Initially this case described a feeling of 'nobody touching you' in relation to early pregnancy (before first scan) (reference 2). This suggested a feeling that some clinical input was expected initially. However, by completion of first trimester there was considerable use of actively involved words such as interesting, explaining, understanding (reference 3, 4, 5). Also used 'we' to describe access to services such as birthing pool indicating a feeling of personalisation regarding available services (reference 6). In the final trimester the case was still describing a positive feeling about midwifery input (reference 1, 3, 4) and still using personalisation – 'my regular midwife' 'your acupuncture' and 'your massage' (reference 2, 11). The case used the phrase 'support system' twice (reference 12) indicating a level of connection to the service and a belief that the system was there for her should she need it.

Within the 'engaged' cases, LD5 was distinct in terms of not being married and having no post secondary school educational qualifications. This suggested that marital status and higher educational levels may be less influential in terms of engagement in this group and that the variables of deprivation status based on area of residence, age over 29 years, housing tenure and non-smoking status may have had some influencing role in terms of engagement. However, the case summaries of the three non-engaged cases suggest this may not be the case. One of these case summaries is shown below:

### **Case Summary LD2**

LD2 was an unmarried 17 year old, who resided with her parents in an area within the second lowest deprivation decile. She lived in a detached property, worked as a hairdresser and was the only one of the case group to smoke. She had no post secondary school education and her pregnancy was unplanned. She attended all clinical antenatal appointments and also attended 'Threads' an antenatal education service for young women run jointly by the NHS and Barnardos. She did not access any non-generic antenatal services. She completed both antenatal interviews but each time she was quiet and unexpansive in terms of her responses to questions.

At the end of the first trimester there was no evidence of personalisation of antenatal care and no use of active or involving words. If anything there was some evidence of separation based language such as 'everything's been fine with *them*' (reference 1). Another way the lack of involvement was reflected was in a lack of awareness of what to expect such as 'I don't know' or 'they never mentioned that' (reference 2, 3). By the final trimester there was some evidence of positive language used. For example, 'folk have been really good with me' (reference 4). Generally this seemed to relate to the structured age appropriate educational input and not the clinical aspects with which she remained detached. This was noted in comments such as 'in ten minutes and you're out' (reference 2) and 'any more visits and I would have to drag myself down' (reference 5).

The case summaries illustrate that one case (LD2) was under 20yrs of age, smoked, did not own her own house, was unmarried, had not planned her pregnancy and had no post secondary education. The other two cases (LD7 and LD8) were married, non smokers, had university level education, planned their pregnancy and owned their own house. LD8 was also aged over 29. Therefore, based on the engaged and non engaged case demographics, the variables of deprivation status, education level, housing tenure, age above 29 years, planned pregnancy and marital status didn't provide evidence in the least deprived case group that suggested they may be influencing factors to support engagement.

Three variables, age 26 or under (in terms of LD2 and LD7), smoker and housing tenure (in terms of LD2) may have provided some evidence that they were potentially negative influencers of engagement. However, LD2 was atypical of this



case group in a number of variables and in LD7 there was a further factor that may have acted as a negative influence: prior knowledge. LD7 was a medical professional who had worked as a clinician within the antenatal service. As such, she would likely have had a higher than average knowledge of both the antenatal system and the process of pregnancy and her perceived needs at the outset were primarily for reassurance. As such both LD2 and LD7 had a degree of predictability about their lack of 'fit' in a standardised antenatal service.

LD8 was the one case that seemed unique in this case group. Based on the group demographic attributes this case was similar to the six cases who did engage with the service. For example she presented as talkative, which was common for all 'engaged' cases (except LD9) and she was also similar in terms of age, accommodation and housing tenure. She also had university level qualifications. As such there may have been an expectation that this case would engage with the service. However, she showed little evidence to suggest engagement and her language and personalisation were contradictory from the outset. There were certainly barriers in this case (related to poor communication between antenatal staff and poor communication from staff to case) that prevented engagement in the later stages but these were not present in the first trimester. As such, there was no clear explanation for a lack of engagement in the first trimester although there was evidence of a level of case anxiety that may have made communication more difficult. This was not picked up by the midwifery service and the result was that aspects of care may not have been as effective as they could have been.

As stated earlier, the small number of case studies limits substantive conclusions. There may also be relevant variables, such as attitudes and cultural issues where data was not collected. From the available evidence, six cases from the higher socioeconomic group engaged with the antenatal service though the level of

engagement may have been more evident in the first trimester than the third. Three cases did not engage. Being atypical of the case group in a number of factors and prior medical experience may have explained the non-engagement of two of the least deprived case group. The third 'non-engaged' case remained unexplained.

#### **7.4.2 Language & Personalisation in the Most Deprived Group**

In the most deprived case group there appeared to be a perception in most cases that antenatal care was considered positively. For example:

“She was very informative” (MD3 Reference 6)

“They were very professional” (MD7 Reference 14)

However, with respect to the sub code of personalisation, only one case (MD11) demonstrated evidence of personalisation of care:

“I got my booklet, my notes and we went through any matters” (MD11 Reference 1)

None of the remaining eleven cases, including those who expressed positive general perceptions, demonstrated a level of personalisation in their care:

“She was very helpful but I can’t remember what I got from it now” (MD3 Reference 7)

Similarly, in a number of cases there was a lack of understanding of the antenatal process women would follow:

“I wasn’t really sure. I thought maybe antenatal care you’d be seen more regularly and I thought that, it’s less really than I thought antenatal care” (MD12 Reference 10)

In terms of the level of involvement, only one case (MD11) showed evidence of being actively involved in the process:

“She just explained the whole process and she offered me the options of the CMU or the Consultant led unit and explained them in detail and just again we talked through any of my anxieties” (MD11 Reference 2)

However, in this case there was also evidence that the level of involvement was somewhat tempered:

“Yea probably because if I don't know something I'll go and find it out myself, like when the nausea was really bad and I nearly did phone up on the Wednesday before my appointment and I thought I'll just wait till tomorrow and that's when I spoke to the midwife the next day” (MD11 Reference 11)

There was little evidence in the data that suggested any other most deprived case perceived they were active participants in their own care:

“With it being my first I don't really know what to expect. You know, all I know is that I'm due another scan in not very long and that I think then after that a two week appointments with the doctor myself and I don't really know to be honest. There is one thing though that I think there was something in my pregnancy record book that said about I don't know if it was the visit to the maternity unit which should be done at 12 weeks but obviously I haven't done that and I don't know when that, I mean I'm just going to basically ask them when I went for my scan” (MD4 Reference 7)

With regard to language being adaptable to or constrained by the system in which it occurs, one case (MD3) did show some weak evidence of being part of a functioning system:

“She gave me a bit or reassurance I think that there was maybe people behind me” (MD3 Reference 9)

However for the majority of the case group, there was evidence in the data suggesting a more constrained role within the antenatal system. This evidence seemed to relate both to the cases feeling they were not getting all that was available from their antenatal care and the antenatal system 'failing' in some respects:

"I didn't think too much about it but when I went up to the hospital it was a different midwife I was seeing and she had asked me what had happened. Did you get this, did you get that and I said no and she went, her reaction was kind of you'll be thinking I'm doing everything today so I think she was a bit surprised" (MD6 Reference 4)

"I think my expectations were far too high so if they weren't as high then it would have been fine probably that would have been normal or if I had been through this before but because this is the first and I didn't know what to expect I was quite disappointed" (MD9 Reference 17)

This feeling of disappointment may have been an inhibiting factor for engagement. For example, one case (MD9) provided evidence that the initial care followed a standard pattern that did not meet personalised needs and left her feeling unsettled:

"I don't know if I was expecting too much...I actually came home and phoned my mum...I'm like the only body that really knows I'm pregnant is me and even at that I was starting to doubt myself....it was horrible, it was a horrible feeling" (MD9 Reference 3/4)

Therefore, in terms of identifiable language markers of personalisation of care, understanding, active involvement, and adaptability to the antenatal system, there was little data to suggest engagement in eleven cases. In these cases, (MD1, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD12 and MD13), there was very little homogeneity in the demographic variables. For example, they had different ages, housing tenure, marital status, education level and occupational class. The only commonality noted in the collected data was their shared deprivation status based on area of residence. A case summary for MD9 is shown below:

### **Case Summary MD9**

MD9 was a 30 yr old married woman who resided in an owner occupied terraced house in a local authority housing estate. The property was in deprivation decile 2 in an urban setting about 5 minutes from the main urban town. There was a history of deprivation in this area due to long term unemployment. Parking was in defined areas not always close to houses - necessitating walks through narrow lanes. This case had an HND and worked as a civil servant. She attended all clinical appointments but did not attend any of the antenatal classes as she stated she had attended these previously with a friend. There was no evidence in the data that she used any other antenatal services. She presented as talkative during the interviews.

At the first trimester this case suggested a poor level of engagement from the first point of contact onwards. The first contact with the midwife was perceived as very quick at ten minutes (reference 8) and lacking in anything that would help confirm pregnancy and was therefore considered disappointing (reference 1). The provision of records was noted but overall the appointment was not what this case was expecting and left her with a 'horrible feeling' of nobody confirming pregnancy (reference 3, 4). The subsequent appointments were considered better with the appointments 'more relaxed' (reference 10), the midwife 'helpful' and 'providing more time to ask questions' (reference 6). Overall, at the end of the first trimester, this case described being disappointed with antenatal care (reference 17), with her confidence lacking until the scan had confirmed pregnancy (reference 15). The case considered that her expectation may have been far too high (reference 17). This situation persisted throughout pregnancy and at the final trimester this case still expressed a lack of engagement. There were periods when appointments were infrequent 'leaving you to ask yourself lost of questions' (reference 1). There were episodes where the case felt the midwives used too much jargon and also expected her to know more than she did (reference 3, 4). There was also evidence that aspects of written records were not explained (reference 4). The case related this aspect to specific midwives. One midwife was considered 'fantastic' because she took the time to explain everything but others left her with an impression that she was on a conveyer belt and the case was just a number and a procedure (reference 6, 7, 12). I asked the case what the difference between these midwives was and she felt it was because the more 'explaining' midwife gave the impression of being 'enthusiastic and 'loved her job' (reference 20, 21). In fact the case stated that 'it was as if she was happy that I was experiencing this' (reference 20). The case described herself as not shy at asking questions but was put off asking as she had the impression she was supposed to know what the midwives were talking about and she did not want to look stupid (reference 8). Overall, this case described her antenatal care as 'not what I expected' and stated she had got 'more advice from her friend' (reference 14).

In the most deprived case group there were data to suggest a certain level of engagement in one case (MD11). As such, in terms of the code of language and personalisation, this case was distinct within her case group. A case summary of MD11 is shown below:

### **Case Summary MD11**

MD11 was a 25 year old nurse who worked in the hospital under study. She was married and lived in owner occupied, flatted accommodation in the highest deprivation decile. Her pregnancy was planned. She attended all clinical appointments and both her and her partner attended all four antenatal classes. She also attended physiotherapy classes. She presented as talkative and thoughtful at her answers.

At the first trimester, this case presented some evidence of personalisation such as 'my booklet', 'my notes' (reference 1). She also described being 'quite happy' with her care (reference 10). There was also a report that one appointment was a waste of case time but she did know this would happen and was aware that this appointment was 'to help the staff' (reference 4). There was one episode where she describes 'nearly phoning' the midwives regarding a problem but in the end looked up some information and waited until next day to see the midwife (reference 11). This suggests that at the end of the first trimester this case would seek advice but still with some hesitation. At the final trimester, this case describes her care as 'being better' than she had expected (reference 6) although sometimes she leaves appointments thinking 'maybe I should have asked that' but 'she is quite good at reading up herself' (reference 3). There was also one episode where the case had a problem and felt able to phone the midwife for advice (reference 10) indicating a progression from the first trimester.

As can be seen from the case summary of MD11 and the data highlighted in chapter 6, MD11 was not unique within her case group in the majority of demographic variables. Indeed, she would not necessarily be considered as deprived in terms of some demographic variables. In her case group she was not the youngest or eldest, she was university educated as were three other cases, she owned her own house, as did seven other cases, she was married as were six other cases, her pregnancy was planned as it was in seven other cases and she was a non smoker as were ten other cases. The only compiled factor that differentiated MD11 from the remainder of her case group was the fact that she

was a health professional though she had never worked within the antenatal system other than for a brief period as a student. She was, however, familiar with the hospital involved in this study.

### **7.4.3 Case Group Code Comparison**

Although participant numbers were small, the analysis of language and personalisation has suggested that two thirds of the least deprived group engaged. Of the remaining third, there were potential explanations for two of the group failing to engage and, therefore, on balance, engagement was more evident than non engagement in the least deprived case group. In the most deprived case group there was evidence that one case, from a case group of twelve, may have engaged with the antenatal service. This suggested that non engagement was more likely in the most deprived case group. The level of engagement was an important distinction between case groups and raises the possibility that, as far as these case groups were concerned, women from different socioeconomic backgrounds may perceive their antenatal care differently.

The following sections explore potential influencing or modifying factors that may have underpinned the socioeconomic difference in perception. In doing so, it is acknowledged that analysis at sub group level (across all three codes) is likely to involve such small numbers as to make any conclusions very tentative.

#### **7.4.3.1 Age**

In the least deprived group only LD2 was under 20 years of age. LD7 was the second youngest at 26 years of age. As both these cases failed to engage with the antenatal service then there may be an argument for age being influential.

However, although LD2 did engage less with the generic antenatal service she did engage more with the age appropriate antenatal service. This may suggest that age is influential on some level in the least deprived group. However, in the most deprived group, age did not appear to be an influencing factor in its own right. Certainly the younger women in the most deprived group did not engage but neither did other women who spanned the age range up to 39 years of age. Across case groups, the two younger women (below 20yrs) who received age appropriate care did appear to engage with that part of the service. Therefore, although the numbers are small, there may be relevance in exploring the planning and delivery of care for younger women.

#### **7.4.3.2 Planned Pregnancy**

Across case groups there were five cases that had unplanned pregnancies: one in the least deprived group and four in the most deprived group. Overall, this is a small sample although none of these cases showed evidence of engagement. This lack of engagement may have suggested that an unplanned pregnancy could be indicative of failure to engage with the antenatal service. However, not all cases with a planned pregnancy engaged with the antenatal service. Therefore, overall, whilst unplanned pregnancy may be suggestive of a lack of engagement, a planned pregnancy was not necessarily influential to engagement.

#### **7.4.3.3 Housing Tenure**

Other than LD2, all women in the least deprived group owned their own house though two of these women (LD7 and LD8) did not engage with the antenatal service. Eight women in the most deprived group owned their own house with only one of these (MD11) demonstrating some level of engagement. Therefore, there



was no evidence to suggest that housing tenure in its own right was influential to engagement.

#### **7.4.3.4 Marital Status**

In the least deprived group, LD2 was unmarried. However so too was LD5 and this did not appear to influence or undermine engagement in that case. In the most deprived group, seven cases were married and five were not yet the majority of the case group did not engage with the antenatal service. Therefore, there was no evidence to suggest that marital status was influential to engagement.

#### **7.4.3.5 Smoking Status**

There were three self reported smokers. All of these cases were 20 years or under. However two other cases in that age group were non smokers. Those who did smoke were unmarried, had no post secondary qualifications and either rented or lived with parents. No smoker in this sample showed evidence of being engaged with the service although non smokers in the most deprived group also failed to engage. As the number of smokers in the sample was low it was difficult to draw clear conclusions. However, in this sample there appeared to be no relationship to engagement.

#### **7.4.3.6 Education Level**

In the least deprived group, only two cases did not have post secondary qualifications but only one of these failed to engage. The other two who failed to engage in this group had university level qualifications. In the most deprived group, three of the group had further education level qualifications and four of the group (including MD11) had university level qualifications with two of these having post

graduate level qualifications. Only one of these cases from the most deprived group could be considered as having engaged. Therefore, in my small number study, the evidence for educational attainment influencing engagement was weak. However, in the meta-synthesis by Coulter, Parsons & Askham (2008) higher education levels were suggestive of increased confidence about becoming involved in care.

#### **7.4.3.7 Prior Knowledge**

The number of health or medically qualified cases was very small therefore it is difficult to draw any conclusions. However, there was evidence in the least deprived group that LD7's medical occupation may have influenced the level of engagement with the service. There was also some evidence that the level of engagement with LD4 (a health professional) tailed off later in pregnancy. However, in the most deprived group MD11 was also a health professional and, of all the cases in this group, she showed the only evidence of engagement across the sub codes. Therefore, there was conflicting evidence that prior knowledge may have influenced engagement. As stated, the overall numbers within the sample were small. However the level of specific antenatal knowledge may be worth further consideration as, in my study, a high pre-existing knowledge of antenatal care may have mitigated against engagement.

#### **7.4.3.8 Deprivation Status based on Area of Residence**

Deprivation status was the only collated demographic factor shared by each member of the two case groups. In the least deprived group, where three of the cases failed to engage, it was reasonable to assume that deprivation status was not influential in this non engagement. Age and professional background may have

been indicative of non-engagement in two cases and the third case (LD8) failed to engage for unexplained reasons. However, the majority of the least deprived group did engage with the antenatal service. They shared five demographic commonalities: deprivation status based on area of residence, planned pregnancy, age above 29 years, housing tenure and non-smoking status. Importantly, as planned pregnancy, owner occupied housing and non smoking status could all be considered more likely in areas of low deprivation, there may be an argument that high socioeconomic status could be considered a predictor of engagement to some degree.

However, in the most deprived case group, where lack of engagement was a feature in almost all cases, the only commonality was deprivation status based on area of residence. No other demographic characteristic remained consistent across the most deprived cases. Therefore, there may be an argument that low socioeconomic status could be considered a predictor of lack of engagement. Furthermore, based on these two small sample groups, this predictive value seemed more pronounced within the most deprived case group leading to a tentative conclusion that socioeconomic background may be more influential on engagement in those from the most deprived backgrounds.

#### **7.4.3.9 Code Summary**

Engagement was considered in terms of the level of language of personalisation and active involvement evident in the way a case described their antenatal experience. My analysis reflected the research questions and, in particular, the issue of whether women from different socioeconomic backgrounds perceived their antenatal care differently. There was evidence that antenatal care provision was perceived differently in terms of the language used to describe the experience. The

difference was not specifically pronounced in terms of descriptive language and the use of positive terminology. Indeed, the common use of some positive language illustrated that both groups had the language skills to express a positive perception of care that, on a superficial level, seemed similar. Where the difference emerged was in relation to language suggesting how involved and responsive the women felt in their care and how personal their care felt to them. Measured in this way, the analysis suggested that more women in the least deprived group felt a personal connection to their care and described a level of involvement that extended beyond attending for appointments. However, all women bar one in the most deprived group did not describe this personal connection to their care and did not describe a level of involvement beyond attendance.

Deprivation status did not explain the entire picture of personalisation and involvement for the least deprived group but it was the only factor that linked all women in the most deprived group. Reflecting on Wetherell, Taylor & Yates (2001) arguments, the data illustrated here may reflect that those in the most deprived group are somehow less adaptable and responsive within the constraints of a structured antenatal system. As such, there may be an argument that women from the more deprived socioeconomic backgrounds could be more suited to a less rigid antenatal system. This 'fit' within the antenatal system will be explored in the discussion in chapter eight.

## **7.5 Power & Relationships**

The analysis of power and relationships focused on aspects of the data related to specific markers outlined in section 7.2.2. These were: the perceived 'equality' between midwife and case; evidence of the recognition and acknowledgement of

prior case knowledge; and the case perceiving a friendly, relaxed or relationship building aspect to the consultations.

### **7.5.1 Power & Relationships in the Least Deprived Group**

There was a mixed presentation in the data regarding women's perceived equality of roles with only 2 cases (LD5 and LD6) presenting evidence that supported engagement. For example, LD5 suggested she considered her own role as at least equal to that of the midwives in determining her care:

“I'm quite a strong enough person to say no this isn't what I want to do if I didn't want to do it so” (LD5 Reference 1)

She also expressed no hesitation in contacting the midwives if she felt it was required:

“If it was something that was worrying me I wouldn't give a second thought to phone the midwife uh huh” (LD5 Reference 5)

However, LD5 did seem to place greater emphasis on the role of the consultant in comparison to the midwife:

“He knows that children are born like that so he's probably a bit more informed” (LD5 Reference 4)

One case (LD6) expressed a perception of equality in terms of a conversational approach to aspects of the antenatal process:

“It was all about sitting talking and 'tell me what's on your mind' (LD6 Reference 2)

In the remaining seven cases there was no evidence of perceived equality in terms of the antenatal process. Evidence from one case (LD1) suggested that, despite the presence of patient held records, the content of the records was not necessarily seen as a shared process. For example, looking at records was almost viewed as an illicit or hurried act:

“You can have a wee quick look through it if you’re wanting. You’re not thinking what are they writing about me and I’m not seeing it” (LD 1 Reference 2/3)

Other cases described a certain level of anxiety in terms of having to contact the midwives particularly in relation to the perception that they would appear ‘silly’:

“I said to my husband I wish there was a helpline you could just phone, you’re not bothering anybody with really stupid questions like I don’t know whether I should colour my hair you know” (LD8 Reference 4)

In one case (LD7) the hesitation to contact the midwives may have related more to a perception that the information from medical staff would be more beneficial. This may also have suggested a perceived imbalance in the relationship in terms of equality – only in this example the case may have perceived the greater power (especially in terms of knowledge):

“Perhaps anything medical the consultant needs to you know take the time with me rather than [the midwife]” (LD7 Reference 3)

There was a mixed presentation in the data in relation to describing a friendly, relaxed approach. For example, only one case (LD6) described a relaxed approach to antenatal care that was not contradicted by other data:

“She was very normal, very down to earth, very practical, she was actually pregnant herself and that was like the first thing she said you know I’m actually pregnant myself and she teased me about the size of my boobs

and like I'll go like that myself, things like that. She was very natural" (LD6 Reference 1)

Other cases described a relaxed, friendly approach but this did not necessarily translate to influencing their interaction in other aspects of care:

"I don't know if it's just because like she was talking about other things as well like talking about when I got married and kind of holiday things and more like conversation" (LD4 Reference 4)

"I probably would feel I didn't want to phone them if it was just something" (LD4 Reference 4)

However, at the end of the second interview there was evidence that LD4 did feel confident to phone the midwives. She did, though, express some concern re the midwifery approach to antenatal education:

"It feels almost like being back at school and there's a teacher just like talking to you" (LD4 Reference 4)

LD8 was again an interesting case within this case group. She described a positive perception of the midwifery staff at times however this did not translate into a positive antenatal experience:

"But I mean the girls are lovely, the midwives are really nice to us" (LD8 Reference 4)

"My friend who is practically always, she's in so much contact with her midwives and she knows them all by first name and I think that's a good relationship especially for a first time you know expectant woman whereas sometimes I feel a wee bit in the dark about things" (LD8 Reference 5)

Recognition and acknowledgement of prior case knowledge was not evidenced in the data. In two cases, both health professionals, (LD4 and LD7) this may have had a negative impact:

“I know probably they do have certain things that they’ve got to say to you and go through with you but I feel, I mean I think it is necessary to tell you the things, I mean I’d read about it in the leaflets and things like that and I felt they didn’t need to go on about it quite so much” (LD4 Reference 1)

“Each time with the midwives before it kind of works into it that we are health professionals. It’s really incredibly basic” (LD7 Reference 1)

Therefore, across the identifiable engagement markers of perceived 'equality' between midwife and case; evidence of the recognition and acknowledgement of prior case knowledge; and the case perceiving a friendly, relaxed or relationship building aspect to the consultations there was some evidence to suggest a level of engagement in only two cases (LD5 and LD6). LD5 and LD6 were similar in terms of deprivation status, age and housing tenure but were not homogenous in terms of marital status or educational background. A case summary of LD6 is shown below.

#### **Case Summary LD6**

LD6 was a 34 yr old married woman who lived in a detached house in an affluent area in the main urban town. She resided in deprivation decile 10 which was one of the more well know areas of affluence within the main urban town. Properties were traditional with defined boundaries, gardens and driveways. This case had postgraduate level qualifications. She worked in a senior management position within the primary education sector. She attended all clinical appointments and attended all four antenatal education classes with her partner. She also attended physiotherapy classes. She was talkative and thoughtful during interviews.

At the first trimester there was a perception that this case felt an equality of roles evident in the use of the phrase ‘talking’ to describe the clinical consultation (reference 1, 2) and the shared concept of records in ‘we did the beginning of the notes’ (reference 2). In fact the case described ‘feeling sorry’ for the midwife on one occasion where the perception of record duplication was noted (reference 7). This case confidence persisted into the final trimester with evidence that she was willing to ask midwives to clarify what they had written in the notes (reference 1, 2, 3), clarify what they were saying during antenatal classes (reference 7, 8) and also that she ‘was responsible for her own health’ in relation to making specific appointments (reference 6). Therefore, there was evidence of engagement.



Four cases, (LD1, LD2, LD3 and LD9) presented a neutral picture in terms of engagement. These four cases had the same deprivation status but differed in terms of age, housing tenure, marital status and educational background. The neutral evidence may have reflected the data limitations discussed in section 7.2.3 in relation to there being insufficient evidence to indicate the presence or the lack of engagement. As such no specific conclusions could be drawn in relation to these cases. Three cases (LD4, LD7 and LD8) displayed evidence in the data that suggested a lack of engagement. Two of these cases also failed to engage in terms of the previous code. A case summary for LD7 is shown below.

#### **Case Summary LD7**

LD7 was a 26 year old medically qualified professional. She was married and lived with her husband in flatted gated accommodation in the lowest deprivation decile. She was university educated, did not smoke and her pregnancy was planned. She attended all clinical appointments and attended three out of four antenatal education classes (the last one was missed due to perceived low level of utility and anti-medical bias from some midwives). She attended two physiotherapy classes. This case was fairly quiet during both interviews and tended to answer questions without much expanse.

At the first trimester, there was some evidence of personalisation such as 'my notes' and 'my details' and being given an explanation of what to expect (reference 1, 3) but there was also a slightly detached feeling from this case (which may reflect a higher than average awareness of what to expect due to having previously worked in an antenatal clinic). This was noted in phrases such as 'I thought it would not be a long appointment', 'just to get me in the system' and 'pretty much as expected' (reference 2). The case also filled in her own medical aspects in the hand held records as advised to by the midwife (reference 5). The case did report that if she was not a health professional she 'could imagine it would have been very useful' (reference 13). At the final trimester there was evidence that there was a relaxed feeling about the appointments (reference 6). There was still evidence that the professional background of the case was impacting on engagement through comments indicating that she 'doesn't really get any more information from the midwives although she is sure she would if she asked for it' (reference 4). There was a perception that in some instances appointments were being attended simply because they were given rather than meeting any personal need (reference 7, 8).

Of the three non engaged cases (LD4, LD7 and LD8), there were demographic similarities in terms of age (a five year span), housing tenure and educational background. However, the two cases that did engage (LD5 and LD6) also shared a commonality in at least one of these demographics indicating that these particular demographic variables may not have been particularly influential in terms of engagement. Both LD4 and LD7 were qualified health professionals and, although limited in numbers, the available evidence suggested that their level of prior knowledge was not considered in terms of the delivery of their antenatal care. In both cases, evidence suggested that a generic approach, which failed to assess, or even acknowledge, pre-existing levels of knowledge and understanding may have worked against the development or sustainment of engagement. In common with the analysis of language and personalisation, the non engagement of LD8 remains difficult to explain.

In summary, there was insufficient evidence to reach any conclusions about engagement in four cases of the higher socioeconomic group. There was evidence to suggest that two cases did engage with the antenatal service and evidence to suggest that three cases did not. Of the non engaged cases, there may have been potential explanations for two failing to engage. The third remains unexplained.

### **7.5.2 Power & Relationships in the Most Deprived Group**

Generally, there was a consistent presentation in the data regarding women's perceived equality of roles. Only a minority of cases expressed any evidence that they felt confident in the relationship with midwives to seek help:

“They've got a 24 hour phone number and I've actually phoned that before”  
(MD3 Reference 4)

More often, there was an uncertainty and lack of confidence about contacting the midwife especially if this related to information that the case perceived she should know:

“I’m not shy you know but it’s questions that have been important to me that I need answers for that I have asked but as far as general, you kind of feel, you feel stupid sometimes asking because I feel as if they expected me to know it and I feel quite, I don’t want to look stupid if I ask this question because obviously I’m supposed to know the answer do you know” (MD9 Reference 4)

In one case (MD5) there was hesitation to contact the midwife in case she ‘felt stupid’ and also because she did not perceive they identified with her position:

“Uh hu but they just haven’t had any babies” (MD5 Reference 3)

With respect to the sub code related to the perception of a ‘relaxed approach’ there was only one case (MD11) who described a relaxed and informal approach that was not counteracted by other aspects of care:

“The whole thing I’m really impressed ...all the support that you seem to get because even like 2 weeks ago and I was in work and I was getting the pains and it was a UTI that I had but I think started kind of feeling unwell and I was feeling unwell at work and I phoned, I didn’t have a number for anyone so I phoned the community midwife unit and they put me through to the triage midwife .....I was impressed with that as well, like not being made to feel like an idiot” (MD11 Reference 3)

In the above quote there still appeared to be an inherent fear of being made to feel ‘stupid’ or ‘silly’. The remainder of the case group, even if they described a relaxed, informal approach did not provide any evidence to suggest engagement. For example, one case perceived being rushed’:

“One of the early appointments I did take a list in with me and I felt as if I was holding her up a wee bit for the next person” (MD6 Reference 3)

In some cases the approach of the midwifery staff was perceived poorly in terms of the relationship that developed. This was expressed particularly strongly at times:

“It’s as if there’s no sort of personal relationship, not that I was expecting there to be you know I don’t expect to be best friends with the midwife or anything like that, not like that at all, but it’s just I mean they do, they’re showing care and making sure everything’s alright, they’re basically asking you if there’s anything wrong but I just feel as if there’s a kind of conveyor belt procedure and I’m just one of the one’s that’s on it” (MD9 Reference 8)

Regarding recognition and acknowledgement of prior case knowledge, there was no perception that knowledge was underestimated. Instead, cases perceived the opposite at times with knowledge being overestimated by the antenatal staff:

“I don’t know if it’s just myself because I am, this is obviously the first baby but I feel as if you’re just expected to know certain things you know a midwife phoned the other day, well it was actually at night time, quarter to seven at night, I need to make an appointment for you to come up to the hospital and I’m like kind of taken aback, like what for, you need to come up to CMU and I’m like what does that stand for, community midwife unit and I’m like oh right ok, and what’s that for, oh just to show you about, it’s as if you’re expected just to know things” (MD9 Reference 1)

“They just said oh we’ll need to bring you back in two weeks and we’ll monitor the growth and nobody explained if it was something we should worry about or not and try to discuss it and then they wouldn’t explain anything” (MD12 Reference 4)

Therefore, across the identifiable engagement markers of perceived 'equality' between midwife and case; evidence of the recognition and acknowledgement of prior case knowledge; the case perceiving a friendly, social or relationship building aspect to the consultations, there was evidence to suggest engagement in one case in this case group (MD11). The case summary and demographics of this case were shown in section 7.4.2.

There was no evidence to indicate the presence or lack of engagement in seven cases (MD1, MD3, MD4, MD7, MD8, MD10 and MD13). However, there was evidence that suggested a specific lack of engagement in four cases (MD5, MD6,

MD9 and MD12). The four cases who described a lack of engagement differed in terms of age, marital status, housing tenure, education level and occupation. A case summary of MD5 is shown below:

#### **Case Summary MD5**

MD5 was a 20yr old single woman - although her partner was present at interview one. She lived in a local authority housing estate within the main urban town. The area was in deprivation decile one and had a run down feeling with evidence of housing having been demolished and current housing generally tired looking. She resided in a rented flatted building which had an unkempt appearance. She had an HNC but was one of two cases in the group to be unemployed (MD12 is the other). She attended for all clinical appointments and attended the 'threads' antenatal class for young women. She also attended two of the generic antenatal classes with her partner but stated she missed the last two as the topics were covered by threads. There is no evidence in the data she used any other antenatal services. During the first interview she was very quiet and it was her partner who did most of the talking. The second interview was completed after one failed attempt. She was alone and more talkative at this interview.

At the stage of the first trimester this case used the phrase 'told' to describe a lot of the conversation with the midwife (reference 1, 2). She also expressed a thought that the midwife and doctor just hadn't had babies (reference 3). At the final trimester, the case described a 'scare' she had that necessitated a hospital admission. The first point of information was her mum as she felt she did not 'want to seem stupid' by calling the midwives direct (reference 1). Therefore, there is no evidence in the data that this case described any level of engagement.

MD5, in common with LD2, did show some evidence of engagement with one part of the antenatal service – the age appropriate service to young women. The non-engagement described here refers to the generic antenatal service offered to all women.

In summary, with regard to power and relationships, there was evidence to suggest engagement in only one case in the lower socioeconomic group. This case (MD11) also showed evidence of engagement in the previous analytical code of language and personalisation and her status as a health professional may have continued to explain the presence of engagement. Seven cases did not present evidence of

either engagement or a lack of engagement. This may have reflected the retrospective method of analysis discussed earlier. Four cases presented evidence suggestive of non engagement although it was difficult to determine an influencing factor as they differed in terms of all recorded demographic variables except for deprivation status.

### **7.5.3 Case Group Code Comparison**

From the available data, the analysis of power and relationships presented mixed results across case groups. There was a lack of evidence relating to eleven cases across the sample. There was, however, evidence that within the least deprived case group, two cases engaged and three did not. In relation to the most deprived case group one of the cases demonstrated evidence of engagement and four cases demonstrated evidence of a lack of engagement. These numbers were small and this limits further analysis and the potential for conclusions. However, the following sections tentatively explore potential influencing or modifying factors that may have underpinned the presence or lack of engagement in the ten cases where evidence was available.

#### **7.5.3.1 Age**

LD5 and LD6 both presented evidence for engagement and were very similar in age. However, LD8, MD6 and MD9 were also in the same age group and they presented evidence for a lack of engagement. Therefore, it was unlikely that age alone was a significant influencing factor in terms of engagement and power & relationships.

### **7.5.3.2 Planned Pregnancy**

Across case groups, all three engaged cases had planned pregnancies. However, in the seven non engaged cases only one did not have a planned pregnancy. Therefore, as with the analysis of language and personalisation, no case with an unplanned pregnancy engaged with the generic antenatal service. However, the overall numbers were too small to indicate whether a planned pregnancy was influential in terms of engagement.

### **7.5.3.3 Housing Tenure**

LD5 and LD6 both presented evidence for engagement and both were owner occupiers. However, so to were LD4, LD7, LD8, MD6, MD9 and MD12 who presented evidence of non engagement. Therefore, there was no evidence to suggest that housing tenure alone was a significant influencing factor in terms of engagement and power & relationships.

### **7.5.3.4 Marital Status**

LD5, LD6 and MD11 presented evidence for engagement however only LD5 was unmarried. Among those who presented as not engaged, LD7, LD8, MD6, MD9 and MD12 were all married and MD5 was unmarried. That illustrated that there were unmarried cases in both the engaged and non engaged group and therefore, it was unlikely that marital status alone was a significant influencing factor in terms of engagement and power & relationships.

### **7.5.3.5 Smoking Status**

Across groups there were three self reported smokers. None of these presented evidence to indicate the presence or lack of engagement. Therefore, no analysis

could be undertaken in relation to smoking and the code of power and relationships.

#### **7.5.3.6 Education Level**

LD5, LD6 and MD11 presented evidence for engagement. LD5 had no post secondary qualifications, LD6 had postgraduate level qualifications and MD11 had a first degree. Among those who presented as non engaged, LD4, LD7, LD8 and MD6 had university level education, MD5 and MD9 had further education level qualifications and MD12 had no post secondary qualifications. Therefore there did not appear to be any discernable relationship between education level and level of engagement.

#### **7.5.3.7 Prior Knowledge**

LD5 and LD6 both presented evidence for engagement and neither had prior medical knowledge. MD11 also presented as engaged and did have prior medical knowledge. Of those who presented as non engaged, LD4 and LD7 had prior medical knowledge. Therefore, as with the code of language and personalisation, there appeared to be a contradictory relationship between prior knowledge and level of engagement. However, although referring to small numbers, it may be that prior knowledge in the least deprived group mitigated against engagement.

#### **7.5.3.8 Deprivation Status based on Area of Residence**

Deprivation status was the only demographic factor shared by each member of the two case groups. In the least deprived group, two of the group engaged and three did not. As such, it was reasonable to assume that deprivation status was not influential in terms of engagement. In the most deprived group, only one case



engaged and four did not. As there was insufficient evidence in relation to seven cases it was difficult to draw conclusions here in relation to engagement.

#### **7.5.3.9 Code Summary**

In terms of power and relationships, engagement was analysed under the conceptual codes of: perceived 'equality' between midwife and case; evidence of the recognition and acknowledgement of prior case knowledge; and the case perceiving a friendly, social or relationship building aspect to the consultations. In common with the earlier substantive analysis, the analysis of power and relationships was designed to demonstrate whether women from different socioeconomic backgrounds perceived their antenatal care differently. In this respect, the analysis of power and relationships demonstrated less differentiation across the case groups than the previous code of language and personalisation. I have speculated earlier that this may have reflected the retrospective approach to data analysis in terms of the theoretical proposition of engagement. As such, I was not able to draw specific conclusions in relation to the code of power and relationships.

From the available evidence, in both case groups, non or neutral evidence of engagement was more common. Only three cases showed any evidence of engagement and there was little in terms of demographic variables to distinguish these three cases from the seven cases who did not engage. There may be an association between prior knowledge and engagement but this is difficult to discern as the numbers are small and the evidence is contradictory across the case groups. The potential association will be discussed further in the next chapter.

## **7.6 Health Literacy**

The analysis of health literacy focused on aspects of the data related to specific sub codes outlined in section 7.2.2. Evidence was sought regarding the perceived quality of communication with health professionals; the perceived quality and personal relevance of verbal and written educational information; and the opportunity for, and evidence of, shared decision making. Each of these components was considered in terms of engagement but, as explored in section 7.2.2.2, these components related as much to the presence of an environment that could sustain engagement as well as whether engagement itself was present.

### **7.6.1 Health Literacy in the Least Deprived Group**

In terms of communication, there was evidence for engagement in relation to five cases (LD1, LD3, LD4, LD6, and LD9) at least up until the end of the first trimester:

“And then she repeated, which was good that they repeat to you because your first appointment it’s a lot to take in do you know what I mean, they were very, very thorough” (LD3 Reference 1)

For one case (LD4) the communication was viewed both positively and negatively with later appointments in the first trimester overturning the initial concern:

“But what I would say about that is I came out of that feeling a bit kind of negative, I don’t know if negative’s the right word but there was a lot of talking about things that can go wrong, the different tests that are done for downs syndrome and spina bifida and I kind of come out of that feeling a wee bit kind of worried” (LD4 Reference 1)

“But when I went for my scan and then I had an appointment with the midwife after that it was more sort of up beat, I felt that she was more like this is why we’re taking the cubs and we do it because this can happen that you know it’s unlikely and we have to do it and I felt that was maybe a better way of” (LD4 Reference 4)

Positive aspects of communication were less evident by the final trimester with three of the initially engaged cases presenting evidence of less than effective communication processes. This coincided with a perceived routineness of the midwifery approach:

“I thought maybe they would talk to you more about things like for example in my notes I’ve got like a labour plan and stuff like that and I wonder what stage they would start to talk about this .....but I suppose I’ve not really been asking for it” (LD4 Reference 6 Interview 2)

“The next time I went back I said at what point do you start to get a general feeling for how big the baby is etc and she said oh that’s already started and then that person explained this and also I had noticed she started writing CEPH and then the next time after that I says, I don’t know how to pronounce the words but I said does that mean the heads down and then they explained all the different bits but I don’t know if that’s just me” (LD6 Reference 2 Interview 2).

From the outset, three cases (LD2, LD7 and LD8) never presented any evidence that their communication with the antenatal service would support engagement:

“I’ve actually been down because in the pregnancy record there’s like all these things like things to tick and sign off, the information you should be given and I was like I don’t know if I’ve been given any of this or I don’t know if it’s around kind of thing but she said it’s because I’d been going back and forward to the hospital everything at some point would have been kind of covered” (LD8 Reference 11)

Regarding shared decision making there was evidence in the data for engagement in relation to six cases (LD1, LD3, LD4, LD5, LD6, and LD9) at least up until the end of the first trimester:

“She told me just about basically the different options of like how to have your baby about whether you wanted consultant led or midwife led and explained the difference between the two and explained that she’s like part of a team and it was the silver team and how it works and things like that so I kind of made a choice that I was just going to go with midwife led” (LD4 Reference 2)

“I said obviously I would prefer a natural birth but I don’t know whether that’s possible and she had said well unless there’s something set in stone, you’ll have a natural birth” (LD5 Reference 2)

Generally, the evidence for shared decision making weakened somewhat within the final trimester as it did with communication. For example, some cases demonstrated evidence for certain aspects not being discussed:

“There is leaflets at the hospital, I’ve never, ever found out about anything like that but I know there is like a hypnobirth, I think there’s quite a long waiting list to get into that” (LD3 Reference 5 Interview 2)

One case, (LD3) who had expressed first trimester evidence of a shared, discursive process with the midwives, expressed final trimester concern that spending time discussing decisions may be pointless:

“Yea well my midwife said to me the last time she said have you got a birthing plan and I said no because I don’t see the point, but that’s just my opinion cos what’s the point in having all this stuff written down that you want then it comes to it and everything’s out the window” (LD3 Reference 6 Interview 2)

Three cases, (LD2, LD7 and LD8) did not present any evidence in the data of shared decision making. For example:

“She was like that how would you feel if a person came up to you and you’d just had your wee baby and put a fag in it’s mouth, that’s how she explained that. I didn’t like that at all, she’s like that, that’s what you’re doing, that’s how she brought it across” (LD2 Reference 3)

“Actually I don’t really know, I know I agreed to all the tests, I don’t really know if I’m to get results or if, I don’t really know what happens with the blood kind of thing, will they letter me or, I don’t know and she maybe told me but” (LD8 Reference 7)

Regarding utility of information, I considered the perceived quality and personal relevance of verbal and written educational information. The evidence varied between the written material and the educational classes. As such, I considered these aspects separately:

There was evidence in the data that only one case (LD4) viewed the written material positively:

“But I feel like the reading material and that, that they’ve provided you with along with the meetings has sort of helped to fill a lot of gaps” (LD4 Reference 6)

However, even with LD4, there were some negative aspects reported:

“There was a wee query on one of the leaflets that the health visitor gave me, it said that you shouldn’t eat, see like pre-packed meats, like cold meat and things like that, so I was asking her about that and then she went on about, she was talking about the foods more so and that was a wee bit of a confusion between the two” (LD4 Reference 1)

The remainder of the cases in the least deprived case group did not present evidence that they perceived much utility or relevance from the written material they were given. This related to the volume of material, their perceived need or personal knowledge and / or their stage of pregnancy when the material was given to them:

“One of the books we got Ready, Steady Baby or something and it’s really old fashioned, so dated already I think from when it was published to getting that now I feel it’s sort of laughable some of the stuff that it was asking you to do or just tips and things like that it wasn’t really helpful at all to be honest” (LD8 Reference 13)

“You know that way sometimes you maybe have too much information that you’re like what do I look at” (LD9 Reference 3)

The structured antenatal education classes followed the programme outlined in chapter five and were offered to all women in the third trimester. Four cases (LD3, LD5, LD6 and LD9) were generally positive about the educational component though LD5 expressed concern about some aspects being boring and LD6 reported that these classes would not suit everybody:

“The last couple of classes it was a wee bit boring. I think I had built, the last couple of classes you got to see round the labour suite and I don’t really know what I thought I was going to see, I thought I was going to see a labour or something, so I was a bit disappointed it was just a room, there’s nothing to see in it, so they were a wee bit boring but a lot of it was quite useful and I’ve never had a baby before so it was quite interesting” (LD5 Reference 6)

LD2 also expressed positive perceptions about the age appropriate antenatal education she received:

“Uh huh they do both and obviously bathing, they show you the wee dolls and you can have a go at it yourself. It is good” (LD2 Reference 6)

Four cases (LD1, LD4, LD7 and LD8) did not perceive their antenatal education classes to be a particularly positive experience:

“Just a wee bit, just a wee bit of that’s the last class I’m fed up with this now. I’ve had enough” (LD1 Reference 6)

“And it feels almost like being back at school and there’s a teacher just like talking to you and you’re just sitting trying to like pay attention and stay focused and it’s hot and it’s busy” (LD4 Reference 12)

Therefore, across the sub codes of health literacy there was a fairly consistent presentation in most aspects although the problem of small numbers limits insight into specific patterns. Three cases (LD3, LD6 and LD9) demonstrated evidence that could support engagement across all three of the sub codes at least up until the end of the first trimester (in terms of communication, shared decision making and the utility of the educational classes). These three cases were all above 30yrs of age, married and owned their properties. LD6 had post graduate level education and LD3 and LD9 had further education level qualifications. Another three cases (LD1, LD4 and LD5) demonstrated evidence that could support engagement across

two of the sub codes. These three cases were similar in age however only LD5 was unmarried and did not have university level education.

A case summary of LD3 is shown below.

### **Case Summary LD3**

LD3 was a 31yr old married woman who lived in a semi-detached house in an affluent area of the main urban town. She resided in deprivation decile 9 and although this is within the main town, the area has traditional housing with defined property boundaries and gardens. She had an HNC level qualification. She attended all given clinical appointments and attended three out of four antenatal education classes with her partner. One class was missed due to being unwell. She also received acupuncture from the midwifery service. This case was talkative during interviews

At end of first trimester there was a sense of value placed on the way the midwives explained and repeated information (reference 1, 2, 6). By the final trimester there was some evidence that information had not been passed on to her (reference 2, 3). However, in discussing this, the case used phrases like 'no big deal' and everybody makes mistakes' (reference 3, 3, 4). There was also a perception of 'routineness' in relation to antenatal appointments with phrases like 'just the usual' (reference 5). The data indicated a high potential for informed and shared decision making at first trimester as case described considerable time spent ensuring hand held notes were understood and completed and test results explained (reference 1, 2). One question raised by the case resulted in an agreement that they would pull old records to clarify something so again evidence that case was influencing aspects of care (reference 5). By the final trimester there was a perception that the opportunity for shared decision making was diminished by a lack of relevant information concerning hypnobirth (reference 5). There was evidence to indicate that the case believed that some decisions she made could be overturned at a later stage particularly in relation to birthing plans and drug therapy (reference 4, 6). There was also evidence that important concerns and fears, such as the use of forceps, were not shared with the midwives (reference 7). At end of first trimester there was recognition that there was a lot of written material (reference 1) and, in general, this was beneficial (reference 2). However there was also evidence of selecting literature to read related to perceived relevance at that point in pregnancy and 'flicking' through the rest (reference 3, 4, 5, 6). At the final trimester the case described antenatal education classes as 'good' and 'dead relaxed' (reference 2, 3) although at the same time she reported that people she has spoken to state that they are a 'waste of time as you forget everything' (reference 5). The case also described an awareness of physio classes but an assumption that as she was attending physio then there was no point in going (reference 4). This indicates a lack of knowledge regarding the content of antenatal physio classes. Therefore, evidence for engagement is mixed here. The evidence for engagement is stronger in the first trimester with the written information and the educational material being considered positively but there was a tendency to screen what was read based on perceived need or knowledge.

Three cases (LD2, LD7 and LD8) demonstrated a lack of evidence that could support engagement across any of the three of sub codes (in relation to LD2 this lack of engagement appeared to relate to the generic antenatal education and not the age specific education which was reported positively). The case demographics and case summaries (reflecting all three analytical codes) of LD2 and LD7 have been highlighted earlier in section 7.4.1 and 7.5.1. The case summary of LD8 is shown below.



### **Case Summary LD8**

LD8 was a 31 year old youth education worker who lived with her husband in semi detached accommodation in the lowest deprivation decile. She was university educated, did not smoke and her pregnancy was planned. She attended all given clinical appointments and attended all four antenatal classes with her partner. She also attended physiotherapy classes. She was talkative during interviews.

At the first trimester, this case described the contact with the midwife as 'really good', 'brilliant', 'asking if we had questions' 'friendly', 'knowledgeable' and 'relaxed' (reference 1, 2, 3, 4). However there were contradictions here in that the case also described there being lots of things she wanted to ask 'but not wanting to bother anybody' (reference 7) and of realising she had 'missed information' and putting this down to the appointment being 'more a nice chat between midwives' (reference 6). She stated on one occasion she 'didn't come out any different than when she went in' (reference 7). The case herself took the 'blame' for this as she described herself as 'scatty' and even when she took a list of questions 'she forgot to ask them' (reference 8, 9). The case also described a feeling that she thought there would be more contact even for 'reassurance' (reference 12) and that at some appointments she did not 'have a clue what the midwife was talking about' (reference 14) although she also described the midwife as 'chatting her way through the pages of her notes and showing all the appointments' (reference 15). The case also described feeling anxious and unsure of what to expect (reference 16, 17), not knowing the titles of anybody she was talking to (reference 18) and describing a lack of advice other than somebody asking her if she smoked or drank (reference 24, 25). Overall, at the end of the first trimester this case described her antenatal care as 'good' and 'super efficient' (reference 26, 31) but there was evidence that the enormity of information needs meant she had to seek some of this herself (reference 27).

By the final trimester, there had been a medical problem during pregnancy that necessitated additional consultant appointments (reference 2, 3, 4, 5, 6, 7). There was a perceived lack of communication and action concerning this with the case feeling that 'nobody was helping her' and this resulted in the case having to 'take control of getting the required information to where it needed to be' (reference 9). Some appointments were considered 'a waste of time' and the whole thing was 'ridiculous' (reference 11, 12). It should be noted that the time wasting related to medical led aspects of antenatal care but overall it left a powerful impression on this case with her expressing concerns about what it meant for the rest of her care (reference 13). These concerns may have been reflected in how she described midwifery appointments as she described 'never seeing the same midwife', 'things in her records not discussed' and a feeling that her care was less than that given to her friend (reference 14, 15, 17). The midwives were still described as 'lovely' but this case indicated that she was getting as 'much information of her pal' (reference 19). The case herself described her care as 'poor', 'lacking in communication' and 'lacking in midwifery contact' (reference 28, 29, 30, 31, 32).

Eight cases out of nine did not perceive or report any utility in the written educational material. However, this may suggest evidence of positive health literacy rather than a lack of health literacy in that these women were able to access and use self sought health information to actively inform their care.

In summary, one third of the least deprived case group demonstrated evidence that could support the initiation or sustainment of engagement in all three of the sub codes representing health literacy. Two thirds of the case group demonstrated evidence that could support engagement in at least two of the health literacy sub codes. One third did not demonstrate any evidence that could initiate or sustain engagement with the generic antenatal service. Of the three who failed to engage, two (LD7 and LD8) also failed to demonstrate any evidence for engagement in any of the two previous analytical codes and one (LD2) failed to demonstrate any evidence for engagement in one of the two previous analytical codes.

### **7.6.2 Health Literacy in the Most Deprived Group**

In terms of communication, one case (MD11) presented neutral evidence of engagement. All other cases offered examples of poor communication:

“The midwife from the surgery also told me to take up to the hospital a urine sample, which I did. I thought, yes somebody’s going to test it. I went up on the Sunday and she said, no we don’t do any tests” (MD3 Reference 2)

“They told her different stuff that she couldn’t eat that I wasn’t told about” (MD5 Reference 5)

The analysis of shared decision making followed a similar pattern. One case, (MD11) provided evidence of a discursive process in relation to the decision to opt for CMU or consultant led care:

“She just explained the whole process and she offered me the options of the CMU or the Consultant led unit and explained them in detail and just again we talked through any of my anxieties” (MD11 Reference 1)

However in all other cases there was evidence that suggested a lack of opportunity for shared decision making and thus a lack of support for engagement. For example, with MD3 there was evidence that blood tests may not have been discussed in a manner that fully explored the implications:

“Actually now I’m thinking god what benefit am I going to get out of this because I don’t think I would, it would make me do anything if I came out high risk, plenty of people get it and have healthy babies” (MD3 Reference 4)

Another case (MD6) provided evidence that was suggestive of a decision possibly being led:

“Just because I always thought when I get pregnant I’m going to the hospital to give birth, the doctors will be there but the midwives said to me but you’re low risk, you don’t need that and you can have a birthing pool and all this” (MD6 Reference 2)

Other aspects of the antenatal approach also evidenced a lack of opportunity for shared decision making:

“Sometimes there is quite a lot of jargon and when I go to my appointments you know when I’m being measured and stuff like that and they’re checking for the foetal position and stuff they’re not really back to me, I’ve got to come back and check my notes” (MD9 Reference 2)

“We were told we wouldn’t be allowed to go by 38 weeks but nobody wanted to discuss it with us and they kept changing the subject and then we’ll get back to that, we’ll get back to that and it actually took about two months before they would actually discuss it with us” (MD12 Reference 2)

In the analysis of utility of information, I again considered the perceived quality and personal relevance of verbal and written educational information separately. With

regard to the written material there was evidence in the data that the volume of material may have been overwhelming to some cases:

“We got leaflets about everything, I can’t remember” (MD12 Reference 2)

MD4 and MD8 provided evidence that they had read all the provided material.

However, this was not without qualification:

“I did actually read all of them. I was off work at the time. I had time to kill” (MD4 Reference 1)

“No I think I read them and I’ve went back to some of them since to re read them to sort of refresh myself but I think I read them all” (MD8 Reference 6)

Most of the cases in this most deprived case group confirmed they ‘flicked through the material’ and selected what to read based on what suited their stage of pregnancy or their perceived need:

“Uh huh there’s a lot of leaflets that I think that wasn’t really anything to do with us and that we didn’t need” (MD12 Reference 3)

Four cases (MD1, MD3, MD7 and MD10) did not participate in a second interview and, as such, data regarding the structured antenatal education classes were only available for eight cases in this case group. From these eight cases, the data were mixed. For example, one case, MD9, did not attend the antenatal classes as she had previously attended with a friend and had a perception that information would not be retained:

“We made a joint decision, my husband and I, we weren’t going to go, we were just going to go with the flow because everything I would learn up there I probably would forget anyway and if there’s anything happens then that’s what the midwives are there for, to help me out so we decided not to go” (MD9 Reference 3)

Four cases (MD4, MD6, MD11 and MD13) expressed positive perceptions about the antenatal educational component:

“They’ve been very informative and given handouts out” (MD6 Reference 1)

“I don’t know I just feel very impressed with it, just impressed with all the classes, I went to all the classes and found them very informative, quite scary. I don’t know obviously because of my background like I think a lot of things and my husband, he’s an ..... nurse so we’re sitting there a lot of the time and we kind of knew it all but I was like yea but if we hadn’t gone then I would have been thinking what have we missed out on, what don’t we know so from that sense it was good” (MD11 Reference 3)

The tendency to describe a level of engagement with this one sub code is interesting and may support an argument that their educational need was not met through other avenues such as written material or external resources.

Three cases did not perceive their antenatal education classes to be a particularly positive experience (these perceptions related to the generic classes and not the age specific input from MD5 or the twin pregnancy class for MD12):

“I felt very young I was the youngest there by far. I felt everyone else was older and married. The group was very big and I did not want to ask any questions. It was more formal. They did cover some information in more depth than Threads...If all the classes were like the hospital ones then I don’t think I would know as much as I do. I would also not have gone to any classes at the hospital if I did not have a partner. If I was not at threads I would just not have had much” (MD5 Reference 8)

“Well we all went in, it was just really, I had thought it would be more mixing amongst the couples but there wasn’t really, we were too shy maybe, so the midwife just talked to us all...Yea, yea she would chat to us. Some of the midwives did better than others, one was patronising but on the whole” (MD8 Reference 2/3)

In terms of the sub codes that represented health literacy, and therefore the potential for engagement, there was a mixed presentation in the data concerning the most deprived group. No case presented positive evidence of engagement in

terms of the utility of written material although, as with the least deprived group, almost all accessed either internet or purchased material. Only MD11 presented some evidence that would support engagement across all three sub codes (although the evidence was limited in terms of communication and the utility of written material). In addition to MD11, three cases (MD4, MD6 and MD13) presented evidence of engagement in terms of the utility of the structured educational input. These four cases were all aged 30yrs or less, non smokers and were owner occupiers. However, unlike the other three cases, MD4 was not married and did not have university level education. A case summary of MD4 is shown below.

#### **Case Summary MD4**

MD4 was a 30yr old woman who lived with her partner. She lived in the centre of the main urban town in a traditional tenement building three floors up. The stairwell was slightly run down and parking anywhere near the property was in metered zones. The flat was owner occupied. This case had an HND qualification and worked as a personal assistant. She attended all clinical appointments and attended all four antenatal education classes (three with her mother and one by herself as her partner was posted abroad). There was no evidence in the data that any other antenatal services were used. This case presented as intelligent and thoughtful at interview.

There is little in the data that indicated positive aspects of communication. However, at the end of the first trimester there was still a lack of clarity about what to expect (reference 4). There was little in the data to reflect a level of informed and shared decision making. At the end of first trimester, if worried, the case instinct was not to contact the midwifery service in the first instance. The contact with midwifery service was minimal thereafter in terms of clinical input. At end of the first trimester all midwifery provided information had been looked at although this was qualified by the fact that she was 'off work and had time to kill' (reference 1). However some of this reading was selective in terms of how far the reading progressed (reference 4). Spoke more positively about the online material which was being accessed on a weekly basis (reference 5). This high value on online material persisted into the final trimester where the structured antenatal education was seen as backing up own case research (reference 1) and where the online material was considered easier to access (reference 3). The case commented on the lack of written material given as part of educational input (reference 3) as considered 'back up' of verbal material important (reference 4). However reported to 'really enjoy' the antenatal classes (reference 1).

Other than MD11, the other eleven cases in the most deprived case group demonstrated a lack of evidence that could support engagement across the sub codes of communication and shared decision making. A case summary of one of these cases, MD7, is shown below.

### **Case Summary MD7**

This case was a 17yr old woman who was one of two in the most deprived group to live with parents. She was single, a smoker and resided in deprivation decile one in an area within the main town well known as being the most deprived in Scotland. The area had been upgraded in recent years and although it still contained local authority housing, this tended to be modern flats and semi detached properties. However, there was still a perception that this was a 'poor' area with evidence of graffiti. The case had standard level qualifications and worked in a fast food outlet. The case attended all clinical appointments up to the first interview. At the first interview she presented as a quiet woman who did not elaborate on answers. I was unable to complete the second interview.

At the first trimester, the one aspect of communication the case specifically remembers was in relation to being asked if she smoked (reference 1). There was little positive reporting of midwifery interaction and even the phrase 'at the end of it' in relation to being asked if she had any questions gives an indication that this case was not really engaged in that specific consultation (reference 2). There was nothing in the data to indicate an opportunity for informed and shared decision making. At the first trimester there was a low level of health literacy demonstrated here. The case described 'flicking through' the written information provided (reference 3) and also reported that she had not sourced any additional material either purchased or via the internet (reference 4). This may mean that this case was reliant on personal contacts for information. This included the midwifery service but there was no evidence at the first trimester that the case has sought specific information.

In summary, four of the cases where data was available demonstrated engagement in terms of the utility of the structured educational component. However, eleven of this most deprived case group demonstrated no evidence that could support the initiation or sustainment of engagement in the sub codes of communication and shared decision making. Not one case demonstrated engagement in terms of the written material.

### **7.6.3 Case Group Code Comparison**

From the available data, the analysis of health literacy resulted in a mixed presentation across the case groups. In almost all cases, across both groups, there was very little evidence to support engagement in terms of the utility of written information. However, written information aside, one third of the least deprived case group (LD3, LD6 and LD9) demonstrated evidence of engagement or the potential to support engagement across all three sub codes. A further three cases in the least deprived group (LD1, LD4 and LD5) demonstrated evidence of engagement or the potential to support engagement across two of the sub codes. Therefore a perception of an environment that could support engagement was more likely than not in the least deprived group.

One case in the most deprived case group (MD11) presented evidence of engagement or the potential to support engagement across all three sub codes. No other case in the most deprived group demonstrated engagement across the sub codes of communication and shared decision making. Three cases in addition to MD11 (MD4, MD6 and MD13) demonstrated evidence of engagement or the potential to support engagement in relation to only one sub code: the utility of structured antenatal education. Therefore, the perception of an environment to support engagement was less likely in the most deprived group. The following sections explore potential influencing or modifying factors that may have underpinned the presence or lack of engagement in the cases where evidence was available.



### **7.6.3.1 Age**

In the least deprived group the two youngest cases did not engage with generic services and the three who engaged in all three markers were all above 30 yrs of age. Two who engaged in two markers were also in this age range. However, a further case, LD8, was also in this age range and did not engage in any marker for health literacy. Therefore, although the numbers are too small to draw conclusions, there is a suggestion that young age may influence engagement with generic services. However, age alone cannot explain the entire picture in the least deprived group. In the most deprived group, those that did not engage spanned the age range from 17yrs to 39yrs. The one case that did express some degree of engagement, MD11, was very similar in age to LD7 who did not engage in the least deprived group. Therefore, overall age did not appear to be influential to engagement.

### **7.6.3.2 Planned Pregnancy**

LD2 was the only case in the least deprived group not to be a planned pregnancy and this case did not demonstrate evidence of engagement. However, LD7 and LD8 both planned their pregnancy and also did not demonstrate evidence of engagement. In the most deprived group, MD11 did plan her pregnancy but of the four who also engaged with the structured antenatal input, one case, MD13, did not plan her pregnancy. Therefore the status of pregnancy did not appear to be influential in terms of engagement.

### **7.6.3.3 Housing Tenure**

In the least deprived group all of the women who engaged in full or part owned their own house as did the one part engaged case, MD11, in the most deprived group.

However, cases across both groups that did not engage also owned their own property, therefore, housing tenure in its own right, did not appear to be influential to engagement.

#### **7.6.3.4 Marital Status**

In the least deprived group, the three women who engaged in all three markers were married. Of the three cases who were engaged in two markers, two were married. In those three who did not engage, two were married. In the most deprived group, the women who did not engage did not have a consistent marital status. Therefore, marital status in its own right did not appear to be influential to engagement.

#### **7.6.3.5 Smoking Status**

In the least deprived group there was one self reported smoker. In the most deprived group, there were two self reported smokers. Within these small numbers, none of these cases showed evidence of being engaged with the service. However two non smokers in the least deprived group and eight non smokers in the most deprived group also did not engage with the service. Therefore, there appeared to be no relationship between smoking and engagement.

#### **7.6.3.6 Education Level**

In the least deprived group, of the three women who engaged in all markers, one had post graduate level qualifications, and two had further education qualifications. Of the three least deprived cases who part engaged, two had university level education and one had no post secondary education. In the most deprived group, the one case who showed most evidence for engagement (MD11) had university

level education and of the four cases who engaged with the antenatal education input, three had university level education. There were cases across both groups who had university and further education who did not engage. However, of the seven women across both groups that engaged with at least two sub codes (LD1, LD3, LD4, LD5, LD6, LD9, and MD11) six of them had education beyond secondary level. Therefore, whilst it is impossible to draw firm conclusions from these small numbers, it did appear that higher educated cases had more potential for engaging in terms of health literacy and cases with no post secondary education had less potential for engaging in terms of health literacy. It may also be relevant that that the one case with no post secondary education who did engage came from the least deprived group.

#### **7.6.3.7 Prior Knowledge**

In the least deprived group, LD7, a medical professional, did not engage with the service. However, LD4, also a health professional, did, as did MD11 a health professional from the most deprived group. Therefore, prior knowledge in its own right did not seem influential here but there was an interesting comparison with MD11 and LD4 and LD7. Both of the least deprived cases perceived minimal value from structured antenatal classes largely due to their existing knowledge. However MD11 reported that, although both her and her husband (also a health professional) already knew most of what was discussed at the antenatal classes, they found the classes beneficial and would have worried about not going in case they missed something (reference 3).

#### **7.6.3.8 Deprivation Status based on Area of Residence**

This is the only demographic factor shared by each member of the two case groups. In the least deprived group, where three of the cases failed to engage, it was reasonable to assume that deprivation status was not influential here. However, in the most deprived case group, where lack of engagement was noted in eleven of the cases across at least two sub codes, the only commonality was deprivation status. No other collated demographic characteristic remained consistent across the most deprived cases. Therefore, it seemed reasonable to consider that, through some mechanism, deprivation status may have been one influencing factor in engagement in the most deprived case group.

#### **7.6.3.9 Code Summary**

In the analytical code of health literacy, engagement was analysed in terms of: the perceived quality of communication with health professionals; the perceived quality and personal relevance of verbal and written educational information; and the opportunity for, and evidence of, shared decision making. In terms of these sub codes, there was a discernable difference across the case groups suggesting, as with the analysis of language and personalisation, that cases from different socioeconomic backgrounds may have perceived their antenatal care differently. Cases in the least deprived group were more likely, though not exclusively, to demonstrate evidence for engagement in at least two out of three of the sub codes. However, cases from the most deprived case group were less likely to demonstrate engagement in any of the sub codes other than one aspect of utility of information: the structured antenatal classes. With such small numbers, the reasons for this cannot be determined but may reflect less confidence in their own knowledge (even when this knowledge was health related) or less ability to seek out and obtain

desired information from other sources. As such, the need to engage with antenatal classes may, in some way, reflect lower levels of health literacy in this case group.

The case groups also demonstrated differing perceptions in relation to communication and shared decision making. Most of the least deprived group demonstrated the potential for engagement in terms of these two aspects of health literacy. However, almost all of the most deprived case group failed to demonstrate the potential for engagement in relation to these two aspects. Effective communication is a precursor to shared and informed decision making and it is perhaps not surprising that failure to engage in one may have led to failure to engage in the other. Yet the willingness to engage in antenatal education indicated a desire in the most deprived group for information and communication regarding their antenatal experience. It may be that this willingness was there from the outset but, through some mechanism, failed to translate into engagement from the first trimester. Conversely, the least deprived group appeared to follow an opposite pattern of engagement. The majority of this group demonstrated evidence that suggested engagement in terms of communication and shared decision making from the outset. However, as with the code of language and personalisation, there was evidence that this engagement may have weakened by the final trimester.

In relation to the utility of written information, women from both case groups did describe a similar perception of their antenatal care. Two aspects may underpin this: the volume of material, some of which is considered mandatory to be given; and the generic nature of this material which tends to be collated into a 'booking pack' which is given to women irrespective of background or need. The 'pack' approach may be counterproductive and, where levels of health literacy are lower, could create the circumstance where important information is missed.

## **7.7 Comparison Across all Three Codes of Engagement**

The three codes of language and personalisation, power and relationships and health literacy presented a degree of consistency within and/or across case groups for the evidence of engagement. Firstly, there was within and across case group consistency in terms of power and relationships. This largely related to the lack of evidence available from either group that could confirm the presence or lack of engagement with regard to this code. It may well be that had the theoretical proposition of engagement emerged prior to or during data collection then a different picture would have been presented. However, overall, there was insufficient evidence to draw conclusions in relation to the code of power and relationships.

In relation to language and personalisation and health literacy, the evidence suggested that engagement rather than non-engagement may have been more likely, although not guaranteed, in the least deprived group. The evidence also suggested that non-engagement rather than engagement may have been more likely in the most deprived group. Furthermore, in each group, the analysis of potential influencing or mediating variables demonstrated no collated variable that may have explained the relationship to engagement other than their deprivation status.

To explore this tentative finding I re-ordered the case groups to review the analysis from a different perspective. In my case groups, the education level of the most deprived group was higher than might have been expected based on known data for the study area (see chapter six section 6.2.5.2). This also contributed to the case groups being less differentiated than might have been expected. Therefore, to consider if education may have been more influential in terms of engagement than

area based deprivation, the case groups were re-ordered based on education level of first degree and above. This resulted in two case groups equal in size to the original case groups: case group one (n=9) educated to degree level or above and case group two (n=12) without university level education. In the higher educated group, no case was younger than 25 years of age, no case smoked and no case was unemployed. They all owned their own property however their occupational classification was mixed. In the less educated group the age ranged from 17 to 40 years of age, three cases smoked and two were unemployed. There was a mix of housing tenure and a mix of occupational classification.

Using the analysed data from each individual case, an inconsistent case group presentation emerged across all three codes of engagement. Within case group one, (more educated) four cases presented as engaged in terms of language and personalisation and five did not; two cases presented as engaged in terms of power and relationships and three did not; and four cases presented as engaged in terms of health literacy and five did not. Within case group two, (less educated) three cases presented as engaged in terms of language and personalisation and nine did not; one case presented as engaged in terms of power and relationships and three did not; and three cases presented as engaged in terms of health literacy and nine did not. It was difficult to determine a trend within this data regarding education level being influential towards engagement. However, one potentially important aspect was noted in this re-ordered analysis: those without university education who did engage all came from the least deprived socioeconomic backgrounds. As such, based on the original or re-ordered analysis, there seemed to be a sufficient trend to suggest that deprivation based on area of residence may have been a factor underpinning the potential for engagement in my study.

Before concluding this substantive analysis, there is one final point to make. My study was designed to obtain data on the perceptions and experiences of antenatal women. This, in effect, only provided information from one side of a two-way mirror. Qualitative data has been collected on the perceptions of health professionals involved in the delivery of antenatal care although the analysis of this data is outwith the scope of this clinical doctoral thesis. However, it is recognised that the information obtained will provide a fuller picture of antenatal care for women from socioeconomic extremes.

## **7.8 Conclusion**

My substantive analysis progressed through three distinct phases. The first phase detailed the development of analytical codes that encompassed the concept of engagement; the second phase detailed the replication analysis within each case group to establish case group similarities and differences; and the third phase detailed the replication analysis across case groups to establish if there was a difference between these socioeconomic groups in terms of engagement.

There was a level of cross-cutting between the three codes used for the analysis. However there was sufficient capability in the sub codes to ensure each code could be analysed as a distinct entity. It is acknowledged that the case study numbers were small and this limits the strength of the findings. The results were as follows:

- The literal replication analysis demonstrated a level of consistency within each of the case groups with the presence or lack of engagement following a generally similar trend. In the least deprived socioeconomic group the trend tended towards engagement. In the most deprived socioeconomic



group the trend tended towards non-engagement with 11 cases out of 12 not engaging.

- Correspondingly, the theoretical replication analysis demonstrated a difference between the socioeconomic groups in that the presence or lack of engagement tended to relate to socioeconomic background. The higher socioeconomic case group was more likely to engage with the antenatal service than the lower socioeconomic case group.

It was not possible from the evidence presented here to state categorically that socioeconomic status did influence the potential for engagement with the antenatal service. There may have been other variables for which I did not collect data that could have influenced the opportunity for engagement. However, within the constraints of small numbers, there was a notable consistency of the evidence across the three codes analysed in my substantive analysis. This consistency strengthened the likelihood that, in my study, women from extremes of socioeconomic background perceived their antenatal care differently. The observed difference related to the presence or lack of engagement.

The following chapter will explore some of the main points arising from this substantive analysis:

- What are the potential reasons for poor engagement in the lower socioeconomic case group?
- Why might engagement weaken as pregnancy progresses in the higher socioeconomic group?
- What is the potential impact of poor engagement?

## **CHAPTER 8 DISCUSSION**

### **8.1 Introduction**

In chapter eight the research findings presented in chapters six and seven will be reviewed. This review will consider the findings in terms of answering the two research questions that have underpinned my thesis:

1. What are pregnant women's expectations and perceptions of the current antenatal provision?
2. Is the current antenatal care provision perceived differently by women from different socio-economic backgrounds? If so, how does it differ?

Before exploring these questions, the development of new knowledge, and the suggested implications of my findings to clinical practice, there will be a review of the strengths and limitations of my research.

### **8.2 Strengths of the Research**

Construct validity was enhanced through the selection of appropriate operational measures and converging sources of data related to the selection of cases, supporting documentation and researcher observation. The selection of cases based on postcode data was supported by the triangulation of SIMD documentation and researcher observation of the geographical areas of residence. These sources of evidence confirmed that the selection of cases and allocation to case tails was accurate in terms of socioeconomic extremes. The case groups were shown to represent socioeconomic extremes in terms of case and partner employment, potential income and the deprivation status of their areas of residence (though there was less differentiation than expected in other areas). Specifically, the

residential areas of the case groups represented extremes of deprivation based on both the Scottish and study area average and, as such, they represented appropriate case groups from which to collect data and base my analysis. The demonstrable chain of evidence and the triangulation of data were observable within the case sheets and interview transcripts compiled for each individual case.

Reliability was enhanced through strict adherence to an approved protocol. The original protocol was revised on a number of occasions but at all times was subject to LREC scrutiny. The revised protocols are available for review. As the researcher, I was also familiar with the process of antenatal care, the geographical setting for the research and the statistical analysis and impact that underpinned the socioeconomic ranking of the Scottish Index of Multiple Deprivation (2006). Furthermore, reliability was maintained throughout the research process by keeping accurate documentation, a computerised record of the analytical stages and the compilation of a case study database and case sheets which remain available for external review.

My research questions did not call for generalisability in the widest sense and instead leaned more towards the development of theory that could inform future research and practice. However, external validity was enhanced by data and analysis which facilitated a 'fix' on where the case fitted with the wider population. As such, the findings were reviewed in line with the generalisability questions put forward by Hammersley (detailed in section 4.9) which referred to whether the main findings were plausible or credible enough to be accepted at face value. Firstly, credibility was enhanced by the study site being 'typical' (Schofield 2000) in terms of Scotland and each case being accurately recruited to an appropriate socioeconomic extreme based on their confirmed deprivation ranking. Secondly, although there were small numbers overall, the use of multiple cases from each

case group, and the resulting opportunity for replication analysis, strengthened the opportunity to generalise at least to a level within each case group. (There was some crossover in terms of categorical variables and this is discussed below). Thirdly, the finding that there was a difference in perceptions of antenatal women from different socioeconomic extremes was plausible in terms of the known fact that pregnancy outcomes differed between these two groups. What was not known before my thesis was a potential reason for this in women who accessed care in an equal manner. In terms of both credibility and plausibility I considered the evidentiary and analytical process detailed in chapters six and seven to be sufficiently robust to support my tentative findings.

### **8.3 Limitations of the Research**

One of the main limitations of my research was the small sample size. Yin (2003) does advocate that one replication is a sufficient level at which to support analytical or theoretical generalisation. However, the available data were limited and thus any findings must be considered with circumspection. Furthermore, there was less heterogeneity across the case groups than might have been expected. This may have reflected the fact that some younger recruits declined to participate in the study. As such, the data regarding age and educational qualification appeared less differentiated and potential explanations for this were explored in section 6.2.5.6. The outcome was that the most deprived sample group was possibly older and more educated than a 'typical' sample group from a socioeconomically deprived background. It was considered that this atypical presentation could have led to the outcome of a lack of difference between the sample groups in terms of their perceptions of antenatal care. However, it was also considered that should any difference emerge between the two groups then the real difference may be greater than presented in this thesis. The findings now suggest that there was a difference

between the two sample case groups and, therefore, this difference may be greater in reality. Despite this, the lack of data from a younger age group was a limitation of the study. Younger antenatal women may well have specific needs which I was unable to capture through my data. There were glimpses that this may be the case, such as noted in the high value placed on the age appropriate service by the two cases that accessed this service. However, the sample size was too small to allow any conclusions to be drawn.

Another limitation related to the length of the recruitment period. Due to the initial recruitment problems detailed in chapter five, the data collection period ran from February 2007 until April 2009. There may be an argument that antenatal care would not necessarily follow the same process during this period. However, this argument is negated by the continuing and ongoing use of the EGAMS (2002) framework that underpinned the format of antenatal care in the maternity unit involved in my study. As such, it was unlikely that any case did not follow a similar pattern of clinical care and this was confirmed by each interview.

The process of direct recruitment also had the potential to be an area of concern. At the outset recruitment was attempted via midwives to reduce the possibility that any woman felt obligated to participate in this research. However, despite allowing a period of six months to establish the process of the research with the midwifery service, the indirect recruitment was unsuccessful. This left no alternative but to recruit directly and, in the direct approach, every effort was made to minimise the likelihood of any woman feeling obliged to participate. This included advising each potential recruit that they were under no obligation to participate and giving them 48 hours between initial approach and recruitment to review the information sheet and finalise their decision. As such, those women who proceeded to recruitment and consent appeared to wish to do so. Importantly, the final method of recruitment

had one particular advantage: as the midwives were not involved in direct recruitment they were unaware of which women ultimately participated in this study. As such, this minimised the potential for the 'hawthorn effect' where care may have altered in light of 'being studied'.

A further potential limitation concerned the method of data collection. Some of the recognised drawbacks of interviewing were highlighted in section 5.6.1.3. These included perceived cultural barriers between the interviewer and the participant and the unintentional consequence of interviewer bias in the delivery of questions. In section 5.6.1.3 the approach taken to minimise any barriers between myself and the participants was detailed, including being aware of my dress code and demeanour during each interview. I was also from the area under study and this helped to establish a rapport with the interviewees. A semi-structured interview schedule also ensured that each case was asked the same questions in relation to the antenatal format outlined in section 5.3. These questions were always asked in the same order although the phrasing of questions could vary in response to the preceding answers in each interview. A further deviation from the base schedule was where I asked additional questions in response to specific answers. As such, all cases were asked the same baseline information at each of the interviews which allowed for comparative analysis. However, I also took the opportunity to develop specific responses to enhance the available data.

The final potential limitation was participant attrition from the most deprived group. This attrition occurred between the first trimester and third trimester interviews. As such, the dataset from the most deprived group was incomplete with no second interview data regarding the use, perceptions or meaningfulness of structured antenatal care from four 'most deprived cases'. Three of these cases were aged 20 and under and only five from the total sample (one from the least deprived and four

from the most deprived) were in this age group. This had the effect of weakening the strength of third trimester evidence from younger participants and relates to the age limitation discussed earlier. However, the data tentatively suggest that the first trimester may be the most important period in terms of initiating and sustaining engagement. This is suggested by the finding that all cases who evidenced a lack of engagement with clinical services at the end of the first trimester continued to evidence a lack of engagement by the final trimester. Therefore, as the dataset was complete for the first trimester, the results remain as robust as they could be for the first trimester findings.

In sections 8.4 and 8.5, the findings will be discussed in relation to the research questions. The format in each section will be to highlight my findings illustrating where new knowledge has been suggested. Supportive or contradictory literature will then be explored and each section will conclude with potential implications for practice. At all stages, it is recognised that the small sample size limits the strength of these findings.

#### **8.4 Research Question One**

*What are pregnant women's expectations and perceptions of the current antenatal provision?*

The results presented in chapter six provided detailed evidence regarding women's expectations and perceptions about the current antenatal provision. These expectations and perceptions were based on analysis of specific stages and processes within the antenatal system. The key points that emerged from the analysis are considered under two broad headings:

- Perceived Adequacy of First Antenatal Contact
- Perceived Utility of Antenatal Education & Resources

#### **8.4.1 Perceived Adequacy of First Antenatal Contact**

The data suggest that in a number of cases there was a time delay between first GP contact and contact with the antenatal service. This delay seemed to tie in with the GP role appearing, in the majority of cases, to be no more than a gatekeeper to onward antenatal referral. Specifically, the time period between GP contact and antenatal contact was reported to be as much as 2-3 weeks and during this time the women reported that a majority of GPs did not provide educational information. However, the data also suggested that women actively sought information at this time either through purchased material or internet searches. As such, across case groups, there appeared to be a delay in accessing educational information that is more likely to be evidenced based.

A delay in contact with the antenatal service was noted in a study by Soltani & Dickinson (2005) which explored women's views on the patterns of antenatal care. In their study, the authors noted that the majority of women were seen first by their GP with recognition that, in hindsight, the GP appointment was often a waste of time as they merely referred the women onto the midwifery service. Thus, 14% of the sample indicated that the 'booking visit' came too late in pregnancy for the provision of advice, information and support. As well as causing anxiety, this delay has the potential to feed into a public health concern that extends well beyond the neonatal period. For example, the research by Barker (1992; 2001; 2003a, 2003b), explored in chapter two, suggests that markers for adult disease such as hypertension and stroke may be laid down at the developmental stages of pregnancy through aspects such as poor maternal nutrition.



The importance of early antenatal advice is explicit within the National Institute for Clinical Excellence clinical guideline on routine antenatal care (National Collaboration for Women's and Children's Health 2008). This guideline which, although not directly applicable in Scotland, outlines detailed information on the information that should be given at 'first health professional' antenatal contact. This includes information on folic acid, food hygiene, lifestyle advice and information on screening tests. The wording of this guideline suggests that 'first antenatal contact' is not seen as a midwifery specific role and could be undertaken by the health professional first contacted for pregnancy related reasons.

The lack of early educational input may be important as many low income women do not attain the recommended daily allowances of specific food groups (Relton et al 2005, Fowles & Gabrielson 2005, Rogers et al 1998) and they have lower haemoglobin levels in the first trimester than women in other socioeconomic groups (Rees 2005). These aspects of poor nutrition correlate to low birth weight but are modifiable. As such, they should be seen as factors worthy of the earliest intervention in order to maximise the potential to limit negative pregnancy outcomes. Indeed, the importance of early intervention was underpinned by recent research that indicated that increased contact early in pregnancy, where there was the opportunity to make a difference to pregnancy outcomes, was potentially more important than contact later in pregnancy (Howard et al 2008).

The delay in the provision of evidenced based information is an important issue in relation to antenatal health and may have implications for all women. However, the delay may well be more problematic in women from deprived areas if aspects such as poor maternal nutritional have the potential to underpin lifetime health inequalities. My findings suggest that the structure and content of the first antenatal

contact should be reviewed as women may be missing out on up to three weeks of accurate, evidenced based information at a crucial stage of pregnancy. The potential impact of this gap in early pregnancy, in particular for women from more deprived socioeconomic backgrounds, is not an aspect that has featured in much published research to date. As such, there is a need for ongoing research that tests the maternal and child impact of information at this stage in pregnancy.

#### **8.4.2 Utility of Antenatal Education & Resources**

Education & resources related in the main to the written educational component and the structured antenatal classes. Two main points emerged:

- There appeared to be a low utility placed on NHS provided, written, educational material
- Neither group was unanimous in terms of reporting positive perceptions of the format of the antenatal education programme (although there were more favourable comments from those in the most deprived group).

The key point that cuts across both these findings is the importance of 'need' or 'relevance'. Specifically, the findings highlight the potential importance of 'self-determined relevance'. This stems from the lack of evidence to support a normative and personalised assessment of need beyond clinical obstetric risk. For example, from the available data, it was difficult to ascertain any approach that altered the standardised care. While the data may be limited, there may have been little professional involvement in the identification of individual need as perceived by each case. As such, it is suggested that perceived need and relevance may have been self-determined concepts in both case groups. It is also suggested that this

self-determined relevancy may have subsequently underpinned the utility placed on the educational material.

For example, higher utility seemed to be placed on the written educational content that women considered met their own personally identified needs. The potential concern of this approach is that self-determined relevance may be limited by personal case knowledge. If this knowledge is not enhanced or supported by a normative assessment of need then potential risks may go unaddressed. An example of knowledge influencing or limiting action was illustrated by one case who reported that if someone was saying there was a specific risk to her then she would read what was required in terms of that risk.

The approach of basing reading on risk necessitates understanding risk in terms of pregnancy and pregnancy outcomes. There were data to indicate an across group awareness of the in utero risk of smoking and substance abuse. However, participants reported much less awareness of the risks associated with socioeconomic deprivation. There is an argument that much socioeconomic risk is predetermined and fixed but there is also an argument that as the risk associated with socioeconomic deprivation was not commonly recognised in this study, potentially important information (such as nutrition) may have been 'selected out' of the reading material. At the very least it is suggested that relevancy of reading material may have been underpinned (and possibly limited) by the level of case knowledge.

Concerns were also raised about the method by which written information was presented. In particular, both groups reported concerns with the volume of material and the stage of pregnancy when information was given. From this 'packaged' approach there was a reported tendency to 'flick through' the material with each

group selecting their reading based on their self perceived need. As such, the data suggested little personal utility was obtained.

Concerns regarding the presentation and exchange of written antenatal information have been the subject of a number of studies. For example, two related studies, a randomised controlled trial (O’Cathain et al 2002) and a qualitative study (Stapleton, Kirkham and Thomas 2002) reviewed the effectiveness of ten evidenced based leaflets considered relevant by the Midwives Information & Resource Service (MIDIRS) and the NHS Centre for Reviews and Dissemination. The leaflets were designed to promote informed choice in women. The trial demonstrated that the leaflets were not effective in promoting informed choice and the qualitative data provided some detail on potential reasons for this: there was a lack of strategy for distributing the leaflets which meant that they tended to be given without discussion; and power differentials resulted in women adopting a compliant role.

My study was limited in terms of evidencing power differentials, although there was evidence of a lack of confidence in contacting the midwives at times. There was, however, evidence of a standardised approach to the distribution of written material. Some standardisation is to be expected within the current antenatal system as there is a professional need to ensure that women receive all information considered important (and in some cases mandatory) to be given in pregnancy. This professional need has led to the volume of leaflets currently provided to all antenatal women. However in my study, the data suggest that in a ‘one size fits all’ approach, the volume of material may actually have been counterproductive if women were only ‘flicking through’ the information based on their self determined relevance.

To some extent the standardised approach may also conflict with the recommendations of the Royal College of Obstetricians and Gynaecologists (RCOG 2004). Specifically, they recommend that antenatal care needs to be inclusive and flexible enough to meet the needs of all women and that the needs of the most excluded women are of equal if not more importance. However, currently, there may be a conflict between the self perceived needs of individual women and the normatively based schedule and delivery of antenatal education. In my own study the data suggested that timing of information was an important aspect of women's perceptions in pregnancy. As such, there may be an argument for staging the information or reviewing the format to ensure that important information is shared in more meaningful ways.

One approach towards reviewing the format of information may be to review the use of the internet. In my study, all women reported accessing the internet for pregnancy related information. This appeared to allow women to seek information which they perceived as relevant to them or their stage of pregnancy. Furthermore, across groups some women were using the internet as a substitute for contacting the midwifery service when they required specific information. Although not explicitly asked, the potential for inaccuracy was noted by some women from the least deprived group but, importantly, this potential for inaccuracy was not mentioned by women from the most deprived sample group.

Several recent studies have highlighted the use of the internet as a source of health related information (Pandey, Hart & Tiwary 2003, Lagan 2007, Larsson 2009). Crocco, Villasis-Keever & Jadad (2002) specifically reviewed studies looking at harm associated with internet obtained health information and found few reported cases. However, Ernst & Schmidt (2002) found advice to be at best misleading and at worst dangerous. Two pregnancy related studies provided

interesting findings. Lagan (2007) and Larsson (2009) both noted the increasing use of the internet to seek information to inform decision making. The findings also suggested that women perceived the internet information to be reliable, they rarely discussed the information with their midwives and (in Lagan's study), midwives did not have the necessary skills to appraise the information women were accessing.

The midwifery approach was also highlighted as a concern in relation to the structured antenatal classes. Antenatal classes were accessed by almost all women in the case groups (where second interview information was available). There were concerns presented from both groups regarding the format not being conducive to interaction such as asking questions. Four women from the most deprived group spoke positively about their antenatal classes in terms of content. However, only two cases in the least deprived group were entirely positive about the content of antenatal classes and again, the concern appeared to relate to the relationship between content and self determined need or relevance.

The relationship of content to need was noted in a study by Svensson, Barclay & Cooke (2006). They reviewed the literature in relation to antenatal classes and concluded that content was not based on need, there was no relationship to learning objectives and teaching styles were not learner-centred. They also undertook a longitudinal study using in depth interviews with a small Australian sample group and found there was an ongoing inflexibility in the antenatal approach. Furthermore, they concluded that women approached pregnancy with idiosyncratic concerns that were hampered by the professional adherence to 'a strict gestational timeline'. These findings, and my own, suggest a lack of progress in addressing earlier research findings going back to the early 1990s that noted the content of antenatal classes was not based on need or risk and was not adaptable to clients existing knowledge (O'Meara 1993, Nolan 1998).

Yet there is evidence that professional assessment and discussion of individual risk and knowledge may be beneficial. Edwards et al (2006) undertook a systematic review of 22 studies which looked at the process of communicating individual risk within clinical consultations. Although they found only weak evidence that personalised risk communication increased the uptake of screening tests they also found evidence suggesting personalised risk interventions improved risk perception and knowledge. This supported earlier work which showed a relationship between the presentation of information and the enhancement of informed choice (Rowe et al 2002) and a relationship between the interpretation of risk and the utility of information (Edwards & Elwyn 2001). Edwards & Elwyn (2001) also suggested that professionals were reluctant to use some risk decision aids (such as numerical presentations and verbal descriptions) because of a lack of understanding and also because of attitudinal barriers limiting patient involvement.

In conclusion, the evidence in relation to research question one suggests that there were similarities across groups in the perceived adequacy of the first contact and the utility placed on educational aspects. The available evidence tentatively suggests that the antenatal system may not be particularly effective in delivering care and information based on robust and individualised assessment of risk or of need. My findings, and the studies cited in this section, suggest that personalised information and a personalised approach may be valued by antenatal women and may enhance their awareness of risk and individual need. Specifically, effort may need to be directed towards individualised assessment that can detect socioeconomic risk and its underlying associations such as poor nutrition, in a similar manner to that currently directed towards smoking and substance abuse. Furthermore, based on the work by Edwards & Elwyn (2001) attention may also

need to be directed towards enhancing the professional approach to risk within clinical consultations.

An important point that has emerged from my data is the suggestion that without any normative support to identify need, women use their own knowledge and perception of risk to determine personal relevance. This self determined relevance may then inform and underpin their approach to the current standardised written educational material and antenatal education classes. In this context, the potential for important information to be missed is an area of concern.

### **8.5 Research Question Two**

*Is the current antenatal care provision perceived differently by women from different socio-economic backgrounds? If so, how does it differ?*

The preliminary analysis in chapter six and the substantive analysis in chapter seven were based on small numbers. However, both analyses suggest that, in my case studies, the current antenatal care provision was perceived differently by women from different socio-economic backgrounds. The tentative conclusion was that, whilst women from socioeconomically deprived areas accessed the service in concordance with women from the more affluent areas, there was much less concordance in the way the case groups perceived their antenatal care. The lack of concordance in perception of antenatal care appeared to be demonstrated by the way that both groups engaged, or did not engage, with the antenatal service. Although many factors may impact on engagement, it was analysed in my study in terms of language and personalisation, power and relationships and health literacy (utility of information, communication, and shared decision making). The key points are summarised below:



- Across the case groups, there was a suggestion that engagement with the antenatal service was distinguishable on a socioeconomic basis
- Cases from the higher socioeconomic group may have been more likely to engage with the antenatal service than cases from the lower socioeconomic group (though engagement in the higher socioeconomic group may have weakened as pregnancy progressed)

Specifically, three cases in the least deprived group failed to engage by the first trimester and there was a potential explanation for two of these related to atypical demographics or an unusually high level of prior knowledge. However, the data suggested that engagement (with one exception) did not appear to be initiated in the most deprived group by the end of the first trimester. Where data were available, there appeared to be no evidence that engagement subsequently developed later in pregnancy. Therefore, those who did not engage by the first trimester may not have engaged at all.

These tentative findings suggest an aspect of antenatal care that has not been identified or explored in terms of existing research. The following discussion will explore these findings using the same components as underpinned the substantive analysis. Each section will commence with the key points suggested by the data although there will be some cross cutting between sections. The discussion will conclude with a review of 'engagement, professional adaptability and individual need', particularly in relation to lower socioeconomic groups. This will be followed by potential implications for practice and a suggested way forward. At all stages it is recognised that the small sample size limits the strength of the findings.

### **8.5.1 Language and Personalisation**

The level of involvement, or activation, in their own care appeared to differ across case groups. In particular, in the most deprived group, the evidence suggested a greater likelihood of a detached perception from their own antenatal care and of not understanding the systemic processes. There was also some evidence in the most deprived group suggesting that the pattern of antenatal care did not meet their needs and, in some cases this left them feeling disappointed. Pregnancy has the potential to be a sensitive and emotional period and thus a personal experience for each woman. There may be a suggestion that this is not reflected in a personalised approach to care. There may also be a suggestion that the lack of personalised care can limit engagement.

The relationship between engagement and a personalised approach to care has been shown empirically. For example, Staniszewska & Henderson (2005), in a study that reviewed patients' evaluation of quality of care, identified that engagement was influenced by whether the system of care afforded them respect and dignity and understood their position, needs, experiences and concerns. More specifically, a lack of personalised care has been noted in quantitative and qualitative antenatal studies (Hildingsson & Radestad 2005, Stapleton et al 2002). Hildingsson & Radestad (2005), in a national Swedish cohort study which looked at emotional aspects of antenatal care (measured through questionnaires and likert scales) suggested that overall satisfaction with care related to how well women perceived their emotional needs were met. Importantly, women with a lower level of education were more likely to report being emotionally dissatisfied. The authors concluded that antenatal care could be improved by offering more individualised care based on need (Hildingsson & Radestad 2005). Stapleton et al's (2002) qualitative UK study suggested that midwives made little effort to explore or

accommodate individual information needs and as such, often disseminated irrelevant information. Stapleton et al also suggested that women rarely sought clarification on aspects of their care as 'powerful non verbal cues' from the midwives suggested they had little time.

Similar findings were suggested in my study with a number of women receiving information that did not meet their personal needs and reporting reluctance to seek advice or clarification. The problem of poor information may be further compounded when considering other findings by Stapleton et al (2002). Specifically, they suggested that it was very rare for midwives to address the topic of food consumption or explore women's existing knowledge. The literature review in chapter two highlighted that women from lower socioeconomic groups may be at greater risk of nutritional deficiency. In general, (though not in my study) they may also be less well educated. As such, not only is a lack of engagement potentially more likely in lower socioeconomic groups but the impact of this lack of engagement may be of concern.

### **8.5.2 Power & Relationships**

In my study, the data related to power and relationships was limited. However, relationship quality and a confidence imbalance were both factors that were noted in those who were non-engaged. For example, only one case in the most deprived group described a relaxed and informal approach that appeared not to be counteracted by negative factors. In other cases, the approach of the midwifery staff appeared to be perceived poorly in terms of the relationship that developed. A number of cases described an uncertainty and lack of confidence about contacting the midwife especially if this related to information that the case perceived she should already know or would 'feel stupid' asking. This evidence suggests that

there may be aspects of the clinician-client relationship that can impede the development of engagement.

There is published evidence that the clinical relationship can be influential in terms of engagement (Richards and Coulter 2007, Staniszewska & Henderson 2005). In particular, a 'paternalistic approach' was noted by Richards and Coulter (2007) in their review of national patient surveys in England between 2002 and 2007. They concluded that clinicians were slow to move away from paternalistic approaches and frequently missed opportunities to engage patients in their own care. Staniszewska & Henderson (2005) found that perceptions of power were particularly important to the development of engagement with negative perceptions leading to frustration among patients. Those who felt engaged with their care were those who felt they were on an equal footing with health professionals.

There is antenatal evidence that midwives, whether intentional or otherwise, may not engender this equal footing (Furber & Thomson 2008, Svensson, Barclay & Cooke 2007, Stapleton et al 2002, Rowe et al 2002). Specifically, it is suggested that midwives can attain a position of power over women through factors such as language use and controlling access to choices. The trial by Stapleton et al (2002) demonstrated very little chat or informal conversation. More specifically, Furber & Thomson (2008) in a qualitative study using interview data from 30 consultations suggested that midwives use words to legitimise their knowledge and understanding as a means of exercising power.

The importance of both the professional approach and the impact of language were explored in qualitative studies by McKenzie & Oliphant (2010) and McCourt (2006). These studies, each with forty participants, both suggested that strategies and approaches used by the midwives could unintentionally serve to enhance the

authority of the midwife. In some cases, a 'disciplinary style' emerged which gave less attention to client responses and was more inclined to steer discussion. This disciplinary style was more likely when there was a perceived social or cultural difference between patient and professional.

The social or cultural aspect is of particular importance to my study as non-engagement was more likely in one social grouping: those from lower socioeconomic backgrounds. There is empirical evidence of a relationship between power and socioeconomic status in antenatal and parenting research (Rankin, Backett-Millburn & Platt 2009, Kraus and Keltner 2009, De Marco, Thorburn & Zhao 2008, Dumas et al 2008). Collectively, these studies point to the possibility that there can be perceived discrimination on the basis of socioeconomic deprivation; a perceived match between the socioeconomic status of women and the socioeconomic status of the clinician could predict attendance, retention and quality of participation; and health professionals can accurately predict socioeconomic background through observation.

An important point to note here is that recognition of socioeconomic status may not necessarily influence the subsequent care. This was suggested in an antenatal study by Pearson and Thurston (2006) which looked at engagement within a Sure Start service in England. This service was specifically designed to improve antenatal engagement in socioeconomically deprived women through the development of more client centred parent education classes. It was distinct from mainstream antenatal care and took referrals from mainstream midwifery staff. The results suggested that some midwifery staff never referred eligible women into the Sure Start service. This may suggest a professional failure to recognise those who were eligible (i.e. socioeconomically deprived women) or a professional attitude that mainstream antenatal services could meet the needs of all women.

The tentative results from my study suggest that irrespective of whether current antenatal services are able to recognise socioeconomic need, they do not necessarily distinguish care based on that need. Through a lack of engagement, they may also be failing to meet the needs of some women, particularly those in the lower socioeconomic group.

### **8.5.3 Health Literacy**

The health literacy replication analysis, (with one exception) suggested that no case in the most deprived case group presented any evidence that their communication and interaction with the antenatal service could support engagement particularly in terms of shared decision making. Therefore, other than a positive perception of structured antenatal education, most of the lower socioeconomic cases reported a lack of engagement.

The relationship to prior knowledge may be important here. The data suggested there was no attempt made to assess prior knowledge in either case group. In some cases within the least deprived group, where there was a high level of knowledge, this may have influenced their self determined needs and possibly weakened engagement towards the final trimester. However, some of the cases from the most deprived group reported their existing knowledge to be overestimated. This suggestion of over-estimation may illustrate three possibilities: the levels of health literacy may have been low in women from the lower socioeconomic group; those women may have based their antenatal reading around their low level of health literacy; and the low level of health literacy would be unsupported by midwifery staff who may have been assuming knowledge that did not exist.

It is suggested that there is a relationship between health literacy and engagement (Parker, Ratzan & Lurie 2003). In addition, as stated earlier, health literacy levels are known to be lower in socioeconomically deprived communities (Andrus & Roth 2002; Sihota & Lennard 2004). The data in my study, albeit based on small numbers, may support this. Furthermore, health literacy is now being linked to health outcomes with evidence suggesting that adapting approaches to suit those with low literacy improves health outcomes in chronic disease (Schillinger 2003).

As yet, the importance of health literacy and engagement in antenatal terms (particularly outcomes) has not been researched. However, the relationship between components of health literacy such as prior knowledge, decision making and engagement has been noted empirically (Furber & Thomson 2008, Green et al 2004, Pilnick 2004, Stapleton et al 2002). These studies suggested that knowledge adequate for decision making was not being achieved; midwives often 'directed' antenatal decisions to ensure that they complied with local preferred policies or midwife preference; and social and cultural inequalities existed in terms of knowledge about screening tests. Specifically, the Pilnick (2004) study suggested that decisions women take may be linked to their own external perceptions of risk rather than to information given by midwives. In my study, the discussion on risk in section 8.4.2, adds to this being an interesting and potentially important finding.

What my study may also add is the suggestion that the current professional antenatal approach, particularly in relation to components of health literacy such as communication, assessment of prior knowledge and decision making, is not adaptive to individual need. Those who may be more affected by this inadaptability are women from lower socioeconomic backgrounds.

#### **8.5.4 Engagement, Adaptability and Individual Need**

The findings in the above sections tentatively suggest that some women from lower socioeconomic backgrounds may be failing to engage with the antenatal service. This may be evident at least in terms of language and personalisation and health literacy. There is also existing evidence to support the feasibility of these findings in terms of language and personalisation, power and relationships and health literacy. My data suggest that there may be two main factors influencing each of these components of engagement: individual need and the adaptability of professionals to assess and address this need.

In terms of individual need, there is systematic review evidence that individual women are aware of what they need and want from their antenatal care: “flexible, individualised antenatal services with continuity of care, presented in an accessible format they can understand” (Lavender et al 2007). However, in terms of professional adaptability, there is evidence that suggests that this may be limited at times. For example, Tandon et al (2008) looked at engagement in terms of response to home visiting programmes to families with young children. This study was not antenatally focused but it did illustrate that without ‘explicit protocols’ that structured how staff elicited specific family needs and described the available services, there was considerable variation in how staff explained the available programmes to their patients. In the literature review of this thesis the point was raised that there are no antenatal protocols that inform care for risks such as low socioeconomic status. This may be one reason for the potential for staff to overlook individual and socioeconomically based needs in preference to following a standardised model of care.



There is evidence for the inability to meet socioeconomic need in relation to antenatal care. The Parliamentary Health Select Committee (2003) in their review on inequalities in antenatal care, found 'strong evidence' that good practice in the provision of services that were 'sensitive and responsive to the particular needs of different groups', was not widespread. The report found that many 'disadvantaged women' never attained a 'sense of control' in relation to their own antenatal care. Specifically, disadvantaged women perceived that the focus was "exclusively on the health of their babies, to the detriment of their experience of pregnancy and birth" (p50).

To some extent, there might be an argument that, within a system such as the National Health Service, some lack of individualised care (and thus lack of engagement) may be expected. The antenatal service is only one (multi-layered) system within a larger (multi-layered) system that has evolved over the years in response to the objectives and demands of policy drivers. Currently, in Scotland, the objectives and demands are set out in the Health Improvement, Efficiency, Access and Treatment targets (Scottish Government 2008c). Each NHS Board must state how they will develop and implement local services to meet these targets and they will be 'publicly monitored and evaluated' as to their success or failure. The targets are undoubtedly important but they serve to represent the reality that NHS systems must respond to pressures other than patient demand and patient need.

These current systemic pressures may be focussing professional attention on the 'end product' or outcome rather than the process that works towards the outcome. Measuring attainment in terms of output activity rather than input activity may inhibit engagement by diverting energy away from what works in terms of personal antenatal experience to what works in terms of antenatal processes. The

hypothesis by Wetherell, Taylor & Yates (2001) discussed in section 7.2.2, is interesting here. They consider that some groups are less able to adapt to certain systems and structures and, consequently, experience less freedom within these systems. It may be that the 'systemic pressure', which cascades across the NHS system, is one reason that NHS staff "simply do not have the time to engage patients more actively" (Coulter 2006 p28). My data suggests those most at risk in this systemic failing may be from lower socioeconomic backgrounds.

### **8.5.5 Implications for Practice**

The literature review in chapter two outlined a wealth of statistics that indicate that women from lower socioeconomic backgrounds are at much greater risk of negative pregnancy outcomes. Unfortunately, the most recent statistics available in Scotland (NHS Quality Improvement Scotland 2009), show very little improvement in these outcomes. Specifically, NHS Quality Improvement Scotland records:

"Deprivation is multifactorial. The causes of higher rates of premature delivery and the increased death rates among the more socio-economically deprived are complex, with many interacting factors. It is encouraging that mortality rates are falling across all deprivation categories but there is little evidence that the gap between the lowest and highest deprivation quintiles is narrowing. The effect of deprivation on perinatal mortality and morbidity needs further monitoring and should form part of future routine reporting" (p30).

Thus, women from lower socioeconomic backgrounds are regarded as vulnerable and a priority in terms of targeted clinical practice and improved clinical outcomes. However, this priority may need to extend beyond directing effort to improve attendance for antenatal care. My research tentatively suggests that when socioeconomically deprived women attend antenatal care there is little evidence that their individual needs are being adequately assessed or addressed. A potential

outcome is that women from socioeconomically deprived backgrounds may not be engaging with the antenatal service. However, engagement is recognised as an important measure of patient satisfaction and predictor of treatment outcome (Nix, Bierman & McMahon 2009, Staniszewska & Henderson 2005). Specifically, Staniszewska & Henderson (2005) consider that by understanding the influences of engagement, health professionals can gain a new awareness of negative aspects of patient care.

Nix, Bierman & McMahon (2009) consider that quality of participation and involvement is perhaps the best predictor of clinical productiveness and treatment response. It is these aspects of engagement that underpinned the Wanless Report (2002) and its strategic position that engaging patients in their own health care was the key to sustainability of health care systems and improved health outcomes (Coulter 2006). However, Nix, Bierman & McMahon consider that, at present, there is more empirical evidence about improving attendance than improving engagement in terms of high quality participation. This is unfortunate when it is recognised that “a significant lack of patient engagement is experienced by one third of patients in all surveys, rising to half or more in some areas of care” (Richards & Coulter 2007 p19). My study may have expanded this finding with the data suggesting almost all of those from a low socioeconomic background did not engage.

If this is indeed the case, then the implications for practice may be profound. Poorer health outcomes are experienced by those from low socioeconomic backgrounds. Attending for care is not a sufficient indicator of the effectiveness of that care and, as health professionals, more effort may need to be focused on the way that care is provided. For if the association between socioeconomic deprivation and engagement is not strengthened then the potential for negative

treatment outcomes in the most deprived group may persist. The first stage towards strengthening the association may be the identification of those who are at greater risk of non engagement.

#### **8.5.6 The Identification of those at Risk of Low Engagement**

From my research, three tentative findings have emerged: not every woman who 'fully attends' antenatal care may 'fully engage' with the service; in a higher number of cases, those who do not engage may be more likely to come from socioeconomically deprived backgrounds; and it would seem that the identification of those most at risk of non engagement may be able to be made at the earliest stage of antenatal contact. With respect to the latter point, the research process I followed, suggested that a measure as simple as associating a postcode with easily accessible deprivation ranking data may identify those women (and potentially other groups of patients and clients) that may be at greater risk of non-engagement.

This identification is a potentially important and currently clinically unused strategy. Clinical staff do not have the opportunities experienced by other staff, such as community nurses, to visualise area based socioeconomic deprivation by virtue of working within external environments. This visual awareness supports the focus for targeting effort and care towards need. In a clinical environment, socioeconomic deprivation is often much less tangible and, therefore, there may be less awareness of socioeconomic deprivation when planning care. However, awareness could be enhanced by developing professional understanding of the association underpinning deprivation ranking and using the SIMD interactive facility to identify those who may need a less standardised approach to care planning. This may be an area worthy of future research.

### **8.5.7 The Way Forward**

Identifying those at risk of non engagement is only the first step. Effort may have to be directed towards strategies that can initiate and sustain engagement with those who are not engaging at present. At the strategic or organisational level, there may need to be recognition of the importance of engagement in terms of health outcomes. The importance of embedding the concept of engagement into core medical and nursing curricula has already been advocated (Coulter 2006) as has the importance of health literacy training for health professionals (Parker, Ratzan & Lurle 2003). However, until there are strategic incentives to develop patient engagement strategies (in terms that go beyond the tokenistic patient consultation approaches) it seems there is unlikely to be a major shift in the current organisational culture.

Any lack of organisational strategy makes the professional approach more important. Within current organisation cultures, there are aspects of professional behaviour that may be developed and utilised to promote patient engagement. An interesting concept stems from the work of Mugavero (2008) who has studied improving engagement in patients with HIV. Mugavero argues that engagement should be conceptualised as a continuum from 'unawareness to full participation'. As health professionals the objective is to move people forward on this continuum by identifying modifiable factors that can be targeted to improve engagement and thus improve health outcomes. The factors that can be targeted include personal and social characteristics as well as clinical and systemic factors such as appointment times and the professional approach and attitude.

The approach by health professionals may potentially be one of the most important modifiable factors in terms of initiating engagement. Positive or negative aspects of

communication featured frequently in the comments made by participants in my study. Furthermore, research on engagement has pointed to several professional strategies that may be adopted. For example, it has been considered that encouragement, empathy, social conversation, summarising consultations, familiarisation, gaining acceptance and relationship building can all enhance engagement (Rankin, Backett-Milburn & Platt 2008, Beeber et al 2007).

Grote et al (2007) consider that any engagement strategy needs to address stigma, consider client understanding and accommodate individual styles of self reliance. Finally, professional strategies that specifically address issues of low health literacy have also been shown to be effective (Adams et al 2009). Health literacy is now an integral part of the World Health Organisation health promotion strategy. This is due to a belief that those with low health literacy are not able to function as informed consumers and thus have adverse health outcomes (Parker, Ratzan & Lurie 2003). Adams et al (2009) consider that the assessment of health literacy is the responsibility of health systems and those working in them. This is because it is the level of health literacy that should determine the parameters of the clinical interaction such as time, setting, communication style and the content and provision of information. It may be too time consuming to assess all antenatal women in terms of health literacy. However, identifying and concentrating on women from low socioeconomic backgrounds may potentially be a starting point. From this basis, attention could be paid to strategies such as 'teach-back' to verify understanding, using plain language and developing educational material geared to low literacy individuals (Adams et al 2009).

The literature on engagement described in this chapter is relatively recent. As such, it is perhaps understandable that engagement enhancing strategies do not feature in antenatal care. However, antenatal care is an important opportunity for

intervention if the content and method are right (Lavender et al 2007). Getting this content and method right is not without its challenges. Specifically, Lavender et al (2007) state that “given the heterogeneity between and within groups it is difficult to set measurable standards across the whole pregnant population” (p6). Thus they concluded that different antenatal standards may be needed for different antenatal populations. From my study, it is suggested that one approach to developing appropriate antenatal standards, or protocols, may be to recognise the impact of engagement as a health improvement strategy, integrate an approach that identifies those at risk of non-engagement and deliver a level of antenatal care that has the potential to engage all women. This approach can only be informed by a future research agenda specifically addressing engagement, antenatal care and pregnancy outcomes.

The final chapter of this thesis will conclude my findings, summarise what my thesis adds to the current knowledge base, and provide recommendations for clinical practice and further research.

## **CHAPTER 9 CONCLUSION & RECOMMENDATIONS**

### **9.1 Introduction**

In the final chapter of my thesis I will state my tentative conclusions and highlight the areas where I think my research has added to the current body of knowledge. The thesis will end with recommendations for further research.

### **9.2 Conclusion of Thesis**

Several interrelating factors emerged from the results of this thesis. Primarily, the antenatal service appeared to be geared towards a generic approach that had the effect of standardising the care that women received. The outcome of this standardisation was that women from either socioeconomic extreme could perceive an irrelevance to the provision of written educational information. Whether this perceived irrelevance was based on sound assessment of need and risk is debatable as the evidence suggested that perception of risk in 'low obstetric risk pregnancies' was largely based on smoking and substance misuse status. This narrowing of risk may have been evidenced in both the antenatal women and the midwifery approach for at no point did women report that socioeconomic status featured as part of their perception of need or the antenatal adaptation of care.

However, it was socioeconomic status that appeared to be influential in determining how well individual women engaged with the antenatal service. For despite accessing the antenatal service in a similar manner there appeared to be a difference in how women perceived and interacted with this service. Women from higher socioeconomic backgrounds may have been more likely to engage with the antenatal service than women from lower socioeconomic backgrounds. This illustrates the equality versus equity debate. Both groups of women were accessing



the service on an equal basis, but national pregnancy outcome statistics indicated that the need for an effective service was greater in those who came from socioeconomically deprived backgrounds.

Engagement levels can predict and improve health outcomes (Nix, Bierman & McMahon 2009, Staniszewska & Henderson 2005). As such, a more equitable antenatal service may be developed through the early identification of those women at risk of non engagement. This early identification, in conjunction with an adaptation of care towards the modifiable aspects of engagement such as health literacy, may go some way to addressing the inequity in health outcomes.

Finally, the findings in this thesis relate to socioeconomically deprived women (as identified through one standardised measure) who did attend for antenatal care. As such, they may not have represented the most socially excluded women from socioeconomically deprived backgrounds. Yet even these women who attended for antenatal care failed to receive a service that met their needs. This may well illustrate that the antenatal service is a long way from meeting the needs of the most vulnerable antenatal women.

### **9.3 Key Contributions of this Thesis to Current Knowledge Base**

There are several areas where my research supports existing research though none of these aspects has yet been fully addressed in clinical antenatal practice. For example, it is already recognised that the volume of antenatal educational material can be overwhelming and the approach to antenatal care inflexible (Svensson, Barclay & Cooke 2006). Similarly, the inadequacy of the first antenatal contact and the ensuing delay in contact with the midwifery service was noted by Soltani & Dickinson (2005).

My research also suggests that the greater impact of the inflexibility and inadequacy of contact may be directed towards women of lower socioeconomic groups. More importantly, my research appears to suggest that inadequacy of contact may be a feature that persists throughout antenatal care for women from the most deprived socioeconomic areas. The reasons for this may relate to a lack of engagement with the antenatal service particularly in terms of health literacy underpinned by a perceived lack of need based on risk; a professional lack of adequate communication; and an opportunity for shared decision making.

#### **9.4 Summary of Main Findings and New Knowledge**

The findings from this small case study suggest that:

- The first antenatal contact may not meet needs and an early opportunity to provide evidenced based information is being wasted
- There appears to be a low utility placed on educational material, particularly when it does not relate to self perceived need
- There appears to be a low utility placed on antenatal education which tends to relate to the format and delivery of these classes and the association with perceived relevance and need
- Women in the higher socioeconomic group may be more likely to engage with the antenatal service though the engagement may diminish as pregnancy progresses
- Women in the lower socioeconomic group may be less likely to engage with the service
- Women who do not engage by the first trimester may not engage at all with the antenatal service

## 9.5 Recommendations for Future Research

The sample size in my study was small and thus findings are tentative and further research is needed. The following research agenda is suggested:

- The adequacy of the first antenatal contact should be reviewed
- There should be a review of educational and other strategies for the provision of written information that includes addressing the format, presentation and staging of material
- Consideration should be given to the early assessment of deprivation ranking status and health literacy levels in order to identify women at risk of non-engagement and poorer pregnancy outcomes
- Strategies for improving and sustaining engagement should be developed and assessed in clinical and organisational practice
- Engagement strategies may have to include training for professional staff in relation to communication, health literacy and assessment of prior knowledge

Further research is recommended that could include the following:

- What perceptions do midwives have of patient care and experience?
- How and why do health professionals perceptions differ or reflect patients' views and perceptions?
- Will identification of deprivation ranking increase professional awareness of socioeconomic risk in pregnancy and improve engagement?
- Will early assessment of health literacy levels improve subsequent engagement in antenatal care?

- Does the socioeconomic association with non-engagement extend into other areas of clinical practice?

## References

Acheson D (Chair) (1998) *Independent Inquiry into Inequalities in Health*. Stationery Office, London

Adams, RJ, Stocks NP, Wilson DH, Hill CL (2009) Health literacy: a new concept for general practice? *Australian Family Physician* 38 3 144

Alderdice F, McNeill J, Rowe R, Martin D, Dorman J (2008) Inequalities in the reported offer and uptake of antenatal screening. *Public Health* 122 42-52

Anderson Nybo AM, Mortenson LH (2006) Socioeconomic inequality in birth outcomes: what do the indicators tell us and where do we find the data? *CMAJ* 174(10) 1429-1430

Andrus MR, Roth MT (2002) Health Literacy: a review. *Pharmacotherapy* 22 (3) 282-302

Angrosino MV, Mays de Perez KA (2000) Rethinking Observation. In Denzin & Lincoln (Eds) (2003) *Collecting & Interpreting Qualitative Materials*. Sage, California

Anthony S, Jack S (2009) Qualitative case study methodology in nursing research: an integrative review. *Journal of Advanced Nursing* 65, 6 1171-1181

Aveyard P, Manaseki S, Chambers J (2002) The relationship between mean birthweight and poverty using the Townsend deprivation score and the Super Profile classification system *Public Health* 116 308-314

Banta D (2003) *What is the efficacy/effectiveness of antenatal care and the financial and organisational implications?* Copenhagen, WHO

Barker DJP, Osmond C, Winter, Margetts B, Simmonds SJ (1989) Weight in Infancy and Death from Ischaemic Heart Disease. *The Lancet* 34, 8663 p 577-580

Barker DJP (Ed) (1992) *Foetal and infant origins of adult disease*. BMJ Publications, London:

Barker DJP, Forsen T, Uutela A, Osmond C, Eriksson JG (2001) Size at birth and resilience to effects of poor living conditions in adult life: a longitudinal study. *BMJ* 323 1-5

Barker DJP, Lackland DT (2003) Prenatal influences on stroke mortality in England and Wales. *Stroke* 34 1598-1603

Barker DJP (2003b) The developmental origins of adult disease. *European Journal of Epidemiology* 18 8 733-736

Barker DJP, Eriksson DJ, Forsen T, Osmond C (2005) Infant growth and income 50 years later. *Archives of Disease in Childhood* 90 3 272-273

Barker DJP (2006) Adult consequences of fetal growth restriction. *Clinical Obstetrics & Gynecology* 49 2 270-283

- Basso O, Olsen J, Johansen AM, Christensen K (1997) Change in social status and risk of low birthweight in Denmark: populations based cohort study *BMJ* 315 1498-1506
- Basso O, Olsen J, Knudsen LB, Christensen K (1998) Low birthweight and preterm birth after short interpregnancy intervals. *American Journal of Obstetrics and Gynaecology* 178 259-263
- Baum FE, Ziersch AM (2003) Social Capital. *J Epidemiol Community Health* 57 320-323
- Beaglehole R, Bonita R (1998) Public Health at the Crossroads: Which way forward? *Lancet* 351 9102
- Beeber LS, Cooper C, Van Noy BE, Schwartz TA, Blanchard HC, Canuso R et al (2007) Flying under the radar: engagement and retention of depressed low income mothers in a mental health programme. *Advances in Nursing Science* 30, 3, p221-234
- Bonellie SR, Raab GM (1997) Why are babies getting heavier? Comparison of Scottish births from 1980-1992. *BMJ* 315 1205
- Bonellie SR (2001) Effect of maternal age, smoking and deprivation on birthweight. *Paediatric and Perinatal Epidemiology* 15 19-26
- Bramley G (2005) Scotland's Index of Multiple Deprivation: assessing its statistical validity, and its appropriateness as a mechanism for targeting resources on deprivation. *Research Report to the Scottish Parliamentary Corporate Body*. Heriott Watt University, Edinburgh
- Breslau N, Chilcoat HD (2000) Psychiatric sequelae of low birth weight at eleven years of age. *Biol Psychiatry* 47 1005-1011
- Bull J, Mulvihill C, Quigley R (2003) *Prevention of low birth weight: assessing the effectiveness of smoking cessation and nutritional interventions*. Health Development Agency Evidence Briefing 1<sup>st</sup> Edition, London
- Bull J, McCormick G, Swann C, Mulvihill C (2004) *Antenatal and postnatal home visiting programmes: a review of reviews Evidence Briefing*. Health Development Agency, London
- Bunton R, Nettleton S, Burrows R (Eds) (1995) *The Sociology of Health Promotion: critical analyses of consumption, lifestyle and risk*. Routledge, London
- Brettingham M (2005) Men's life expectancy is catching up with women's. *BMJ* 331 656
- Cambridge Dictionaries (2009) *Cambridge Dictionaries Online* [online]. Available <http://dictionary.cambridge.org/> [01/09/09]
- Carabin H, Cowan LD, Beebe LA, Skaggs VJ, Thompson D, Agbangla C (2005) Does participation in a nurse visitation programme reduce the frequency of adverse perinatal outcomes in first time mothers? *Paediatric and Perinatal Epidemiology* 19 194-205

- Carstairs V, Morris R (1989) Deprivation and Mortality: an alternative to social class *Community Medicine* 11 210-19
- Carstairs V, Morris R (1991) *Deprivation and Health in Scotland*. Aberdeen University Press, Aberdeen
- Center for Disease Control (2009). *Infant Mortality and Low Birth Weight*. [Online]. Available: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5127a1.htm#tab1> [16/01/10]
- Collingwood Bakeo A (2004) Trends in live births by mother's country of birth and other factors affecting low birthweight in England & Wales 1983 -2001. *Health Statistics Quarterly* 23
- Collingwood Bakeo A (2006) Investigating variations in infant mortality in England & Wales by mother's country of birth 1983 -200. *Paediatrics & Perinatal Epidemiology* 20 127-139
- Collins JW, David RJ (1997) Urban violence and African-American pregnancy outcome: an ecologic study. *Ethnic Disease* 7 184-190
- Collins JW, David RJ Symons R, Handler A, Wall S, Andes S (1998) African-American mothers' perception of their residential environment, stressful life events and very low birth weight. *Epidemiology* 9 286-289
- Correa A, Gray RH, Cohen R, Rothman N, Shah F, Seacat H et al (1996) Ethylene glycol ethers and risks of spontaneous abortion and subfertility. *American Journal of Epidemiology* 143 707-717
- Coulter A (2006) *Engaging Patients in their Healthcare: How is the UK doing relative to other countries?* Picker Institute, Oxford
- Coulter A, Ellins J (2006) *Patient Focused Interventions: a Review of the Evidence*. Health Foundation, London
- Coulter A, Ellins J (2007) Effectiveness of strategies for informing, educating and involving patients. *BMJ* 335 24-27
- Coulter A, Parsons S & Askham J (2008) *Where are the patients in decision making about their own care?* Policy Brief. World Health Organisation, Geneva
- Crocco AG, Villasis-Keever M, Jadad AR (2002) Analysis of cases of harm associated with use of health information on the internet. *Journal of the American Medical Association* 287, 21 2869-2871
- Crombie IK, Irvine L, Elliot L, Wallace H (2005) *Policies to reduce inequalities in health in 13 developed countries*. NHS Health Scotland, Dundee
- Cropper S (2002) *What contributions might ideas of social capital make to policy implementation for reducing health inequalities?* Paper to HDA Seminar Series, London
- Dahlgren G, Whitehead M, (1991) *Policies and strategies to promote social equity in health*. Institute of Futures Studies, Stockholm

- Dallas C, Deery R (1997) Too much like school: social class, marital status and attendance/non-attendance at antenatal classes. *Midwifery* 13 139-145
- Dejin-Karlson E, Hanson BS, Ostergren PO, Lindgren A, Sjoberg NO, Marsal K (2000) Association of a lack of psychosocial resources and the risk of giving birth to small for gestational age infants: a stress hypothesis. *British Journal of Obstetrics and Gynaecology* 106 834-841
- Delpisheh A, Attia E, Drammond S, Brabin BJ (2005) Adolescent smoking in pregnancy and birth outcomes. *European Journal of Public Health* 16(2) 168-172
- DeMarco M, Thorburn S, Zhao W (2008) Perceived discrimination during prenatal care, labour and delivery: an examination of data from the Oregon pregnancy risk monitoring system 1998-1999, 200 and 2001. *Research and Practice* 98, 10 1818-1821
- Denzin NK, Lincoln YS (2000) *Handbook of Qualitative Research*. California, Sage
- Denzin NK, Lincoln YS (2003) *Collecting & Interpreting Qualitative Materials*. California, Sage
- Department of Health and Social Security (1980) *Inequalities in Health: the report of a working group (the Black Report)*. HMSO, London
- Dorling D (1997) *Death in Britain: how local mortality rates have changed 1950s-1990s*. Joseph Rowntree Foundation, York
- Downe S, Finlayson K, Walsh D, Lavender T (2009) Weighing up and balancing out: a meta-synthesis of barriers to antenatal care for marginalised women in high income countries. *BJOG: An International Journal of Obstetrics & Gynaecology* Vol 116, 4, 518 - 529
- D'Souza L, Garcia J (2004) Improving services for disadvantaged childbearing women. *Child: Care, Health & Development* 30 6 599-611
- Dumas JE, Morleand AD, Gitter AH, Pearl AM, Nordstrom AH (2008) Engaging parents in preventative parenting groups: do ethnic, socioeconomic and belief match between parents and group leaders matter? *Health Education & Behaviour* 35 (5): 619-33
- Edwards AGK, Elwyn GJ (2001) Understanding risk and lessons for clinical communication about treatment preferences. *Quality Health Care* 10 i9-i13
- Edwards AGK, Evans R, Dundon J, Haigh S, Hood K, Elwyn GJ (2006) Personalised risk communication for informed decision making about screening tests. *Cochrane Database of Systematic Reviews* Issue 4. Art. No.: Cd001865
- Edwards M, Davies M, Edwards A (2009) What are the external influences on information exchange and shared decision making in healthcare consultations: a meta-synthesis of the literature. *Patient Education and Counselling* 75 37-52
- Elliott P, Briggs D, Morris S, de Hoogh C, Hurt C, Jenson T et al (2001) Risk of adverse birth outcomes in populations living near landfill sites. *BMJ* 323 August 2001 363-68



- Emanuel I, Leisenring W, Williams A, Kimpo C, Estee S, O'Brien W, Hale CB (1999) The Washington State intergenerational study of birth outcomes: methodology and some comparisons of maternal birthweight and infant birthweight and gestation in four ethnic groups. *Paediatric and Perinatal Epidemiology* 13 352-371
- Eriksson DJ, Osmond C, Forsen T, Barker DJP (2003) Pathways of infant and childhood growth that lead to type 2 diabetes. *Diabetes Care* 26 11 3006-3010
- Ernst K, Schmidt K (2002) *Health risks over the internet: advice offered by 'medical herbalists' to a pregnant woman*. Department of Complementary Medicine, Exeter
- Expert Group on Acute Maternity Services (EGAMS). (2002) *Expert Group on Acute Maternity Services Reference Report*. Scottish Executive Health Department Edinburgh
- Fairclough N (2001) The Discourse of New Labour: Critical Discourse Analysis: In Wetherall M, Taylor S, Yates SJ (eds) (2001) *Discourse as Data: a Guide for Analysts*. Sage, London
- Fairley L, Leyland AH (2006) Social class inequalities in perinatal outcomes: Scotland 1980 – 2000. *J Epidemiol Community Health* 60 31-36
- Falkner B, Hulman S, Kushner H (2003) Effect of birth weight on blood pressure and body size in early adolescence. *Hypertension* 43 203-207
- Farley TA, Mason K, Rice J, Habel JD, Scribner R, Cohen DA (2006) The relationship between the neighbourhood environment and adverse birth outcomes. *Paediatric and Perinatal Epidemiology* 20 188-200
- Fontana A, Frey JH (2000) The Interview. In Denzin NK, Lincoln YS (2000) *Handbook of Qualitative Research*. Sage, California
- Fontana A, Frey JH (2003) The Interview. In Denzin NK, Lincoln YS (2003) *Collecting & Interpreting Qualitative Materials*. Sage, California
- Foster HW (1997) The enigma of low birth weight and race. *The New England Journal of Medicine* 337 1232-1233
- Fowles ER, Gabrielson M (2005) First trimester predictors of diet and birth outcomes in low income pregnant women. *Journal of Community Health Nursing* 22 117-130
- Frankel S, Elwood P, Sweetnam P et al (1996) Birthweight, body mass index in middle age, and incident coronary heart disease. *The Lancet* 348 1478-1480
- Furber CM, Thomson AM (2008) The power of language: a secondary analysis of a qualitative study exploring English midwives' support of mother's baby feeding practice. *Midwifery* doi:10.1016/j.midw.2008.05.003
- Gadamer HG (2004) *Truth and Method 3<sup>rd</sup> Edition*. Continuum, Wiltshire
- General Register Office for Scotland (2009) *Scotland's Census Results Online*. [Online]. Available at <http://www.scrol.gov.uk/scrol/common/home.jsp> [15/08/09]

- Gennaro S (2005) Overview of current state of research on pregnancy outcomes in minority populations. *American Journal of Obstetrics and Gynaecology* 192 3-10
- Glazier RH, Elgar FJ, Goel V, Holzapfel S (2004) Stress, social support and emotional distress in a community sample of pregnant woman. *Journal of Psychosomatic Obstetrics and Gynaecology* 25 247-255
- Godfrey K, Robinson S, Barker DJP, Osmond C, Cox V (1996) Maternal nutrition in early and late pregnancy in relation to placental and foetal growth. *BMJ* 312 410-414
- Gold R, Connell FA, Heagerty P, Bezruchka S, Davis R, Cawthon ML (2004) Income inequality and pregnancy spacing. *Social Science & Medicine* 59 1117-1126
- Goldenberg RL, Cliver SP, Mulvihill FX, Hickey CA, Hoffman HJ, Klerman LV, Johnson MJ (1996) Obstetrics: medical, psychosocial and behavioural risk factors do not explain the increased risk for low birthweight among black women. *American Journal of Obstetrics and Gynaecology* 175 1317-1324
- Gomm R, Hammersley M, Foster P (eds) (2000) *Case Study Method*. Sage, London
- Grady MA, Bloom KC (2004) Pregnancy outcomes of adolescents enrolled in a centering pregnancy programme. *Journal of Midwifery and Women's Health* 49 5 412-420
- Green JM, Hewison J, Bekker HL, Bryant LD, Cuckle HS (2004) Psychosocial aspects of genetic screening of pregnant women and newborns: a systematic review *Health Technology Assessment* 2004; Vol. 8: No. 33
- Gregory KD, Davidson E (1999) Prenatal care: who needs it and why? *Clinical Obstetrics & Gynecology* 42 (4) p725
- Griffin SJ, Kinmonth AL, Veltman MWM, Gillard S, Grant, J, Stewart M (2004) Effect on health related outcomes of interventions to alter the interaction between patients and practitioners: a systematic review of trials. *Annals of Family Medicine* 2,6 595-607
- Grote NK, Zuckoff A, Swartz H, Bledsoe SE, Giebel S (2007) Engaging women who are depressed and economically disadvantaged in mental health treatment. *Social Work* 52 (4) 295-307
- Guba EG (Ed) (1990) *The Paradigm Dialogue*. Sage, California
- Gubrium JF, Holstein JA (2000) Analysing Interpretive Practice. In: Denzin NK, Lincoln YS (2000) *Handbook of Qualitative Research*. Sage, California
- Gudmundsson S, Bjorgvinsdottir L, Molin J, Gunnarsson G, Marsal K (1997) Socioeconomic status and perinatal outcome according to residence area in the city of Malmo. *Acta Obstetrica et Gynecologica Scandinavica* 76 318-323

- Gunnell DJ, Frankel S, Nanchahal K, Braddon FEM, Davey-Smith G (1996) Lifecourse exposure and later disease: a follow up study based on a survey of family diet and health in pre war Britain (1937-1939). *Public Health* 110 85-94
- Hammersley M (2008) *Questioning Qualitative Inquiry*. Sage, London
- Hanson L, VandeVusse I, Roberts J, Forristal, A (2009) A Critical Appraisal of Guidelines for Antenatal Care: Components of Care and Priorities in Prenatal Education. *J Midwifery Women's Health*; 54:458–468
- Hart A, Lockey R (2002) Inequalities in health care provision: the relationship between contemporary policy and contemporary practice in maternity services in England. *Journal of Advanced Nursing* 37 485-493
- Hart CL, Taylor MD, Davey-Smith G, Whalley LJ, Starr JM, Hole DJ, Wilson V, Deary IJ (2003) Childhood IQ, social class, deprivation and their relationship with mortality and morbidity risk in later life: prospective observational study linking the Scottish Mental Survey 1932 and the midspan studies. *Psychosomatic Medicine* 65 877-883
- Haslam C, Lawrence W (2004) Health related behaviour and beliefs of pregnant smokers. *Health Psychology* 23 5 486- 491
- Healthcare Commission (2007) *Women's experiences of maternity care in the NHS in England*. Healthcare Commission, London
- Hertzman C, Power C (2004) Child development as a determinant of health across the life course. *Current Paediatrics* 14 438-443
- Hibbard JH, Cunningham PJ (2008) *How engaged are consumers in their health and health care, and why does it matter?* Research Brief. Center for Studying Health System Change No 8 October 2008
- Hildingsson I, Radestad I (2005) Swedish women's satisfaction with medical and emotional aspects of antenatal care. *Journal of Advanced Nursing* 52 3 239-249
- Hodnett ED, Fredericks S (2003) Support during pregnancy for women at increased risk of low birthweight babies. *The Cochrane Database of Systematic Reviews* Issue 3 CD000198
- Hoffmann S, Hatch MC (1996) Stress, social support and pregnancy outcome: a reassessment based on recent research. *Paediatric and Perinatal Epidemiology* 10 4 340-405
- Hollowell J, Kurinczuk JJ, Oakley L, Brocklehurst P, Gray R, (2009) *A systematic review of antenatal care programmes to reduce infant mortality and its major causes in socially disadvantaged and vulnerable women*. NPEU, Oxford
- Howard DL, Strobino D, Sherman S, Crum R (2008) Within prisons, is there an association between the quantity of prenatal care and infant birth weight? *Paediatric and Perinatal Epidemiology* 22 369-378
- Hundley V, Rennie AM, Fitzmaurice A, Graham W, vanTeijlingen E, Penney G (2000) A national survey of women's views of their maternity care in Scotland. *Midwifery* 16 303-313.

Hunter DJ, Killoran A (2004) *Tackling health inequalities: turning policy into practice?* Health Development Agency, London

Information & Statistics Division (1998) *Small babies in Scotland: a ten year overview*. ISD, Edinburgh

Information & Statistics Division (2007) *Birth & Babies* [Online]. Available: <http://www.isdscotland.org/isd> [04/06/07]

Information & Statistics Division (2009) *Birth & Babies* [Online]. Available: <http://www.isdscotland.org/isd> [01/02/09]

Isayu S, Tomashek K, Barfield W (2002) Infant mortality and low birth weight among black and white infants 1980-2000. *Morbidity and Mortality Weekly Report Centre for Disease Control and Prevention* 51 589-592

Jochelson K (2007) *Health literacy review paper*. National Social Marketing Centre, London:

Jones LJ (1994) *The social context of health & health work*. Macmillan, London

Jones C, Lyons C (2004) Case Study: Design? Method? Or comprehensive strategy? *Nurse Researcher* 11, 3 70-77

Kaplan M, Marks G (1995) Appraisal of health risks: the roles of masculinity, femininity and sex. *Sociology of Health & Illness* 17 206-21

Kaplan GA, Pamuk ER, Lynch JW, Cohen RD, Balfour JL (1996) Inequality in income and mortality in the United States: analysis of mortality and potential pathways. *British Medical Journal*, 312, 999–1003.

Kawachi I, Subramanian SV, Almeida-Filho N (2002) A Glossary for Health Inequalities. *Journal of Epidemiology and Community Health* 56 647-652

Keen J, Alison LH (2001) Drug misusing parents: key points for health professionals. *Archive of Diseases in Childhood* 85 296-299

Kennare R, Heard A, Chan A (2005) Substance abuse during pregnancy: risk factors and obstetric and perinatal outcomes in South Australia. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 45 220-5

Kharrazi M, DeLorenze GN, Kaufman FL et al (2004) Environmental tobacco smoke and pregnancy outcome. *Epidemiology* 15 6 660-670

Kickbusch I (2008) Health literacy: an essential skill for the twenty first century. *Health Education* 108 2 101-104

Klebanoff MA, Mednick BR, Schulsinger C, Secher NJ, Shiono PH (1998) Fathers effect on infant birth weight. *American Journal of Obstetrics and Gynaecology* 178 1022-1026

Knight M, Kurinczuk JJ, Spark P, Brockelhurst P (2009) Inequalities in maternal health: national cohort study of ethnic variation in severe maternal morbidities. *BMJ* 2009; 338:b542

- Kramer MS (1987) Determinants of low birth weight: methodological assessment and meta-analysis. *World Health Organisation Bulletin* 65 663-737
- Kramer MS (1998) Maternal nutrition, pregnancy outcome and public health policy. *Canadian Medical Association Journal* 159 663-665
- Kramer MS (2000) Association between restricted foetal growth and adult chronic disease: is it causal? Is it important? *American Journal of Epidemiology* 152 7 605-608
- Kramer MS, Seguin L, Lydon J, Goulet L (2000) Socioeconomic disparities in pregnancy outcome: why do the poor fare so poorly? *Paediatric and Perinatal Epidemiology* 14 194-210
- Kramer MS, Kakuma (2003) Energy and protein intake in pregnancy (Cochrane Database of Systematic Reviews). *The Cochrane Library Issue 4*
- Kraus MW, Keltner D (2009) Signs of socioeconomic status: a thin slicing approach. *Psychological Science* 20 (1) 99-106
- Kupek E, Petrou S, Vause S, Maresh M (2002) Clinical, provider and sociodemographic predictors of late initiation of antenatal care in England and Wales. *British Journal of Obstetrics and Gynaecology* 109 265-274
- Kvalvik LG, Skjærven R, Haug K (2008) Smoking during pregnancy from 1999 to 2004: a study from the Medical Birth Registry of Norway. *Acta Obstetrica et Gynecologica Scandinavica* Vol. 87 p280-285
- Lagan BM (2007) *Women's decision making in pregnancy: the role of the internet (PhD Thesis)*. University of Ulster, Ulster
- Lamont DW, Parker L, Cohen MA, White M, Bennett SMA, Unwin NC, Craft AW, Alberti KGMM (1998) Early life and later determinants of adult disease: a 50 year follow up study of the Newcastle Thousand Families Cohort. *Public Health* 112 85-93
- Langenberg C, Shipley JM, Batty D, Marmot MG (2005) Adult socioeconomic position and the association between height and coronary heart disease mortality: findings from 33 years of follow-up in the Whitehall study. *American Journal of Public Health* 95 628-632
- Larsson M (2009) A descriptive study of the use of the internet by women seeking pregnancy related information. *Midwifery* 25 14-20
- Lasker JN, Coyle B, LI k, Ortynsky M (2005) Assessment of risk factors for low birth weight deliveries. *Health Care for Women International* 26 262-280
- Lavender T, Downe S, Finlayson K, Walsh D (2007) *Access to antenatal care: a systematic review*. University of Central Lancashire, Preston
- Legare F, Ratté S, Gravel K, Graham ID (2008) Barriers and facilitators to implementing shared decision making in clinical practice: update of a systematic review of health professionals perceptions. *Patient Education and Counselling* 73 526-535

Leon DA, Johansson M, Rasmussen F (2000) Gestational age and growth rate of fetal mass are inversely associated with systolic blood pressure in young adults: an epidemiologic study of 165,136 Swedish men aged 18 years. *Am J Epidemiology* 152 597-604

Lewis G (ed) (2007) Confidential Enquiry into Maternal and Child Health (CEMACH) *Saving Mothers' Lives: Reviewing maternal deaths to make motherhood safer 2003-2005. Summary and Key Recommendations*. CEMACH, London

Li CI, Daling JR, Emanuel I (2003) Birthweight and risk of overall and cause specific childhood mortality. *Paediatric and Perinatal Epidemiology* 17 164-170

Luginnah IN, Lee KS, Abernathy TJ, Sheehan D, Webster G (1999) Trends and Variations in perinatal mortality and low birthweight: the contribution of socioeconomic factors. *Canadian Journal of Public Health* 90 377-381

Lundberg O (1997) Childhood conditions, sense of coherence, social class and adult ill health: exploring their theoretical and empirical relations. *Soc. Sci. Med* 44 821-831

Luo ZC, Wilkins R, Kramer MS (2006) Effect of neighbourhood income and maternal education on birth outcomes: a population based study. *CMAJ* 174 (10)

Lynch JW, Davey Smith G, Hillemeier M, Shaw M, Raghunathan T, Kaplan GA. (2001) Income inequality, the psychosocial environment, and health: comparisons of wealthy nations. *Lancet*, 358, 194–200.

Lynch J, Davey-Smith G, Harper S, Hillemeier M, Ross N, Kaplan GA, Wolfson M (2004) Is income inequality a determinant of population health Part 1. A systematic review. *The Milbank Quarterly* Vol 82 1 5-99

Macdonald C (2003) *Low birthweight analysis in Argyll & Clyde*. Unpublished Internal Report NHS Argyll & Clyde, Paisley

Maher J, Macfarlane A (2004) Trends in live births and birthweight by social class, marital status and mother's age 1976 – 2000. *Health Statistics Quarterly* 23

Mannes T, Jalaudin B, Morgan G, Lincoln D, Sheppard V, Corbett S (2005) Impact of ambient air pollution on birth weight in Sydney Australia. *Occupational and Environmental Medicine* 62 524-530

Margetts BM, Mohd Yusof S, Al Dallal Z, Jackson AA (2002) Persistence of lower birth weight in second generation South Asian babies born in the United Kingdom. *Journal of Epidemiol Community Health* 56 684-687

Marmot M, Davey-Smith G, Stansfield S, Patel C, North F, Head J, White I, Brunner E, Feeney A (1991) Health inequalities among British civil servants: the Whitehall II Study. *Lancet* 337 1387-1393

Marmot M (2003) Understanding Social Inequalities in Health. *Perspectives in Biology and Medicine* 2003 46 3

- Martinez FD, Wright AL, Taussig LM (1994) The effects of paternal smoking on the birthweight of newborns whose mothers did not smoke. *American Journal of Public Health* 84 1489-1491
- Mathews F, Yudkin P, Neil A (1999) Influence of maternal nutrition on outcome of pregnancy: prospective cohort study. *BMJ* 319 (7206) 339-343
- Mathews F, Yudkin P, Smith R, Neil A (2000) Nutrient intakes during pregnancy: the influence of smoking status and age. *Journal of Epidemiol Community Health* 54 17-23
- McCourt (2006) Supporting choice and control? Communication and interaction between midwives and women at the antenatal booking visit. *Social Science & Medicine* 62 1307-1318
- McDonald HM, O'Loughlin JA, Vigneswaran R, Jolley PT, Harvey JA, Bof A, McDonald PJ (1997) Impact of metronidazole on preterm birth in women with bacterial vaginosis flora (*Gardnerella vaginalis*): a randomised placebo controlled trial. *British Journal of Obstetrics and Gynaecology* 104 1391-1397
- McElhatton PR, Bald LM, Pughe KRI (2000) The use of nicotine replacement therapy in pregnancy. *The Pharmaceutical Journal* 265 863-865
- McIntyre S (1997) The Black Report and beyond: what are the issues? *Social Science and Medicine* 44 723-45
- McIntyre S, Ellaway A, Cummins S (2002) Place effects on health: how can we conceptualise, operationalise and measure them? *Soc Sci Med* 55 125-139
- McIntyre S (2003) Evidence based policy making: editorial. *BMJ* 326 5-6
- McIntyre S Ellaway A (2003) Neighbourhood and health: an overview. In Kawachi I, Berkman LF (eds) *Neighbourhoods and health*. Oxford University Press, New York
- McKenzie PJ, Oliphant T (2010) Informing evidence: claimsmaking in midwives and clients talk about interventions. *Qual Health Res* 20 29-41
- McLaren G, Bain M (1998) *Deprivation and Health in Scotland: insights from NHS data Information and Statistics Division*. NHS Health Scotland, Edinburgh
- Merriam Webster (2008) *Merriam Webster Online*. [online]. Available <http://www.merriam-webster.com/info/08words.htm> [01/09/09]
- Mick E, Biederman J, Prince J, Fischer MJ, Faraone SV (2002) Impact of low birth weight on attention-deficit hyperactivity disorder. *Developmental and Behavioural Paediatrics* 23 1 16-22
- Miers M (2003) *Class, Inequalities and Nursing Practice*. Palgrave MacMillan Hampshire
- Miles MB, Huberman AM (1994) *Qualitative Data Analysis: an Expanded Sourcebook*. Sage, London

- Miranda J, Azocar F, Komaromy M, Golding JM (1996) Unmet mental health needs of women in public sector gynecologic clinics. *American Journal of Obstetrics and Gynecology* 17 212-217
- Morales AW, Marks MN, Kumar R (1997) Smoking in Pregnancy: a study of psychosocial and reproductive risk factors. *Journal of Psychosomatic Obstetrics and Gynaecology* 18 247-254
- Mugavero MJ (2008) *Improving engagement in HIV care: what can we do?* Conference presentation to the 11<sup>th</sup> Annual Clinical Update Washington DC [Online]. Available [www.iasusa.org](http://www.iasusa.org) [30/09/09]
- Muntaner C, Lynch JW, Hillemeier M, Lee JH, David R, Benach J, Borrell C. (2002) Economic inequality, working class power, social capital, and cause-specific mortality in wealthy countries. *International Journal of Health Services*, 32, 629–656.
- Nafstad P, Botten G, Hagen J (1996) Partner's smoking: a major determinant for changes in women's smoking behaviour during and after pregnancy. *Public Health* 110 379-385
- National Collaborating Centre for Women's and Children's Health (2008) *Antenatal Care: Routine Care for the Healthy Pregnant Woman*. NICE, London
- NHS Argyll & Clyde (2003) *Director of Public Health Annual Report 2003* NHS Argyll & Clyde, Paisley
- NHS Argyll & Clyde (2004) *Director of Public Health Annual Report 2004* NHS Argyll & Clyde, Paisley
- NHS Quality Improvement Scotland (2005) *Clinical Standards: Maternity Services*. NHS Quality Improvement Scotland, Edinburgh:
- NHS Quality Improvement Scotland (2009) *Trends in Perinatal Mortality in Scotland: a review over 30 years*. NHS Quality Improvement Scotland, Edinburgh
- Nix RL, Bierman KL, McMahon RJ (2009) How attendance and quality of participation affect treatment response to parent management training. *Journal of Consulting & Clinical Psychology* 77 (3) 429-438
- Nolan ML (1995) A comparison of attenders at antenatal classes in the voluntary and statutory sectors: education and organisational implications. *Midwifery* 11 138-145
- Nolan ML (1998) *Antenatal education: a dynamic approach*. Ballierre Tindall London:
- Norbeck JS, DeJoseph JF, Smith RT (1996) A randomised trial of an empirically derived social support intervention to prevent low birthweight among African-American women. *Soc Sci Med* 43 6 947-954
- Nordstrom ML, Cnattingus S (1994) Smoking habits and birthweight in two successive pregnancies. *Early Human Development* 37 195-204



- Northrop M, Pittam G, Caan W (2008) The expectations of families and patterns of participation in a trailblazer surestart. *Community Practitioner* 81, 2 p24-29
- Oakley A, Rajan L, Grant A (1990) Social support and pregnancy outcome. *British Journal of Obstetrics and Gynaecology* 97 155-162
- Oakley L, Gray R, Kurinczuk JJ, Brocklehurst P, Hollowell J (2009) *A systematic review of the effectiveness of interventions to increase the early initiation of antenatal care in socially disadvantaged and vulnerable women*. NPEU, Oxford
- O'Campo P, Xue X, Wang M, O'Brien Caughy M (1997) Neighbourhood risk factors for low birthweight in Baltimore: a multilevel analysis. *American Journal of Public Health* 87 7 1113-1118
- O'Cathain A, Walters SJ, Nicholl JP, Thomas KJ, Kirkham M (2002) Use of evidence based leaflets to promote informed choice in maternity care: randomised controlled trial in everyday practice. *BMJ* 324 1-5
- Okah FA, Cai J, Hoff GL (2005) Term gestation low birth weight and health compromising behaviours during pregnancy. *Obstetrics and Gynaecology* 105 3 543-550
- Oliver A, Nutbeam D (2003) Addressing health inequalities in the United Kingdom: a case study. *Journal of Public Health Medicine* 25 281-287
- O'Meara C (1993) An evaluation of consumer perspectives of childbirth and parenting education. *Midwifery* 9 (2) 76-84
- Oxford Dictionaries (2009) *Ask Oxford. Com [online]*. Available <http://www.askoxford.com/?view=uk> [01/09/09]
- Paarlberg MK, Vingerhoets AJJM, Passchier J, Dekker GA, Van Geijn HP (1995) Psychosocial factors and pregnancy outcome: a review with emphasis on methodological issues. *Journal of Psychosomatic Research* 39 5 563-595
- Pandey SK, Hart JJ, Tiwary S (2003) Women's health and the internet: understanding emerging trends and implications. *Social Science and Medicine* 56 179-191
- Parker RM, Ratzan SC, Lurle N (2003) Health literacy: a policy challenge for advancing high quality health care. *Health Affairs* 22 4 147-152
- Parliamentary Health Select Committee (2003) *Inequalities in Access to Maternity Services. Eight Report of Session 2002-03*. Stationery Office, London
- Peacock JL, Bland JM, Anderson HR (1991) Effects of birthweight of alcohol and caffeine consumption in smoking women. *Journal of Epidemiology and Community Health* 45 159-163
- Pearson C, Thurston M (2006) Understanding mother's engagement with antenatal parent education services: a critical analysis of a local surestart service. *Children & Society* 20 p348-359

Peoples-Sheps MD, Siegal E, Chirayath M, Origasa H, Ware A, Barakat A (1991) Characteristics of maternal employment during pregnancy: effects on low birth weight. *American Journal of Public Health* 81 1007-1012

Petrou S, Kupek E, Vause V, Maresh M (2001) Clinical, provider and sociodemographic determinants of the number of antenatal visits in England and Wales. *Soc Sci Med* 52 1123-1134

Pilnick AM, Fraser DM, James DK (2004) Presenting and discussing nuchal translucency screening for fetal abnormality in the UK. *Midwifery* 20, 82–93

Popham F (2006) (Is there a "Scottish effect" for self reports of health? Individual level analysis of the 2001 UK census. *BMC Public Health* 6 191

Power C (1994) National trends in birthweight: implications for future adult disease. *BMJ* 308 1270-1

Power C, Manor O, Fox AJ (1991) *Health and class: the early years*. Chapman Hall, London

Power C, Li L, Manor O (2000) a prospective study of limiting longstanding illness in early adulthood. *International Journal of Epidemiology* 29 131-139

Pringle PJ, Geary MPP, Rodeck CH, Kingdom JCP, Kayamba-Kay's S, Hindmarsh PC (2005) The influence of cigarette smoking on antenatal growth, birth size, and the insulin-like growth factor axis. *Journal of Clinical Endocrinology & Metabolism* 90 2556-2562

Public Health Institute of Scotland (2001) *Chasing the Scottish Effect: why Scotland needs a step change in health if it is to catch up with the rest of Europe*. Public Health Institute of Scotland, Glasgow

Public Health Institute of Scotland (2004) *Paisley and Levern Valley Community Health and Wellbeing Profile*. PHIS, Glasgow

Public Health Institute of Scotland (2004b) *Renfrew and West Renfrewshire Community Health and Wellbeing Profile*. PHIS, Glasgow

Putnam R (1995) 'Bowling Alone' America's declining social capital. *Journal of Democracy* 6 65-78

Raisler J, Kennedy H (2005) Midwifery care of poor and vulnerable women 1925-2003. *Journal of Midwifery and Women's Health* 50 2 113-121

Ramakrishnan U, Manjrekar R, Rivera J, Gonzales-Cossio T, Martorell R (1999) Micronutrients and pregnancy outcome: a review of the literature. *Nutrition Research* 19 103-159

Rankin D, Backet-Millburn K, Platt S (2009) Practitioner perspectives on tackling health inequalities: findings from an evaluation of healthy living centres in Scotland. *Social Science & Medicine* 68 925-932

- Raum E, Arabin B, Schlaud M, Walter U, Schwarz FW (2001) The impact of maternal education on intrauterine growth: a comparison of former West and East Germany. *International Journal of Epidemiology* 30 81-87
- Reagan PB, Salsberry PJ, Olsen RJ (2007) Does the measure of economic disadvantage matter? Exploring the effect of individual and relative deprivation on intrauterine growth restriction. *Social Science & Medicine* 64 2016–2029
- Redshaw M, Rowe R, Hockley C, Brocklehurst P (2007) *Recorded delivery: a national survey of women's experience of maternity care 2006*. National Perinatal Epidemiology Unit, Oxford
- Redshaw M, van den Akker O (2008) Understanding factors which can influence the experience of pregnancy and childbirth. *Journal of Reproductive and Infant Psychology*, 26: 2, 71-73
- Rees G, Brooke Z, Doyle W, Costeloe K (2005) The nutritional status of women in the first trimester of pregnancy attending an inner city antenatal department in the UK. *The Journal of the Royal Society for the Promotion of Health* 125, 5 232-238
- Reime B, Ratner PA, Tomaselli-Reime SN, Kelly A, Schueckin AB, Wenzlaff P (2006) The role of mediating factors in the association between social deprivation and low birth weight in Germany. *Social Science & Medicine* 62, 7, 1731-1744
- Registrar General Standard Occupational Classification (2000). *The Standard Occupational Classification* [online]. Available <http://www.ons.gov.uk/about-statistics/classifications/current/SOC2000> (12/08/09)
- Relton C, Hammal DM, Rankin J, Parker L (2005) Folic acid supplementation and social deprivation. *Public Health Nutrition* 8 338-340
- Renfrewshire Council (2004) *Scottish Index of Multiple Deprivation 2004: Implications for the Renfrewshire Council Community Planning Partnership* (unpublished internal document) Renfrewshire Council, Paisley
- Richards H, Emslie C (2000) The doctor or the girl from the university? Considering the influence of professional roles on qualitative interviewing. *Family Practice* 17, 1 71-75
- Richards N, Coulter A (2007) *Is the NHS becoming more patient centred? Trends from the national surveys of NHS patients in England 2002-07*. Picker Institute, London:
- Rich-Edwards JW, Stampfer MJ, Manson JE et al (1997) Birthweight and risk of cardiovascular disease in a cohort of women followed up since 1976. *BMJ* 315 396-400
- Riggs MA, Klebanoff MA (2004) Treatment of vaginal infections to prevent preterm birth: a meta-analysis. *Clinical Obstetrics and Gynaecology* 47 4 796-807
- Robson C (1993) *Real World Research: a Resource for Social Scientists and Practitioner-Researcher*. Blackwell, Oxford
- Robson C (2002) *Real World Research 2<sup>nd</sup> Edition*. Blackwell, London

- Rogers I, Emmet P, Baker D, Golding J (1998) Financial difficulties, smoking habits, composition of the diet and birthweight in a population of pregnant women in the South West of England. *European Journal of Clinical Nutrition* 52 251-260
- Romero R, Mazor M (1988) Infection and preterm labour. *Clinical Obstetrics & Gynaecology* 31 553-584
- Rose G (1992) *The strategy of preventative medicine*. Oxford Medical Publications, Oxford
- Rowe RE, Garcia J, Macfarlane AJ, Davidson LL (2002) Improving communication between health professionals and women in maternity care: a structured review. *Health Expectations* 5 63-83
- Rowe RE, Garcia J (2003) Social class, ethnicity and attendance for antenatal care in the United Kingdom: a systematic review. *Journal of Public Health Medicine* 25 113-119
- Rowe RE, Magee H, Quigley MA, Heron P, Askham J, Brocklehurst P (2008) Social and ethnic differences in attendance for antenatal care in England. *Public Health* 122, 1386-1372
- Royal College of Nursing (2005) *Informed Consent in Health & Social Care Research*. RCN, London
- Royal College of Obstetricians and Gynaecologists (2001) Why Mothers Die 1997–1999: *The Confidential Enquiries into Maternal Deaths in the United Kingdom*. RCOG Press, London
- Royal College of Obstetricians and Gynaecologists (2004) *Why Mothers Die: confidential enquiry into maternal and child health*. RCOG Press, London
- Ryan GW, Bernard HR (2003) Data Management & Analysis. In Denzin NK, Lincoln YS (eds) *Collecting and Interpreting Qualitative Materials 2<sup>nd</sup> Ed*. Sage, London
- Sanjose S, Romanelli E (1991) Low birthweight and preterm delivery, Scotland 1981-84: effects of parents' occupations. *Lancet* 338 428-431
- Schillinger D, Piette J, Grumbach K et al (2003) Closing the loop: physician communication with diabetic patients who have low literacy. *Arch Intern Medicine* 163 83-90
- Schofield JW (2000) Increasing the generalisability of qualitative research. In Gomm R, Hammersley M, Foster P (eds) (2000) *Case Study Method*. Sage, London
- Schwandt TA (2000) Three Epistemological Stances for Qualitative Inquiry. In Denzin NK, Lincoln YS (2000) *Handbook of Qualitative Research*. Sage, California
- Scottish Executive (2001) *A Framework for Maternity Services in Scotland*. Scottish Executive, Edinburgh
- Scottish Executive (2002) *Coronary Heart Disease and Stroke Strategy for Scotland*. Scottish Executive, Edinburgh

- Scottish Executive (2003) *Partnership for Care*. Scottish Executive, Edinburgh
- Scottish Executive (2003b) *Inequalities in Health: report of the measuring inequalities in health working group*. Scottish Executive, Edinburgh
- Scottish Executive (2004) *Health for all Children: Guidance on Implementation in Scotland*. Scottish Executive, Edinburgh
- Scottish Executive (2004b) *The Scottish Index of Multiple Deprivation*. Scottish Executive, Edinburgh
- Scottish Executive (2005) (The Kerr Report) *Building a Health Service Fit for the Future*. Scottish Executive, Edinburgh
- Scottish Executive (2006) *The Scottish Index of Multiple Deprivation*. Scottish Executive, Edinburgh
- Scottish Government (2007) *Better Health Better Care: an Action Plan*. Scottish Government, Edinburgh
- Scottish Government (2008) *Statistics Publication Notice: Lifelong Learning Series*. Scottish Government, Edinburgh
- Scottish Government (2008b) *Fairer Scotland Fund*. Scottish Government, Edinburgh
- Scottish Government (2008c) *Local Delivery Plan Guidance 2009/10* [online]. Available:  
<http://www.scotland.gov.uk/Topics/Health/NHSScotland/17273/LDPGuidance2009/>  
[16/10/10]
- Scottish Government (2009) *Scottish Neighbourhood Statistics*. [Online] Available at <http://www.sns.gov.uk/> (15/08/09)
- Scottish Office (1995) *The Deprived Areas in Scotland Index*. Scottish Office, Edinburgh
- Scottish Public Health Observatory (2009) *Tobacco Use: Key Points* [online]. Available @  
[http://www.scotpho.org.uk/home/Behaviour/Tobaccouse/tobacco\\_keypoints.asp](http://www.scotpho.org.uk/home/Behaviour/Tobaccouse/tobacco_keypoints.asp)  
[31/10/09]
- Shah NR, Bracken MB (2000) A systematic review and meta-analysis of prospective studies on the association between maternal cigarette smoking and pre-term delivery. *American Journal of Obstetrics and Gynaecology* 182 465-72
- Shaw M, Dorling D, Gordon D, Davey Smith G (1999) *The Widening Gap: health inequalities and policy in Britain*. The Policy Press, Bristol
- Sheehan TJ (1998) Stress and low birth weight: a structural modelling approach using real life stressors. *Soc Sci Med* 47 10 1503-1512

- Shenkin SD, Starr JM, Pattie A, Rush MA, Whalley LJ, Deary IJ (2001) Birthweight and cognitive function at age 11 years: the Scottish Mental Survey 1932. *Archives of Disease in Childhood* 85 3 189-195
- Sheppard VB, Zambrana RE, O'Malley AS (2004) Providing health care to low income women: a matter of trust. *Family Practice* 21 484-491
- Shiono PH, Klebanoff MA, Nugent RP, Cotch MF, Wilkins DG, Rollins DE, Carey JC, Behrman RE (1995) The impact of cocaine and marijuana use on low birth weight and preterm birth: a multicentre study. *American Journal of Obstetrics and Gynaecology* 172 19-27
- Sihota S, Lennard L (2004) *Health literacy: being able to make the most of health*. National Consumer Council, London
- Silbergeld EK, Patrick TE (2005) Environmental exposures, toxicological mechanisms and adverse pregnancy outcomes. *American Journal of Obstetrics and Gynaecology* 192 11-21
- Singhal A, Fewtrell M, Cole TJ, Lucas A (2003) Low nutrient intakes and early growth for later insulin resistance in adolescent boom preterm. *Lancet* 361 1089-1097
- Sloggett A, Joshi H (1994) Higher Mortality in Deprived Areas: community or personal disadvantage? *BMJ* 3 309 1470-4
- Smith GCS, Pell JP (2001) Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study. *BMJ* 323 1-5
- Smith GCS, Pell JP, Dobbie R (2003) Interpregnancy interval and risk of pre-term birth and neonatal death: retrospective cohort study. *BMJ* 327 313-319
- Soltani H, Dickinson FM (2005) Exploring women's views on patterns of antenatal care. *British Journal of Midwifery* 13 (9) 57—575
- Spencer NJ, Logan S, Gill L (1999) Trends and social patterning of birthweight in Sheffield 1985-94. *Arch Disease in Childhood* 81 F138-40
- Spencer NJ, Bambang S, Logan S, Gill L (1999) Socioeconomic status and birthweight: comparison of an area based measure with the registrar general's social class. *Journal of Epidemiology and Community Health* 53 495-498
- Spencer NJ (2003) *Weighing the evidence: how is birthweight determined?* Radcliffe Medical Press, Abingdon
- Spencer NJ, Logan S (2003) Sudden unexpected death in infancy and socioeconomic status: a systematic review. *J Epidemiol Community Health* 58 366-373
- Stake RE (2000) Case Studies. In Denzin NK, Lincoln YS (2000) *Handbook of Qualitative Research*. California, Sage

- Staniszewska SH, Henderson L (2005) Patient's evaluations of the quality of care: influencing factors and the importance of engagement. *Journal of Advanced Nursing* 49, 5 p530-537
- Stapleton H, Kirkham M, Thomas G (2002) Qualitative study of evidence based leaflets in maternity care. *BMJ* 324 639
- Stapleton H, Kirkham M, Thomas G, Curtis P (2002) Language use in antenatal consultations. *British Journal of Midwifery* 10, 5 273-277
- Svensson J, Barclay L, Cooke M (2006) The concerns and interests of expectant and new parents: assessing learning needs. *The Journal of Perinatal Education* 15 (4) 18-27
- Subramanyam M, Kawachi I, Berkman L, Subramanian SV (2009) Relative deprivation in income and self-rated health in the United States. *Social Science & Medicine* Volume 69, Issue 3, p327-33
- Svensson J, Barclay L, Cooke M (2006) The concerns and interests of expectant and new parents: assessing learning needs. *The Journal of Perinatal Education*. 15, 4 18-27
- Svensson J, Barclay L, Cooke M (2007) Antenatal Education as Perceived by Health Professionals. *The Journal of Perinatal Education*. Winter 2007 16 1 9-12
- Sydsjo A, Brynhildsen J, Selling KE, Josefson A, Sydsjo G (2006) Influence of rest during pregnancy on birthweight in working women. *Obstetrics & Gynecology* 107 5 991-996
- Tandon SD, Parillo K, Mercer C, Keefer M, Duggan AK (2008) Engagement in paraprofessional home visitation: families reasons for enrolment and program response to identified reasons. *Women's Health Issues* 18 118-129
- Townsend P, Davidson N (eds) (1988) *Inequalities in Health: the Black Report*. Pelican, Middlesex
- Tremblay RE, Masse B, Perron D, LeBlanc M (1992) Disruptive behaviour, poor school achievement, delinquent behaviour and delinquent personality: longitudinal analysis. *Journal of Consultant Clinical Psychology* 60 64-72
- Tulassey T, Vasarhelyi B (2002) Birth weight and renal function. *Current opinion in nephrology and hypertension* 11 347-352
- Tunstall HVZ, Shaw M, Dorling D (2004) Places and health. *Journal of Epidemiology and Community Health* 58 6-10
- Turner RJ, Wheaton B, Lloyd DA (1995) The epidemiology of social stress. *Am Soc Rev* 60, 104-125
- Turner RJ, Lloyd DA (1999) The stress process and the social distribution of depression. *J Health Soc Behaviour* 40, 374-404

- Vrijkotte TGM, Van der Wal MF, Van Eijnsden M, Bonsel GJ (2009) First-Trimester Working Conditions and Birthweight: A Prospective Cohort Study. *American Journal of Public Health* 99 8 1409-1416
- Wainwright NWJ, Surtees PG (2003) Places, people and their physical and mental functional health. *Journal of Epidemiology & Community Health* 58 333-339
- Wanless (2002) *Securing our Future Health: taking a Long Term View*. HMSO, London
- Weis L, Fine M (2000) *Speed bumps: a student friendly guide to qualitative research*. New York, Teachers College Press
- Wetherell M, Taylor S, Yates SJ (eds) (2001) *Discourse as Data: a Guide for Analysts*. Sage, London
- Whitehead M (1997) *Social Class adapted from the Lancet 1843*. Office of National Statistics, London
- Wilcox AJ Skjaerven R, Buekens P, Kiely J. (1995). Birth weight and perinatal mortality: a comparison of the United States and Norway. *JAMA* 273(9):709-711.
- Wilcox AJ (2001) On the importance and the unimportance of birthweight. *International Journal of Epidemiology* 30 1233-1241
- Wilkinson R (1996) *Unhealthy Societies: the afflictions of Inequalities*. Routledge, London
- Williams S, Poulton R (2002) Birth size, growth and blood pressure between the ages of 7 and 26 years: failure to support the foetal origins hypothesis. *American Journal of Epidemiology* 155 849-852
- Williams GH (2003) The Determinants of Health: structure, context and agency. *Sociology of Health and Illness* Vol 25 Silver Anniversary Issue 131-154
- Wilson S, Draper H, Ives J (2008) Ethical issues regarding recruitment to research studies within the primary care consultation. *Family Practice* 25(6):456-461
- Winkvist A, Mogren I, Hogberg U (1998) Familial patterns in birth characteristics: impact on individual and population risks. *International Journal of Epidemiology* 27 248-254
- World Health Organization (1992) *International statistical classification of diseases and related health problems, 10th revision*. WHO, Geneva
- Yin RK (2003) *Case Study Research: Design and Methods 3<sup>rd</sup> ed*. Sage, London
- Yuen P (2005) *Compendium of Health Statistics 16<sup>th</sup> Edition 2004-2005*. Office of Health Economics, London



## **List of Appendices**

- Appendix 1: Participant Invitation Letter
- Appendix 2: Participant Information Sheet
- Appendix 3: Participant Response Form
- Appendix 4: Participant Consent Form
- Appendix 5: GP Information Letter
- Appendix 6: Interview Schedule 1
- Appendix 7: Interview Schedule 2
- Appendix 8: Case Sheet Example

## Appendix 1: Participant Invitation Letter

Dear .....

This letter is to invite you to participate in an antenatal study that is taking place within your local area. The title of the study is:

***“Women's and health professionals' perceptions of antenatal care in Renfrewshire: does the socio-economic background of pregnant women make a difference?”***

This study aims to explore the delivery of antenatal care for different women. For example, women from different areas may have different health needs and expectations and we would like to find out if this affects what individual women think of their antenatal care. We would like to speak to pregnant women who live in different local areas.

You have been chosen because you are pregnant with your first child and live in one of the local areas that we wish to study. In total, we hope to speak to at least 30 women who live in certain local areas.

Enclosed with this letter is an 'information sheet' giving more detail about the study. We would be grateful if you could read this information and return your response form, in the envelope provided, if you wish to take part in the study. You can also use this form if you require further information before deciding.

Thank you for your time

Yours sincerely

Lead Midwife  
Royal Alexandra Hospital  
Paisley

## **Appendix 2: Participant Information Sheet**

### **Study Title**

Women's and health professionals' perceptions of antenatal care in Renfrewshire: does the socio-economic background of pregnant women make a difference?

### **Invitation**

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

### **What is the purpose of the study?**

Antenatal care is a service offered to all pregnant women. If you have a normal, routine pregnancy you will receive a standard type of antenatal care including booking appointments, pregnancy screening, clinic appointments and antenatal classes. This care may be provided at various times, in hospital or health centres, by your general practitioner, an obstetrician, midwives and health visitors.

This study aims to explore antenatal care provision for different women. For example, women from different areas may have different health needs and expectations and I would like to find out if this affects what individual women think of their antenatal care. I would like to speak to pregnant women who live in different local areas. If you agree to be one of these women, then this would happen twice during your pregnancy.

### **Why have I been chosen?**

You have been chosen because you are pregnant with your first child and live in one of the local areas that I wish to study. In total I hope to speak to at least 30 women who live in certain local areas.

### **Do I have to take part?**

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive. Indeed, I will check with you prior to each interview to confirm if you wish to continue taking part.

### **What will happen to me if I take part?**

This study will not change or affect the antenatal care you would normally receive. All I wish to do is arrange for a researcher to interview you twice during your pregnancy - once after your booking appointment and once later in your pregnancy. These interviews should take about an hour and will take place at a location to suit you - in your own home if you wish. If you agree, the interviews will be tape-recorded. For this study, there are no right or wrong answers - it is your views we are interested in.

**What do I have to do?**

Along with this information sheet is a stamped addressed envelope and a form for you to complete, giving your name and contact details. If you wish to take part in this study, please complete and return the form. If you need further information before making up your mind then please contact the researcher whose name is at the end of this sheet. If you agree to take part in this study, you will be contacted by the researcher who will arrange a suitable time for the consent form to be signed. A suitable time for the first interview will also be arranged.

**What are the possible disadvantages and risks of taking part?**

There are no risks to taking part in this study. The only disadvantage will be the time requirement regarding the two interviews. The interview process will provide an opportunity to talk about your own experiences, and, in some instances, this may be upsetting.

**What are the possible benefits of taking part?**

You are unlikely to benefit directly from taking part in this study. However, some women find it helpful to be given the opportunity to share their views on their experiences regarding antenatal care. The information we get from this study may help other women by helping us to develop future antenatal services.

**Will my taking part in this study be kept confidential?**

All information which is collected about you during the course of the study will be kept strictly confidential. Your name and address will not be on any information recorded and the final report will not identify you in any way.

Your General Practitioner will be advised you are participating in this study.

The researcher will not be able to advise on aspects of your pregnancy but will contact your doctor, with your consent, if there are any concerns about your pregnancy raised during the interview.

Unfortunately, it has to be accepted that, for whatever reason, some pregnancies fail to progress to full term. To avoid any possible upset to you, the researcher will check with your midwifery team before contacting you to arrange each interview.

**What happens after the study?**

Once the study is complete, the researcher will write a thesis detailing the views and thoughts of the women interviewed and any recommendations for change arising from these interviews. This information will be made available to health professionals through publication in health service journals but will not identify you in any way. You will receive a summary of the findings if you wish.

**Who is organising the study?**

This study is being conducted as part of a doctoral course at the University of Stirling and is being supervised by Professor Andrew Watterson and Dr Carol Bugge, both from the Department of Nursing and Midwifery at the University.

**Who has reviewed the study?**

This study has been approved by NHS Argyll & Clyde Ethics Committee and the Department of Nursing and Midwifery Ethics Committee at the University of Stirling.

**Contact for further information**

If you require further information or wish to discuss any aspects of this study, please contact:

Angie Docherty  
Lecturer - Public Health Nursing  
School of Health, Nursing & Midwifery  
University of Paisley  
Paisley  
PA1 2BE  
Telephone: 0141 849 4108

Professor Andrew Watterson  
Chair of Health Effectiveness  
Department of Nursing & Midwifery  
University of Stirling  
Stirling  
FK9 4LA  
01786 466283

Dr Carol Bugge  
Senior Lecturer  
Department of Nursing & Midwifery  
University of Stirling  
Stirling  
FK9 4LA  
01786 466109

**Thank you for taking the time to read this information sheet. If you return the attached form, you will be contacted shortly by the researcher. If you agree to participate in the study, you will be given a copy of this information sheet and a signed consent form to keep.**

### Appendix 3: Participant Response Form

Study title: Women's and health professionals' perceptions of antenatal care in Renfrewshire: does the socio-economic background of pregnant women make a difference?

If you have read the information sheet and you would like to participate in the study, please complete the details below and return this form in the stamped addressed envelope (**or hand directly to the researcher**). The researcher will then contact you, giving you a chance to ask any questions you may have. Your details will remain confidential.

Name .....

Address  
.....  
.....  
.....  
.....

Post Code .....

**Date of Birth** ..... **Age** .....

Telephone ..... **Mobile** .....

Date of first booking appointment (if known) .....

Expected month of delivery (if known) .....

**Name of General Practitioner / Own Doctor** .....

**Surgery Address**  
.....

Signature of participant .....

## Appendix 4: Participant Consent Form

Centre number:  
Participant Identification number for this study:

Study number:

### Title of Study

Women's and health professionals' perceptions of antenatal care in Renfrewshire: does the socio-economic background of pregnant women make a difference?

### Name of Researcher

Angie Docherty  
Contact Details as above

Please initial box

1. I confirm that I have read and understood the information sheet dated 27/03/06 version 5 for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.
3. I understand that sections of any of my medical notes may be looked at by responsible individuals from NHS Greater Glasgow & Clyde where it is relevant to my taking part in research. I give permission for these individuals to have access to my records.
4. I agree to the researcher advising my GP that I am participating in this study.
5. I agree that the researcher may contact my own doctor with my knowledge, if any concerns about my pregnancy are noted during the research.
6. I agree to the researcher contacting the midwifery team to confirm continuation of pregnancy prior to each interview.
7. I agree to take part in the above study.

-----	-----	-----
Name of Participant	Date	Signature
-----	-----	-----
Name of person taking consent (if not researcher)	Date	Signature
-----	-----	-----
Researcher	Date	Signature

**Appendix 5: GP Information Letter**

Dear Doctor

Research Study:

**Women's and health professionals' perceptions of antenatal care in Renfrewshire: does the socio-economic background of pregnant women make a difference?**

Patient name: .....

Your patient has agreed to participate in the above study. It is intended that she will be interviewed by a researcher twice during her pregnancy. The attached information sheet details the aims of the study and the requirements for taking part.

As part of the consent process, your patient has agreed that the researcher may contact you should any concerns about her pregnancy be raised during the interviews.

If you require further information, please contact the researcher at the above address.

Thanks you for your co-operation

Yours sincerely

Angie Docherty



## **Appendix 6: Interview Schedule 1**

### **Preamble**

#### **Introduction to me and scope of the research.**

### **Introductory Questions**

How have you been feeling throughout your pregnancy so far?

When you first thought you were pregnant who, in the health service, did you see first?

Talk me through all the appointments you have had so far - **LIST**

So OK what we've got is x appointments, the first with x etc. What you would now like to do is to go through each of these appointments in detail.

### **Antenatal Experience – Perception/ Usefulness of Each Appointment**

Your first appointment with x - how did you find that appointment?

Did you know anything about this appointment beforehand?

(What did you know? / How did you know?/ Did you receive any information beforehand?)

Could you talk me through what happened in this appointment?

What tests were you offered/ accepted?

What information did you get? Verbally? Written?

Did you read any? What did you read?

What sorts of things were you asked about - did anyone ask if you smoke?

Did you talk about going to see anyone else? Who for what?

Was this appointment useful to you? In what ways?

Was this appointment helpful to you? In what ways?

Was this appointment as you expected it to be? In what ways?

Was it what you wanted? In what ways?

Is there anything you expected to get and didn't?

## **Overview of Antenatal Experience**

**Thanks for going through them one at a time now can we think about the overall picture**

Up to this point now, how would you describe your antenatal experience?

Do you have any thoughts about the information you have received so far?  
Have you received all the information you feel you need?

Do you have any thoughts about the support you have received so far?  
Have you received all the support you feel you need?

Anything else you think the service could provide you with up to this point?

## **Additional Support/ Advice**

Where else have you got information from so far about your pregnancy?

Why did you seek this information?

Has this additional information been useful – in what ways?

Comparing this information with what you have from NHS – which do you use more? Why?

## **Ongoing Expectations**

For information now about your pregnancy, where would you look for an answer?

For a concern about your pregnancy where would you look for an answer?

What do you now expect for the remainder of your antenatal care?

## **General perception of Antenatal Care**

What about the lifestyle choices women make – do you think that should alter the care women get?

For example, do you think that women who smoke should get a different type of care? Why?

Do you think that women who take drugs should get a different type of care? Why?

Do you think that women who live in, for example, Ferguslie Park and women who live in Houston should get the same type of care? Why?

### **Pregnancy Details**

What stage of pregnancy were you at when you 'booked'?  
Was this a planned pregnancy?

### **Demographics**

What age are you?  
Are you married or living with your partner?  
Do you own or rent this house?  
What is your occupation?  
What is your partner's occupation?  
What is your educational background?

### **Conclusion**

Is there anything else you would like to add?

## **Appendix 7: Interview Schedule 2**

### **Introductory Questions**

How have you been feeling throughout your pregnancy so far?

I last seen you just after your booking/scan appointment. Talk me through all the antenatal appointments you have had since – **LIST**

So OK what we've got is x appointments, the first with x etc. What you would now like to do is to go through each of these appointments in detail.

### **Antenatal Experience – Perception/ Usefulness of Each Appointment**

Your first appointment with x - how did you find that appointment?

Did you know anything about this appointment beforehand?

(What did you know? / How did you know?/ Did you receive any information beforehand?)

Could you talk me through what happened in this appointment?

What tests were you offered/ accepted?

What information did you get? Verbally? Written?

Did you read any? What did you read?

What sorts of things were you asked about?

Did you talk about going to see anyone else? Who for what?

Was this appointment useful to you? In what ways?

Was this appointment helpful to you? In what ways?

Was this appointment as you expected it to be? In what ways?

Was it what you wanted? In what ways?

Is there anything you expected to get and didn't?

### **Antenatal Groups / Classes**

Did you attend any groups or classes? What type of classes (**LIST**)

Was it for couples / partners?

Before you went, what did you think these classes were for?

Tell me what was discussed at these classes?

Was this class as you expected it to be?

Was it what you wanted?

Is there anything you expected to get and didn't?

Did you feel you comfortable enough to ask questions?

### **Overview of Antenatal Experience**

**Thanks for going through them one at a time now can we think about the overall picture**

Up to this point now, how would you describe your antenatal experience?

Do you have any thoughts about the information you have received so far?  
Have you received all the information you feel you need?

Do you have any thoughts about the support you have received so far?  
Have you received all the support you feel you need?

Anything else you think the service could provide you with up to this point?

### **Additional Support/ Advice**

Where else have you got information from so far about your pregnancy?

Why did you seek this information?

Has this additional information been useful – in what ways?

Comparing this information with what you have from NHS – which do you use more? Why?

### **General Perception of Antenatal Care (if not already asked at first interview)**

What about the lifestyle choices women make – do you think that should alter the care women get?

For example, do you think that women who smoke should get a different type of care? Why?

Do you think that women who take drugs should get a different type of care? Why?

Do you think that women who live in, for example, Ferguslie Park and women who live in Houston should get the same type of care? Why?

**Is there anything else you would like to add?**

**Appendix 8: Case Sheet Example: Case Sheet MD7**

**Research Number:** MD7

**Group:** Most Deprived

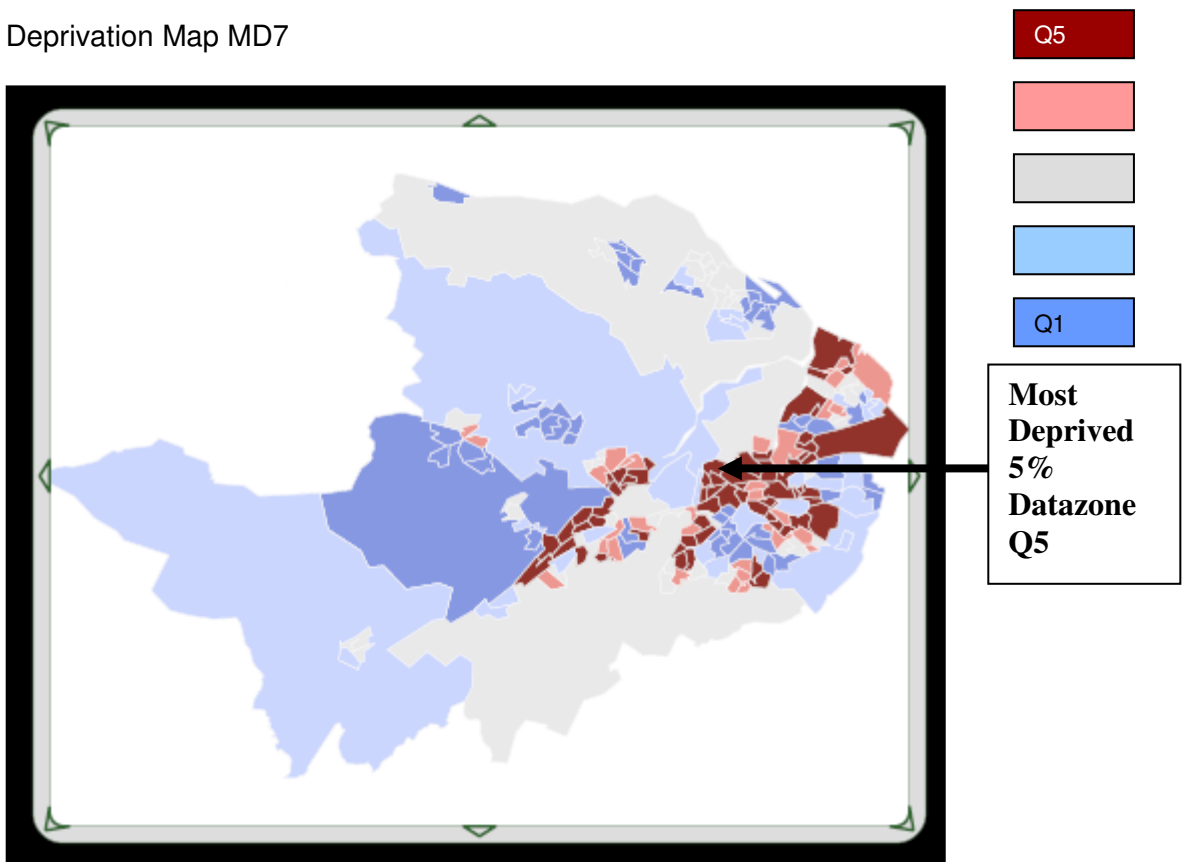
**Ward:**

**In 5/10/15%/20% area (If applicable):** 5%

**Change from 2004-2006 SIMD:** No

**Other Geographical Relationship to Deprivation:**

Deprivation Map MD7



**Researcher perception of Geographical Area:**

Well know as a deprived area in Paisley. Mixture of new and old council housing – semi detached property. Near supermarket and GP surgery

**Age:** 17

**Marital Status:** Single

**Occupation:** Works in fast food outlet

**Educational Background:** Standard Grades

**Gestation at Booking:** 11 weeks

**Planned Pregnancy:** No

**Other Relevant Information:**

**Summary of Interview 1:**

Alone at interview. Quiet. Difficult to get to open up – seems to remember very little about each appointment and has not sought out any additional information

**Summary of Interview 2:**

Interview arranged with MD7. On arrival two young girls playing in garden (each about 5yrs). Asked me if I was a social worker. On entering the house MD7 present with two older women. I asked MD7 if she was ready to be interviewed and was interrupted by one of the women to tell me MD7 did not want to be interviewed. I asked MD7 and she was very hesitant to reply – I got the impression she would be interviewed if she had been alone. But the older women again emphasised that MD7 did not want to be interviewed. MD7 would not go against this and interview was declined.

## **Substantive Analysis Report in Relation to Engagement**

### **Engagement as Language of Involvement & Personalisation**

At the first trimester this case is particularly interesting and fluctuating in terms of involvement and personalisation with antenatal care. For example, in certain aspects she describes good awareness of what to expect and of what team she will be involved with (reference 1, 9). However, other aspects indicate a sort of detached perception. For example, when describing her first midwife appointment the case remembered the midwives name but said 'she just told me the yellow group and told me an appointment to go up to the hospital' (reference 1, 3). In addition, the case also described an appointment as 'she just took my weight and noted down a couple of stuff like did I smoke' but could not remember if any written information was given (reference 4). The booking appointment was described as 'I just got a bag and stuff like that' (reference 6) though the case did report that 'at the end of it' she was asked if she had any questions (reference 7). My view here is that there is the potential for engagement but it is not capitalised on and by the end of the first trimester there is evidence of knowledge about the process but no engagement with it. The second interview was declined.

### **Engagement Expressed in Power & Relationships**

There is nil of note in the data to indicate the presence or lack of engagement.

### **Engagement in Terms of Health Literacy (Communication, Shared Decision Making, Utility of Information)**

### **Communication**

At the first trimester it is interesting to note that the one aspect of communication the case specifically remembers is in relation to being asked if she smoked (reference 1). There is little positive reporting of midwifery interaction and even the phrase 'at the end of it' in relation to being asked if she had any questions gives an indication that this case was not really engaged in that specific consultation (reference 2).

### **Shared Decision Making**

There is nothing in the data to indicate an opportunity for informed and shared decision making.

### **Utility of Information**

At the first trimester there is a low level of health literacy demonstrated here. The case describes 'flicking through' the written information provided (reference 3) and also reports that she has not sourced any additional material either purchased or via the internet (reference 4). This means that this case is reliant on personal contacts for information. This includes the midwifery service but there is no evidence at the first trimester that the case has sought specific information.

### **Case Summary in terms of Engagement**

This case presented as detached from the midwifery service in terms of seeing it a service that can meet her needs. The markers for engagement indicate that the case understands the antenatal process and is aware of when her appointments are. However, there is nothing in the data that indicates this case considers the antenatal service as anything other than something she attends.

### **Potential Impact of Engagement Process in this Case**

This case lived in the most deprived datazone in Scotland at the time of the study. She is also young. Both factors increase her risks of negative pregnancy outcomes. However, at the first and developmentally important trimester, there is no evidence that the antenatal service is adaptable to specific needs such as these. There are antenatal classes for young women that will undoubtedly be available (due to the lack of second interview I can't determine if this case attended these) however, there needs to be consideration given to working proactively with these cases much earlier in pregnancy.