WOMEN’S DECISIONS TO EXERCISE IN PREGNANCY: NEGOTIATING CONFLICTING IDENTITIES

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Abstract

Substantial benefits can be gained by participating in regular physical exercise, however only a minority of women meet current pregnancy exercise recommendations and there is limited understanding of women’s decision-making regarding exercise in pregnancy. The purpose of this constructivist grounded theory study was to develop a theoretical insight into the factors that influence women’s decisions regarding exercise in pregnancy and how they process the influences and multiple alternatives they encounter.

The constructivist approach drew on the subjective researcher/participant interrelationship to co-construct meaning from the data and ultimately render the women’s experiences into theoretical interpretations. The theory presented was built inductively from the experiences of 10 pregnant women who exercised regularly, supplemented by insights from theoretical sampling of fitness experts, internet forums and extant literature. Longitudinal, audio-recorded semi-structured interviews occurred twice during each pregnancy and 6-8 weeks postnatal. Data generation and data analysis ran concurrently and iteratively using the constant comparative method of analysis. Theoretical constructs generated by the data were progressively amplified and clarified through a series of inductive-deductive cycles and theoretical sampling that drove the evolving interview schedules. Theorising ideas in the form of detailed memos was a fundamental part of the analysis and enabled a detailed audit trail to be established.

The resultant substantive theory of ‘Accommodating the pregnant self’ conceptualises pregnancy as a transitional period during which women’s self-identity is modified. ‘The exercising self’ was a salient and valued facet of the women’s self-identity and continuing to exercise enabled women to maintain a degree of continuity and control that was integral to their sense of maintaining and to a degree regaining their past valued self. Decisions regarding exercise were influenced by a complex interplay of contextual factors that simultaneously encouraged exercise and rest. This consequently triggered a degree of identity conflict between two domains of their self-identity, ‘the exercising self’ and ‘the pregnant self’. The women reacted to the challenges to their identity through the process of self-identity regulation. Through this process they gradually re-constructed their self-identity to accommodate their pregnant self while contemplating possible future selves against various self and social normative standards.

Negotiating conflicting identities was an integral component of the decision-making process, and ultimately resulted in many of the women modifying their activities to accommodate the pressures they faced to conform to social ideologies of ‘the pregnant self’. The theory explores a range of strategies that the women used to deal with identity conflict, particularly drawing on selective perception and self-justification to resolve cognitive dissonance. It also highlights a duality in the factors that influenced their decisions which suggests women’s identity characteristics resulted in a propensity for behaviour to be steered by either internal (personal) or external (relational and environmental) influences.

The substantive theory underscores the significance of self-identity in steering the decision-making process. The findings provide insight into how women might be better supported to make informed and assured decisions regarding lifestyle choices. The theoretical potential to inform interventions to enhance activity levels in a wider population is highlighted.

Key words: Pregnancy, self-identity, exercise, identity conflict, identity regulation.
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DECLARATION

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Signed

Jenny Hassall

Dated 13/10/16
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<td>ACOG</td>
<td>American College of Obstetrics and Gynaecology</td>
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<tr>
<td>ACSM</td>
<td>American College of Sports Medicine</td>
</tr>
<tr>
<td>BASES</td>
<td>British Association of Sport and Exercise Sciences</td>
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<tr>
<td>CSEP</td>
<td>Canadian Society for Exercise Physiology</td>
</tr>
<tr>
<td>DOH</td>
<td>Department of Health</td>
</tr>
<tr>
<td>DHHS</td>
<td>Department of Health and Human services</td>
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<tr>
<td>EDM</td>
<td>Emancipated decision-making</td>
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<tr>
<td>FREGC</td>
<td>Faculty Research Ethics and Governance Committee</td>
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<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>GDM</td>
<td>Gestational diabetes mellitus</td>
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<td>GWG</td>
<td>Gestational weight gain</td>
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<td>GTM</td>
<td>Grounded theory method</td>
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<td>HR</td>
<td>Hazard risk</td>
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<tr>
<td>ICM</td>
<td>International Confederation of Midwives</td>
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<tr>
<td>LBW</td>
<td>Low birth weight</td>
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<tr>
<td>LGA</td>
<td>Large for gestational</td>
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<tr>
<td>LSCS</td>
<td>Lower segment caesarean section</td>
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<td>MIDIRS</td>
<td>Midwifery Information &amp; Resource Service</td>
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<tr>
<td>NICE</td>
<td>National Institute Clinical Excellence</td>
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<tr>
<td>NCT</td>
<td>National Childbirth Trust</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
</tr>
<tr>
<td>NMC</td>
<td>Nursing &amp; Midwifery Council</td>
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<tr>
<td>PIN</td>
<td>Pregnancy Infection and Nutrition study</td>
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<tr>
<td>PIS</td>
<td>Patient Information sheet</td>
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<tr>
<td>RCM</td>
<td>Royal College of Midwives</td>
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<tr>
<td>RCOG</td>
<td>Royal College of Obstetricians &amp; Gynaecologists</td>
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<tr>
<td>SPD</td>
<td>Symphysis pubis dysfunction</td>
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<td>SWD</td>
<td>Satisfaction with decision</td>
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<td>SGA</td>
<td>Small for gestational</td>
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Chapter 1: Introduction to the thesis

The purpose of this study was to better understand the factors that influence women’s decisions regarding exercise in pregnancy and to generate a theoretical model demonstrating women’s decision-making processes. The intention was to add to the current knowledge base and ultimately inform professionals who advise women about their lifestyle choices, with respect to exercise in pregnancy. This section introduces the motivating factors for this research study followed by an overview of the thesis structure.

1.1.1 Personal and professional motivation
One of the guiding principles of midwifery is the importance of working with women to promote their well-being and maximise their opportunity to have a ‘normal’ pregnancy and birth. Throughout my professional practice I have been exposed to a variety of women who used exercise to help ameliorate common ailments of pregnancy such as back pain and to prepare for labour alongside those who did not habitually exercise or ceased because of their pregnancy. As someone with an interest in exercise, I am particularly intrigued by the perspective of those who chose not to participate in exercise and have developed a mounting curiosity regarding the different perspectives women might take regarding exercise in pregnancy.

During my leadership of a master’s module on exercise and nutrition in pregnancy I developed an intensifying interest in the topic and became aware of a growing body of research and practice guidelines in the field. This suggested that further research in this area was both timely and topical. The literature highlighted that the benefits of exercising and sociocultural influences on engaging in regular exercise while pregnant, in particular are the subject of much interest and debate.

This draws on a range of subject fields including physiology, medicine, psychological and sociological research and literary analysis. Despite their different perspectives, these all take the standpoint that historically the dominant discourse regarding advice to pregnant women (including that from health professionals) has been based more on social

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1 The meaning of the word normal is subject to much debate in midwifery; in this context it refers to a physiological or healthy pregnancy and birth that does not require medical or obstetric intervention.

2 These are explored in depth in chapter 2
and cultural expectations than definitive evidence. This can be partially explained by the inextricable link between medicine and culture whereby medicine influences how we understand ourselves, our world and the way we behave. Correspondingly, culture through various socio-political agendas shapes medical practice and research and ultimately the production of knowledge about exercise and pregnancy (Jette, 2011).

It is evident from the literature that generating definitive evidence in this field is particularly challenging. Research on pregnant women raises unique methodological challenges particularly ethical complexities and the need to account for the multitude of confounding variables and wide variation in health outcomes. Subsequently, the current picture is infused with inconsistency; research findings are frequently conflicting and contradictory and this is reflected in the advice women receive (Gross & Pattison, 2007; Leiferman, 2011). Despite these challenges, there is a growing body of evidence and general consensus within the literature that exercise in pregnancy can have widespread health benefits for women and their children. This is evident across exercise guidelines internationally that recommend that all healthy\(^3\) pregnant women should engage in regular physical activity throughout their pregnancies (Smith & Campbell, 2013).

There is a common pattern for levels of moderate-intensity exercise during pregnancy to significantly decrease or cease altogether and this persists well into the postpartum period (Borodulin et al. 2009). Considering the significant physical changes occurring in pregnancy this might not seem that extraordinary; however, the literature suggests that the inactivity is not purely imposed by physical constraints (Evenson et al. 2009; Hegaard et al. 2010).

Alongside this is mounting concern regarding the negative health consequences of inactivity amongst the pregnant population. Over the last decade research has focused on addressing inactivity levels particularly as obesity is now considered a critical public health burden worldwide (Dobbs, 2014; Lee et al. 2012). Current evidence suggests that 20% of mothers in the UK are obese and the prevalence of obesity in our society is increasing with significant consequences for the health and wellbeing of future generations (Dobbs, 2014; Heselhurst et al. 2010). Furthermore, obesity is widely

\(^3\) In this context healthy refers to women who do not have medical or obstetric complications that would contraindicate exercise as defined by PARmed-X (2014)
considered to be major risk factor for obstetric complications and maternal morbidity (Knight et al. 2014). These concerns are compounded by the fact that healthy weight management is notoriously difficult to achieve and sustain in modern society (Martin et al. 2014). Given the costs of obesity to the individual, future generations and wider society and the wider benefits of exercise, it is prudent to address the issue of inactivity within the childbearing population.

The rationale given for the majority of research in this field is to identify ways to increase activity levels and health in the general population; and reduce the financial burden caused by inactivity particularly on the National Health Service (NHS). This has identified a range of barriers and predictors for exercise that have subsequently been applied to models of health behaviour. While these have provided some useful information, they do not take into account the complexities of women’s individual situations or the competing demands that occur during pregnancy. This reflects much of the criticism of the traditional reductionist biomedical model and the need for a more holistic approach focused towards developing an understanding of women’s experiences and behaviours, hence this thesis adopts a biopsychosocial perspective.

Interest has also been directed towards the identification of effective interventions to enhance and sustain women’s exercise behaviours in pregnancy (Currie et al. 2014). However, to date these lifestyle interventions have often been ineffective and had limited long-term effects (Poston et al. 2015). The importance of ensuring these address women’s emotional, psychological and physical needs by drawing on a theoretical design is gaining increased recognition (Brown et al. 2012). Despite this growing interest it is evident from the current body of knowledge (presented in Chapter 2) that there remains a significant gap in current understanding of the factors that influence women’s exercise decisions and subsequent behaviours.

1.2 Shifting to a positive, holistic approach

Historically, the majority of research into health determinants predominantly focuses on disease and risk prevention. This is reflected in the field of public health with interventions focusing on those individuals who fail to change their unhealthy lifestyle habits. This approach has been criticised for producing a biased view of the changeability
of health habits and led to recommendations for a shift in focus towards successful self-changers (Bandura, 2000). This paradigm shift is evident in emerging knowledge of positive health\(^4\) that encompasses the need to understand and promote optimal human functioning. This includes studies of resilience and resistance to adverse health outcomes and primary prevention (RCN, 2012).

Midwifery takes a similar perspective by promoting the importance of working with women to enhance their well-being and maximise the possibility of an optimal childbearing\(^5\) experience. This philosophy is situated within a conceptual framework of salutogenesis\(^6\) that focuses on treating women holistically with a primary objective of promoting good health rather than being driven by disease prevention. The theory of salutogenesis offers a conceptual way of thinking about how women can be enabled to move towards greater health by using the resources and knowledge available to them and thereby offers midwives a useful framework to empower women (Stockdale & Sinclair, 2011). Exercise is increasingly being recognised as a potential strategy for both enhancing women’s experiences of childbearing and promoting long-term good health and wellbeing (Currie et al. 2014).

Taking a salutogenic view entails defining health as a continuum between the two poles, total wellness (health) and total disease. In proposing this alternative paradigm for health research, Antonovsky (1996) highlighted how frameworks built on a pathogenic or risk factor orientation, with an inherent focus on specific diagnostic outcomes, fail to recognise the complexity and multifactorial nature of health determinants. Building on this standpoint, this thesis adopts a salutogenic orientation, taking an alternative approach to addressing health deficiencies. In contrast to the prevailing reductionist view of quantifying exercise levels and focusing on specific health outcomes, the research plan was guided by the salutogenic question ‘How can we understand movement of people in the direction of the health end of the continuum?’ (Antonovsky, 1996, pp.14). This provided a useful initial framework for understanding women’s pregnancy experiences

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\(^4\) Positive Health is the scientific study of health assets which are factors that produce stronger health, over and above risk factors for disease.

\(^5\) Childbearing describes the process of conceiving, being pregnant, giving birth and caring for children.

\(^6\) Salutogenesis is a term first described by Antonovsky, (1979) rather than focus on factors which cause disease his theory focuses on factors that support health and well-being. The term salutogenesis means health creation or source of health (Lindström and Eriksson, 2006).
and behaviours from their perspective without foreclosing on alternative possibilities arising from the data.

The shift towards women-centred midwifery care has been evident for some time in high level policy documents in the UK (Department of Health [DoH]1993; 2007) and appears likely to continue with maternal choice clearly evident on the agenda of the current review of maternity services (Harvey & McMah, 2015). Choice and control have been equated to a better childbearing experience and healthier long-term outcomes (Snowden et al. 2011). However, while women theoretically control their decisions and behaviour in pregnancy, the extent to which this is realised in reality is the subject of much debate (Coxon et al. 2014). Therefore, empowering women requires that health and fitness professionals understand the interactive complexity of the factors that influence the cognitive, motivational and behavioural dynamics of women’s experiences of exercising in pregnancy. It is, therefore, timely to investigate how this general shift in thinking impacts upon the different perspectives women might take regarding exercise in pregnancy.

This introduction commenced by asserting my personal and professional motivations and perspectives on the subject of exercise in pregnancy. The purpose of this transparency was to demonstrate reflexivity by explicating my views and values. Subsequently, the thesis contains an ongoing reflexive dialogue to demonstrate how these personal experiences and views were addressed so as not to foreclose on the generation and analysis of rich data (Charmaz, 2014). This was followed by defining the initial focus for the research and setting this within the context of current knowledge policy and practice. The final section presents a brief overview of the content and structure of this thesis.

1.3 Thesis structure

Chapter 1 introduces the research subject area and provides the professional and personal motivation and rationale for the study. It concludes with a brief synopsis of each chapter to give a broad outline of the thesis contents.
Chapter 2 presents an overview of the subject area of exercise in pregnancy, establishing what research has been done to date and highlighting pertinent gaps within current evidence. The purpose is to situate this study within the theoretical and methodological landscape of the literature and establish the rationale for the specific focus on women’s decision-making. In addition, the in-depth critical analysis of this literature will demonstrate how this review influenced the methodological and research design decisions presented in chapters 3 and 4.

Chapter 3 describes and justifies the adoption of constructivist grounded theory as the most appropriate approach to address the purpose of this study. To situate the methodological decisions, an overview of grounded theory and the key debates surrounding it are presented, followed by an in-depth discussion of the principles of constructivist grounded theory.

Chapter 4 discusses the research design and method adopted for the iterative process of data collection and analysis. It begins by outlining the strategies used to recruit the study participants who will be described as ‘the women’. The analytical procedures used during data collection and analysis are then described in detail. These are illustrated with data excerpts and examples of memos supported by theoretically sampled comparative literature. The intention is to provide a detailed audit trail of how the substantive theory was built and thereby increase the trustworthiness of the study.

Chapter 5 presents the study findings. It begins by describing the key factors that influenced the women’s decision(s). This is followed by an account of the strategies the women used when making decisions about exercise in pregnancy to negotiate the opposing influences they encountered. To ensure these are grounded in the data verbatim quotes from the interview transcripts are interspersed throughout the chapter. The identity transition process model [Figure 4-6 presented in chapter 4] serves as an organiser for the presentation of the findings.

9 In contrast to other areas of health care the term women is predominantly used in midwifery rather than client or patient and reflects the ‘woman centred approach’ of midwifery care. In this study I opted to maintain this approach to reflect the centrality of the women’s voices. The data were co-constructed with the women and they were encouraged to actively participate to ensure their voice remained central to the thesis that is both for and about them.
Chapter 6 commences with an overview of the substantive theory and then theoretically compares and contrasts the key components of the substantive theory with the literature. This aims to render the emerging substantive theory in the context of existing knowledge and simultaneously demonstrate the contribution of the generated theory to current understanding.

Chapter 7 concludes this thesis and highlights its contribution to knowledge and the consequent implications for further research, midwifery practice and education. It includes a reflection on the limitations of the study and concludes with a summary of the key findings.

Footnotes have been used throughout the thesis to supplement the main text without disrupting the flow of the main discussion. These provide additional reflexive theoretical and contextual comments to further clarify issues and terms being discussed.

Within this thesis footnotes are also used to:

- Clarify technical and methodological terms.
- Define terms as used in the present thesis.
- Compare and contrast the present study findings with current literature. This is an approach advocated by Glaser (2009) that enables the emerging theory to be interwoven with existing literature.
Chapter 2: Background and context

2.1 Introduction

This study concentrates on pregnant women's decisions regarding exercise and the factors influencing those decisions. To position the study within current thinking and locate the originality of the research question this review will explore the current knowledge base regarding how exercise impacts on pregnancy and how pregnancy simultaneously influences exercise behaviour.

It will commence by clarifying the methodological position taken regarding the use of the literature to inform the study and detail the literature search strategy. A historical overview of how theoretical understanding and sociocultural views about exercise in pregnancy have developed is provided. It is followed by a critical analysis of the current knowledge base regarding exercise in pregnancy and the ensuing exercise guidelines. This highlights the challenges of determining definitive relationships between exercise and health outcomes in the pregnant population and the ensuing conflicting and contradictory knowledge base. Current understanding regarding how this knowledge resurfaces in the form of sociocultural influences and sources of information or advice that inform women’s decisions will then be explored. This will conclude by summarising existing understanding regarding pregnant women's decisions concerning exercise to provide a clear rationale for the research focus.

2.2 The Literature review

Grounded theory continues to stimulate a ‘before or after’ debate with respect to when to engage with the literature (Bryant & Charmaz, 2007). Nonetheless, a literature review is a useful tool to enable researchers to identify the current parameters of the conversation they hope to engage in (Urquart, 2015). An in-depth discussion regarding how this debate was addressed is presented in section 3.2. Therefore, the remainder of this chapter will situate the research within the context of what is currently understood about women’s decisions regarding exercise in pregnancy; it will illuminate gaps in the current knowledge base and describe how the research design has been influenced by this
information. The literature review was guided by a number of preliminary questions about the factors that influence women’s decisions regarding exercise in pregnancy.

They included:

- Why do pregnant women exercise and what might deter them?
- What evidence exists regarding potential benefits and risks of exercise in pregnancy?
- How does pregnancy influence the prevalence and pattern of exercise?
- How do women determine what is safe?
- What guidelines exist and what evidence are these based on?
- How do women process these influencing factors?

The search strategy used to identify the most relevant literature to inform the review is summarised in Table 2-1 overleaf. Time limits were not imposed in terms of year of publication to enable a historical perspective to be realised.

Literature generated through the search was firstly scanned for relevance to the current study and used to source further relevant literature through the process of backward and forward chaining. The papers were critiqued and relevant material organised using a data extraction tool based on a modification of two critique frameworks described by Walsh and Downe (2006) and Caldwell et al. (2005). This facilitated the assessment of the quality and relevance of the research and comparative analysis of research methods and findings to determine the themes and conclusions for this chapter. This search identified that to date no studies had explicitly investigated the process of how women make decisions regarding exercise in pregnancy making it timely to explore the subject from this perspective. A similar search strategy was adopted using internet search engines to identify grey literature such as government policies and exercise guidelines and to elicit examples of how the subject is portrayed in the media and the information directed at pregnant women.

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10 Forward chaining uses citation listings to identify subsequent papers that have cited a piece of literature. It can identify relevant papers in alternative subject fields and also post publication discussion and argument. (Open University, 2015)

11 The key difference was that the inclusion and exclusion criteria in 2-1 were less rigidly applied
<table>
<thead>
<tr>
<th>Aim</th>
<th>To identify key literature and texts, including both published and unpublished studies, to enable the work to be situated within the current body of related knowledge.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key search terms and variants</strong></td>
<td><strong>Exercise</strong>&lt;br&gt;Pregnancy&lt;br&gt;Maternity&lt;br&gt;Maternal&lt;br&gt;Gestation&lt;br&gt;Childbearing&lt;br&gt;For two&lt;br&gt;Birth&lt;br&gt;Pregnant&lt;br&gt;Women’s&lt;br&gt;Antenatal&lt;br&gt;Prenatal&lt;br&gt;Perinatal</td>
</tr>
<tr>
<td><strong>Search technique</strong></td>
<td>Boolean operators combined search terms</td>
</tr>
<tr>
<td><strong>Databases accessed</strong></td>
<td>Science direct, Sport discus, CINHAL, MIDIRS, EMBASE, PubMed, Medline.</td>
</tr>
<tr>
<td><strong>Data management</strong></td>
<td>Results from the search were stored and managed within Endnote and subsequently in NVivo.</td>
</tr>
<tr>
<td><strong>Inclusion Criteria</strong></td>
<td>Primary studies that included factors that might influence women’s decisions regarding exercise, regardless of the study design. Systematic literature reviews Studies published in the English language</td>
</tr>
<tr>
<td><strong>Exclusion criteria</strong></td>
<td>Animal-based studies, this review did not intend to explore the physiology underpinning the impact of exercise on health. Specifically focused on pelvic floor exercises Post-partum exercise, the chosen focus of this study is pregnancy Studies focusing on the impact of exercise on disease processes such as diabetes and pre-eclampsia.</td>
</tr>
<tr>
<td><strong>Individually hand searched journals</strong></td>
<td>British Journal of Midwifery Psychology of Sport and Exercise Research Quarter for Exercise and Sport Birth</td>
</tr>
</tbody>
</table>

**Table 2-1 The search strategy**

Engaging with the literature was an iterative part of the research process. Studies published before and throughout the present study’s stages of data collection are included in this chapter as relevant to the themes generated from the review. As the study progressed, the literature search strategy evolved to enable theoretical comparison with the emerging substantive theory. This facilitated the development of a ‘theoretical story’ from the data. Literature used for this purpose is presented in chapters 5-6.

It is apparent from the literature that the common and professional use of the terms ‘physical activity,’ ‘exercise’ and ‘sport’ are often used indiscriminately and therefore,
warrant clarification. In addition, there appears to be a discursive shift away from ‘physical activity’ with growing use of the term ‘exercise’ within research literature and health policy documentation. This reflects a major change from discouraging moderate domestic physical activity owing to concerns regarding high infant mortality in the early 1900’s towards strategies aimed at reducing disease caused by inactivity and instead encouraging leisure time exercise in pregnancy. Certain subject disciplines demonstrate a preferred term while others interchange between exercise and physical activity apparently randomly (Smith & Campbell, 2013). For the purpose of this review12 ‘exercise’ was initially defined as any physical activity that contributes towards the British Association of Sport and Exercise Sciences (BASES) minimum recommendations to produce health benefits (O’Donovan et al. 2010). This includes any purposeful physical activity beyond that done in routine day-to-day activity. The definitions adopted for this review of the literature are detailed further in Appendix 1. Once data collection commenced, a less prescriptive approach was taken and exercise was deemed to be whatever the women understood the term to represent13.

2.3 Historical perspectives

In adopting a grounded theory approach guided by a symbolic interactionist perspective, this research focuses on the meaning of events to women in their normal everyday settings. This review will, therefore commence by providing a historical overview of how current knowledge, attitudes and beliefs regarding exercise in pregnancy have evolved. It builds on the premise that knowledge production is influenced by the continuing interplay between medicine and culture through which the landscape of exercise in pregnancy has undergone significant change influenced by evolving biopsychosocial issues and shifting social norms (Jette, 2011).

The potential for exercise to impact on pregnancy is not a new concept. As far back as the third century BC, Aristotle recognised the association between maternal exercise and desirable childbirth outcomes, particularly how a sedentary lifestyle often led to more difficult childbirth (Smith & Campbell, 2013). Biblical writings also identify how

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12 With respect to nomenclature within this thesis the term exercise is used predominantly except where guidelines or research specifically refer to physical activity or non-leisure activity is being referred to.
13 This was guided by constructivist grounded theory approach adopted by this study which aimed to co-construct theory through the interaction with the women.
Hebrew slaves involved with active hard work were more likely to have easy and shorter labours than sedentary Egyptian women (Rankin, 2002). Drawing on a documentary analysis of obstetric texts and manuals for midwives, Eccles (1982) highlights how this relationship was acknowledged throughout the 15th to 18th centuries, with reports that rich women living a sedentary life experienced more difficult labours compared to poor hard-working women. However, expert opinion and society have not always supported exercise in pregnancy. Pre the mid-1930s, pregnancy and childbirth were fraught with dangers; miscarriage, maternal and neonatal mortality were common events that women and health professional had little control over (Loudon, 2000). Concern regarding the high infant mortality gave rise to the perceived fragility of pregnancy and medical advice that cautioned against overexertion (Hanson, 2004). Many women existed within social circumstances that required a physically active lifestyle often accompanied by poor nutrition and health. During this time medical professionals are reported to have given contradictory messages. Some encouraged exercise during pregnancy while others warned about potential dangers, with advice full of admonitions and contradictions (Eccles, 1982). This discourse persisted into the mid-20th century when the general consensus was to encourage gentle physical activity to help prepare for childbirth, such as gentle walking or pelvic floor exercises, but to avoid overexertion. The natural childbirth movement stimulated growing interest in how exercise might help women prepare for labour, deriving impetus from its reaction to the increasing medicalisation of pregnancy and childbirth (Hanson, 2004).

At this time several other developments influenced the changing landscape of exercise in pregnancy. Medical and cultural developments around that time, such as birth control and the abortion act (HMSO, 1967), initiated the repositioning of reproduction as a ‘choice’. With technologies such as ultrasound scanning enabling visualisation and testing of the fetus, fetal rights became increasingly separated from those of the mother (Hanson, 2004). This had far-reaching implications, raising the possibility that the interests of the fetus and pregnant women might conflict, initiating recommendations for women to modify their lifestyle and prioritise the fetus. Alongside this, the 2nd wave of feminism challenged long-standing perceptions regarding pregnant women’s capabilities and social roles in general (Ellison, 2011). Whether this ultimately represented more freedom is a subject of feminist debate with many suggesting this was simply symbolic of new, albeit
different sociocultural pressures for conformity (Miller, 1998; Nash, 2012). Nevertheless, the health and fitness boom of the 1970’s resulted in a significant increase in women’s participation in exercise and competitive sport (Rossing et al. 2014).

The dissent amongst the medical profession around that time is highlighted in an editorial by physician Michael Bruser (1968) in Obstetrics and Gynaecology that criticised the vague cautionary guidelines about appropriate exercise during pregnancy. He asserted that these unquestioningly reiterate archaic notions about the frailty of the pregnant body despite little scientific or clinical basis. Two schools of thought began to evolve; without strong evidence for the safety of exercise the medical profession (Artal, 1992) tended to advocate caution and set ‘safe’ parameters. In contrast, those rooted in the sport medicine community (Clapp, 2002; Shangold & Mirkin, 1985) took a more liberal approach, encouraging women to listen to their bodies and follow their common sense (Jette, 2011). This latter viewpoint was advocated by Lutter (1985), whose survey of women’s pregnancy and exercise experiences, privileged women's voices as opposed to the earlier laboratory studies. This provided an alternative basis for shaping exercise recommendations, albeit not meeting the rules of evidence-based medicine.

The ideology of evidence-based medicine that ultimately prioritised randomised controlled trials as the most reliable form of knowledge (Sackett et al. 1997) was another significant influence on the development of knowledge regarding exercise in pregnancy. What had previously counted as knowledge was subject to criticism for being inconclusive when judged through the ‘rules’ of a positivist paradigm. In its place an unwieldy volume of research and clinical guidelines has evolved (Greenhalgh, 2014). This has led to further inconsistency regarding how evidence is interpreted and subsequently translated into research findings and advice to women.

As medical research began linking women’s behaviours with birth defects, potential risks to the fetus from maternal exercise-induced hyperthermia and anoxia were raised that reinforced concerns that pregnant women might pose a threat to the fetus (Sternfield, 1997). Alongside these concerns was the emergence of numerous unfounded myths including suggestions that tumble turns in the swimming pool could cause the cord to get tangled, and jarring from running could cause the egg or placenta to tear loose or break the waters (Clapp, 2002). Clapp and Cram (2012) suggest these have subsequently been
intensified by anecdotal evidence, and research findings being taken out of context and self-perpetuated by some health professionals (Gross & Pattison, 2007). This further highlights the inextricable link between medicine and culture and the epistemological debate regarding what counts as evidence. Therefore, it is important to consider the impact of these chronological changes and the pervasive ideologies on the advice women may be receiving in pregnancy from family members, peers and health professionals.

Historically, engagement in exercise outside the home and professional sport has predominantly been restricted to men, further reinforced by medical advice for women to rest during pregnancy (Hassall, 2011). While sport and pregnancy are no longer considered to be mutually exclusive, a long history of often paternalistic concern exists concerning the effect of participation in sports on women's childbearing and child-rearing capabilities (Berryman 1992; Vertinsky, 1988). Recent initiatives to improve public health (Department of Health, 2011) have raised lay awareness of the importance of a healthy lifestyle and, while the gender gap with respect to exercise participation continues to persist, it is gradually lessening (Health Survey for England, 2013). The resulting changing attitude and behaviour in respect to exercise is evident by the extensive growth of fitness clubs across the UK (Fitness Industry Association, 2010), and the mass media focus on exercise and healthiness as an individual responsibility (Rossing et al. 2014). The opportunity for women to participate in exercise and increasingly elite sport has been progressively enabled through such sociocultural changes in the UK over this century (Lopiano, 2000; O'Brien & Robertson, 2010). The London, 2012 Olympic Games heralded the ‘Year of the Woman’. For the first time in Olympic history, every one of the, 204 delegations included female athletes, of which one was the much publicised markswoman Nur Suryani Taibi who was 8 months pregnant at the time of competing (Pickup, 2012). Although not publicised at the time several other athletes also competed while pregnant including Anne Marie Johnson (Handball), Maria Navarria (Fencing) and Kerri Walsh (Volleyball) (Sports reference LLC, 2015).

While high profile cases further challenge some of the long held assumptions regarding the capacity of the pregnant body, concerns regarding risk of exercise and sport specific to pregnancy continue to be raised and subsequently challenged. Prior to this a spate of blanket bans on pregnant women competing at competitive level in sports such as netball
and basketball led to much media attention and debate focusing on the perceived dangers of sports participation (Brown, 2002). It has been argued that this is in spite of robust evidence that exercise and sport are not a major cause of pregnancy trauma \(^{14}\) (Abbasi & van den Akker, 2015; Weiss, 1999). Neither is it appropriate to compare hypothetically, the outcome of sporting accidents with those of road traffic accidents where the potential impact is substantially stronger (Finch, 2002). Not only is there no evidence to justify banning pregnant women from sport (White, 2002), in line with the Sex Discrimination Act 1984, it has been highlighted that it is illegal to enforce a ban on pregnant athletes (Villa & O’Reilly, 2002).

Despite the persisting myths and misconceptions there is a sociocultural shift in attitudes towards women exercising as evident in exercise guidelines (American College of Obstetrics and Gynaecology, ACOG, 2015) and activity patterns (Liu, 2011). Nevertheless, pregnant women are commonly advised by gyms, fitness instructors and healthcare literature to seek advice from their midwife or GP prior to engaging in exercise. This raises the question of what this advice is to be based on and what evidence exists to inform health and fitness professionals. The next section of this review will present an analysis of national guidelines regarding exercise in pregnancy and the evidence upon which these are constructed.

2.4 How does exercise affect health?

This thesis adopts the widely accepted view that engagement in regular exercise confers a range of health benefits to the pregnant women. This section will critically analyse the existing state of this evidence base to establish what this premise is based on.

2.4.1 Exercise in the general population

In many respects the knowledge and clinical guidelines for exercise in pregnancy are an extension of those for the general population. Therefore, this section commences by giving a broad overview of these, followed by a more detailed critical analysis of the evidence and guidelines specific to pregnancy.

It is widely accepted that exercise has both physiological and psychological health benefits (O’Donovan et al. 2010), which is supported by a growing body of

\(^{14}\) A more in-depth discussion regarding the risk of injury from exercise is presented in section 2.5
epidemiological evidence endorsing the promotion of exercise in the general population (Department of Health, 2011). A systematic review of evidence for the long-term (>5 years) relationship between physical activity and health determined that, if carried out regularly and with sufficient physical intensity, exercise can reduce the risk of disease including: cardiorespiratory (hypertension, stroke, coronary heart disease), metabolic (2 diabetes mellitus, and obesity) and degenerative brain disease (Alzheimer’s disease and dementia) (Reiner et al. 2013). There is also evidence to suggest it can reduce the incidence of musculoskeletal disorder (lumbago, osteoporosis) and cancer (breast and colon) and enhance functional health (prevention of falls) (British Heart Foundation National Centre, BHFNC, 2013). Research has also identified the positive impact regular exercise can have on psychological health: potentially alleviating stress and depression, boosting self-esteem and enhancing body image (Herring, 2012). Current exercise guidelines for the general population [Table 2-2] are informed by this rapidly expanding body of research.

<table>
<thead>
<tr>
<th>Activity guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more; one way to approach this is to do 30 minutes on at least 5 days a week.</td>
</tr>
<tr>
<td>2. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or combinations of moderate and vigorous intensity activity.</td>
</tr>
<tr>
<td>3. Adults should also undertake physical activity to improve muscle strength on at least two days a week.</td>
</tr>
<tr>
<td>4. All adults should minimise the amount of time spent being sedentary (sitting) for extended periods. Individual physical and mental capabilities should be considered when interpreting the guidelines.</td>
</tr>
</tbody>
</table>

Table 2-2 Physical activity guidelines for adults (19–64 years) (DoH, 2011, pp.1).

The literature suggests that currently these have failed to impact on the physical inactivity pandemic (Hunter et al. 2014), with studies suggesting only 20% of the UK population are currently meeting the guidelines (Farrell et al. 2013). Despite a growing awareness of these health benefits, physical activity levels remain low in the UK with global comparisons suggesting that the UK has the third most inactive population in Europe (Hallal et al. 2013). Physical inactivity accounts for over 6% of deaths globally and is considered the fourth leading risk factor for global mortality (Lee et al. 2012; WHO, 2009). This further supports the need for increased attention to strategies that facilitate participation in exercise. This is an important issue in terms of public health and political
agenda, owing to the health, social and economic benefits of reducing physical inactivity. Young adult women, particularly those with young children, have been shown to be the least likely to exercise which is particularly significant in light of estimates suggesting that physical inactivity is a major risk factor for ill-health in women (Allender et al. 2007). One reason for current inactivity is a lack of awareness of the health benefits and guidelines in the general population (DeBastiani et al. 2014) and particularly ominously in medical students in the UK (Dunlop & Murray, 2013). While knowledge alone is not sufficient to change behaviour, it is a recognised precursor that highlights the need for guidelines to be disseminated more widely (Hunter et al. 2014).

2.4.2 Exercise in pregnancy
The effect of exercise in pregnancy has similarly been the focus of extensive research, demonstrating far reaching benefits. Tables 2-3 & 2-4 overleaf give an example of the more robust studies aiming to give some insight into typical research in this area and the challenge of demonstrating conclusive findings. The quality of these studies was assessed using a quality assessment tool developed from 9 specific quality criteria\textsuperscript{15} derived from the Cochrane handbook of systematic reviews (Abbasi & van den Akke 2015). While there is some debate in the literature regarding the effectiveness of such scoring systems (Ahn and Becker 2011) the purpose on this occasion was purely to give an overall impression of the studies.

In addition to the potential health benefits in the general population, many common complaints of pregnancy, including tiredness, backache and oedema, are alleviated in women who exercise (Lewis, 2008; Melzer et al. 2010a). Exercise in pregnancy has been shown to reduce the risk of pre-eclampsia, treat or prevent gestational diabetes and alleviate pregnancy-related musculoskeletal issues such as back pain (Babbar et al. 2012). If done regularly it can help reduce maternal weight gain and promote a sense of wellbeing (Barakat et al. 2011).

\textsuperscript{15} Study quality was determined through a points system (1 = yes, 0 = unclear, –1 = no) for 9 criteria: sample size (≥30), representative of study population, attrition (< 30%), used validated measures, appropriate timing of measures, measures consistent with aims, conclusions consistent with results, clear methodology and clear accurate statistical analysis. The score range was 0-9
<table>
<thead>
<tr>
<th>Reference, year, country</th>
<th>Study design and, objectives</th>
<th>Sample</th>
<th>Findings and clinical implications</th>
<th>Key strengths</th>
<th>Limitations</th>
<th>Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currie et al. 2014 Canada</td>
<td>Prospective cohort study to examine if physical activity before and in 20 weeks of pregnancy impacts on maternal and neonatal outcomes</td>
<td>1,749 women Mean age 31 years, 49 % nulliparous, and 41 % had pre-pregnancy BMI ≥25 kg/m²</td>
<td>Exercise in the year prior to or first half of pregnancy appears to reduce the incidence of LGA (P=0.005) but doesn’t affect the incidence of pre-term birth or SGA. Suggests physical activity pre and during pregnancy has a protective effect on the development of GDM, and was not associated with inappropriate GWG.</td>
<td>Used Kaiser Physical Activity Survey validated in a pregnant population. Accounted for important potential confounders. Included leisure time exercise and non-leisure time activities.</td>
<td>Inadequate numbers of women attained high physical activity levels and, therefore, the effects of these could not be assessed. Potential misclassification of activity type and levels due to recall bias.</td>
<td>8</td>
</tr>
<tr>
<td>Vamos et al. 2015 South Florida</td>
<td>Longitudinal cohort study to examine whether birth outcomes are affected by physical activity patterns over the life course</td>
<td>1,713 nulliparous women</td>
<td>Physical activity patterns across the life-course may reduce risk of pre-term birth 12.2% (long-term physically active) vs. 18.7 % (not physically active) (aOR=0.55, 95 % CI=0.33–0.91). Recommend strategies to establish the development of long-term physical activity prior to pregnancy.</td>
<td>Controlled for socio-demographic variables and recognised predictors of poor birth outcomes. Long-term approach.</td>
<td>Secondary data analysis.</td>
<td>8</td>
</tr>
<tr>
<td>Melzer et al. 2010b Switzerland</td>
<td>Observational study to observe the relation between pregnancy outcomes and recommended physical activity levels during pregnancy</td>
<td>Convenience sample of 44 pregnant women recruited during their last trimester from a city university hospital.</td>
<td>The risk for operative delivery is lower in active women compared to inactive P= 0.026. Duration of 2nd stage labour shorter in the active vs inactive group 88 and 146 minutes, respectively (P=0.05). No significant differences in birthweight, Apgar scores, length of labour, use of epidural anaesthesia, episiotomy or perineal laceration, or postpartum haemorrhage.</td>
<td>Extensive physiological measurements to confirm activity and determine individual activity levels. Study design could inform future research.</td>
<td>Reliant on accuracy of hospital records for outcomes. Many results inconclusive, further studies recommended.</td>
<td>5</td>
</tr>
<tr>
<td>Juhl et al. 2010 Denmark</td>
<td>Cohort study to examine the association between physical exercise during pregnancy and fetal growth measures</td>
<td>79,692 live born singleton neonates</td>
<td>Non-exercisers were more likely to have high GWG. Exercising women had babies with birth weight below the sample average although differences were minimal. Slightly decreased risk of both SGA (HR 0.87; 95%CI, 0.83-0.92) and LGA (HR 0.93; 95%CI, 0.89-0.98) in exercisers. Suggest the offspring of smoking mothers benefit more from exercise than non-smokers but not statistically significant.</td>
<td>Large sample size that collected exposure data prospectively.</td>
<td>Exercise self-reported and maybe overestimated (in Denmark exercise in pregnancy is considered a healthy positive behaviour).</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2-3 Observational studies exploring impact of physical activity on pregnancy outcomes

Explanation of abbreviations and terms. - Low birth weight (LBW), Gestational weight gain (GWG), small for gestational (SGA) and large for gestational (LGA), Gestational diabetes mellitus (GDM), hazard risk (HR), Lower segment caesarean section (LSCS). Ponderal index is a measure of neonatal leanness.
<table>
<thead>
<tr>
<th>Reference, year, country</th>
<th>Study design and objectives</th>
<th>Sample, setting</th>
<th>Findings and clinical implications</th>
<th>Key strengths</th>
<th>Limitations</th>
<th>Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price et al. 2012 Washington USA</td>
<td>Prospective RCT to assess the benefits and potential risks of exercise during pregnancy</td>
<td>62 sedentary pregnant women from local obstetric practices</td>
<td>Active group significantly (P&lt;0.01) less likely to have an LSCS (6%) than control group (32%) and reported faster postnatal recovery. (AG 4.7 days CG 8.7 p= 0.05) Minimal difference in total length of labour, length of pregnancy, GWG, birth weight percentile mean or Apgar scores between groups, 2nd stage averaged 47 mins in the active group and 25 mins in control group, but possibly skewed by greater proportion multiparous women in the control group.</td>
<td>RCT, prospective data and objectively observed exercise program. Close monitoring of control group. A priori calculations to ensure adequate sample. Good compliance to exercise regime.</td>
<td>Some incomplete data</td>
<td>8</td>
</tr>
<tr>
<td>Barakat et al. 2011 Spain</td>
<td>Prospective RCT to assess effect of moderate physical activity performed during entire pregnancy on perception of health status</td>
<td>80 sedentary pregnant women from obstetric hospital</td>
<td>Intervention involved 35-45 min exercise session 3/week from 6-9 weeks of pregnancy to 38-39 weeks Intervention group had higher perceived health status (54.5% compared to 27.3%, P= 0.03) and reduced maternal weight gain compared to control group (EG 11.885g, CG 13.903g P =0.03).</td>
<td>Carefully designed exercise program and monitoring of exercise group</td>
<td>Lacks detail of alternative intervention for control group. Perceived health status is a very subjective outcome to assess.</td>
<td>7</td>
</tr>
<tr>
<td>Haakstad &amp; Bo, 2011 Norway</td>
<td>Prospective RCT to examine effect of a supervised exercise-program on birth weight, length of pregnancy and Apgar-score</td>
<td>105 sedentary, nulliparous pregnant women, randomized to either an exercise group (EG) or control group (CG)</td>
<td>No significant difference in length of gestation, mean birth weight or number of LBW babies between EG and CG. Prevalence of LGA was 9.6% (n=5) in the EG vs. 17% (n=9) in the CG. Apgar score (1 min) was higher in the EG compared with CG (P=0.02). 12 week course of twice weekly aerobic dance program in trimester 2/3 in previously sedentary women has no negative affect</td>
<td>A priori calculations to ensure adequate sample. Blinded RCT design. Exercise regime followed ACOG guidelines to facilitate comparison with other studies</td>
<td>Adherence to exercise regime was poor. Differences in nutritional intake not assessed; this would be a useful consideration in future studies.</td>
<td>5</td>
</tr>
<tr>
<td>Moyer 2014 East Carolina</td>
<td>Cross sectional comparison study to determine effects of different modes of exercise throughout pregnancy (16-36 weeks) on maternal fetal and neonatal health adaptations</td>
<td>15 pregnant women in each intervention group; aerobic, circuit training or control (low intensity yoga).</td>
<td>Aerobic training during pregnancy decreased body fat gain and improved maternal heart health Circuit training during pregnancy improves fetal heart function and development (P=0.04) and increased Ponderal index(P=0.03). Different types of exercise do not adversely affect growth and may positively impact on neonatal body composition. Recommend performing both aerobic and strength training during pregnancy to maximize maternal and fetal benefits,</td>
<td>Physiological assessment tools validated in pregnant populations.</td>
<td>Used a restricted randomization process to enhance retention that might bias selection. Pilot study for ENHANCED by Mom study that plans to recruit 150 women (Moyer et al 2015)</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2-4 Clinical trials exploring impact of physical activity on pregnancy outcomes, see Table 2-3 for abbreviations and terms explanations
These benefits are recognised by the National Institute for Health and Clinical Excellence (NICE), which have published several guidelines (2010, 2015) endorsing the benefits of exercise both in pregnancy and for the general population to address obesity related disease. Based on a range of large cohort studies and smaller clinical trials, exercise can reduce the incidence of post-partum depressive symptoms (Ersek & Huber, 2009; Demissie et al. 2011) and have a positive impact on mental health (Gaston & Prapavessis, 2013; Symons Down et al. 2012).

There is a growing body of evidence pertaining to fetal benefits that include improved stress tolerance, advanced neurobehavioral maturation and higher Apgar scores (Haakstad & Bo, 2011). While it has been suggested that exercise throughout pregnancy can shorten the length of labour and reduce delivery complications (Melzer et al. 2010b; Price et al. 2012) strong evidence to support this is currently limited. Exercise in pregnancy has been shown to modify the growth and on-going development of the fetus resulting in decreased fat mass (Juhl, 2010; Moyer, 2015), particularly in overweight and obese women. Increased adiposity at birth is a risk factor for childhood obesity that exercise reduces by mediating the interplay of maternal insulin action and infant body composition (Catalona, 2010). This also reduces the risk for later obesity and long term metabolic dysfunction (Crozier et al. 2010).

Enhanced understanding of this protective mechanism is reflected by a dramatic shift in respect to how the impact of exercise on birth outcome is assessed. Early studies raised concerns that regular exercise appeared to reduce average birthweight these inappropriately construed this as a negative consequence of exercise while ironically including large for gestational age babies (LGA) in the positive outcome group (Lotgering et al. 1984). As reflected in Tables 2-3 & 2-4, the optimal birthweight range for predicting positive long-term health is now better understood with extremes at either end considered more appropriate markers of unhealthy outcomes (Currie et al. 2014). The goal of interventions should be on establishing long-term exercise habits recognising that health gains are generally progressive with increasing amounts and frequency of activity.

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16 The Apgar scoring system is a basic screening tool to evaluate a newborn's condition at birth with a range of 0-10.
17 Size by gestational age is determined by comparing birth weight, length, or head circumference against appropriate (i.e. matched for ethnicity, gender) population percentile charts.
However an upper optimal limit has yet to be established, (Vamos et al. 2015). The studies reflect the current trend in this field of research that favours the positivist paradigm by taking a quantitative approach that fails to develop insight into women’s experiences. This could be addressed by adopting a mixed method design to include qualitative data to ascertain how exercise in pregnancy influences women’s experience of birth. While qualitative outcomes are more subjective to assess, some validated tools for this purpose have been developed in other studies, i.e. birth satisfaction scale (BSS) (Hollins Martin et al. 2014).

Over the last decade there has been a growing interest in developing exercise interventions to prevent pathology as opposed to encouraging wellbeing and a healthy lifestyle. This may be because this is considered to be where the greatest health benefits can be gained. This is exemplified by recent Cochrane reviews. In 2012 an evaluation of the effectiveness of diet and exercise on reducing excessive weight gain during pregnancy was inconclusive (Muktabhant et al. 2012). Three years later Muktabhant et al. re-evaluated current evidence with a meta-analysis of 65 randomised controlled trials (RCTs). The evidence was categorised as high-quality and enabled a clear conclusion that weight management interventions resulted in a 20% reduction in women gaining excess weight during pregnancy (risk ratio 0.80, 95% confidence interval 0.73-0.87) (Muktabhant et al. 2015). The review highlighted other potential benefits supported by moderate quality evidence that include a lower risk of caesarean delivery, macrosomia, maternal hypertension and neonatal respiratory morbidity. The review concluded that ‘exercise appears to be an important part of controlling weight gain in pregnancy; however, more research is needed to establish safe guidelines’ (Muktabhant et al. 2015, pp.2). These findings support those from a similar systematic review that found exercise interventions in pregnancy significantly reduced gestational weight gain by 2.2kg. However, inconsistencies in study design limited analysis and prevented the identification of the most effective exercise programme. Despite this, the recommended interventions including aerobic, toning and strengthening exercises (Elliot Sale et al. 2015).

In a critical review of the literature, Scully et al. (1998) cautioned that exercise should not be treated as a panacea; instead more consideration should be given to the evidence that suggests specific conditions respond differently to particular exercise regimens. Epidemiological studies are continually identifying new variables that current studies are
not accounting for. An example of this is that prematurity appears to predispose adults to metabolic and cardiac disease which is accentuated in inactive individuals, in addition activity levels from young adulthood through to old age are reduced in low birth weight compared with normal birth weight individuals (Siebel, et al. 2012). Therefore while the primary cause of these diseases is prematurity this could inappropriately be attributed to inactivity in these individuals. It is, therefore, important to acknowledge the complexities of the interplay between exercise and physical and mental health as well as the potential dangers of ill-advised exercise recommendations. This further highlights the importance of developing an in-depth understanding of women’s experiences of exercise in pregnancy and the factors that influence their decisions.

Despite the recognised benefits of exercise, the unnecessary ‘pregnant pause’ as labelled by Dempsey et al. (2005) continues. Studies worldwide demonstrate that women's physical activity levels decrease progressively throughout pregnancy, UK (Liu, 2011), USA (Evenson, 2011), Denmark (Juhl et al. 2012), Brazil (Nascimento et al. 2015). It has been suggested that this is not due purely to the challenges posed by the physical changes of pregnancy, but influenced by the dominant discourse that prioritises rest over exercise (Abbasi & van den Akker, 2015; Clarke & Gross, 2004). These observations warrant increased attention to ways that women might be better supported to continue their participation in exercise and sport (Brown et al. 2007). Furthermore, it has been suggested that ‘preventing the already active from slipping into inactivity’ can be equally as effective as focusing on the sedentary (Giles-Corti & Donovan, 2002, pp.1808). Therefore, one strategy for increasing women’s participation in exercise is to support women to continue exercising throughout the childbearing years. This is supported by current physical activity guidelines which will be critically analysed in the following section.

### 2.5 Exercise guidelines

The aim of physical activity guidelines is to describe the optimal duration and level of exercise for enhancing health and well-being while minimising any potential risks. However, generating definitive evidence particularly in the pregnant population offers numerous challenges and subsequently the current picture is still infused with inconsistency and conflicting and contradictory research findings.
It is not only historically, but in some instances relatively recently, that women have been discouraged from engaging in exercise and sport due to concerns about potential injury to mother and fetus. In the 1980s, recommendations regarding exercise in pregnancy were predominantly based on cultural and traditional notions rather than robust evidence (Clapp, 2006). For both ethical and technical reasons, much of the research of that era was conducted on animals (Lotgering et al. 1984) and findings were subsequently inappropriately extrapolated to the human population. These studies predominantly on sheep raised concerns with respect to pre-term delivery, a reduction in placental blood and induced maternal hyperthermia, especially in the first trimester\(^{18}\), leading to fetal abnormality. The resulting impact of this is evident in the original ACOG\(^{19}\) (American College of Obstetrics and Gynaecology) guidelines that advised that, pregnant women should refrain from initiating exercise and exercising women should reduce habitual levels (ACOG, 1985). This also included restricting heart rate to below 140 bpm and strenuous exercise to maximum 15 minutes’ duration. Of note, the guidelines cautioned that women should not commence an exercise program if they had been inactive prior to pregnancy. The original ACOG guidelines were the subject of much controversy and debate, criticised on the one hand for being too general and on the other for being too specific (Zavorsky & Longo, 2012). Many academics, particularly sports scientists (Gauthier, 1986), were aggrieved that there had not been wider consultation. Other criticisms of the resulting guidelines included that they were overly conservative in nature, not based on existing data, failed to acknowledge individual differences in women's fitness and most concerning, that the ACOG may have unwittingly set a legal standard (Jette, 2011).

More recent human scientific investigations have gradually dispelled the earlier concerns that moderate maternal exercise led to poor perinatal outcomes (Clapp & Cram, 2012; Currie et al. 2014). Conversely these concluded that pregnant women are relatively well-protected against hyperthermia because heat dissipation in humans is enhanced during pregnancy (Clapp & Cram, 2012). Many of the physiological changes of pregnancy mimic those that occur with regular exercise; earlier postulations that these might be in

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\(^{18}\) Pregnancy is divided into three trimesters each lasting 12-14 weeks.

\(^{19}\) The original ACOG (1985) guidelines, have been subject to several revisions referred to within this chapter these occurred in 1994, 2002, 2015.
conflict with each other were gradually dispelled as studies demonstrated their complementary and adaptive nature. Alongside growing awareness of health benefits of exercise this new evidence highlighted the need for exercise guidelines to be reviewed and updated. Consequently in 1994, ACOG responded by removing the earlier restrictions on heart rate and exercise duration (ACOG, 1994). The guidance shifted towards a more encouraging tone in regard to exercise and recommended that:

‘healthy pregnant women should be encouraged to engage in at least 30 minutes of moderate exercise on most, if not all, days of the week’ (ACOG, 1994, pp.66).

Despite a further update of the guidelines in 2002 (reaffirmed in 2009), the growing body of evidence on the benefits of antenatal exercise over the last decade has led to recurring calls for the 2002 ACOG guidelines to be updated (Symons Downs et al. 2012). Suggested revisions included greater specificity in defining moderate to vigorous physical activity and the specific minimum weekly energy expenditure, clarification of the impact of vigorous activity on maternal and infant health outcomes and to attend specifically to the distinct issues surrounding maternal obesity (Mottola, 2009).

In response, ACOG recently published a further revision ‘The Physical Activity and Exercise during Pregnancy and the Postpartum Period’ guidelines (2015) that aim to reflect emerging clinical and scientific advances. To date, these have yet to generate any published comment20. The key recommendation is that:

‘an exercise program that leads to an eventual goal of moderate-intensity exercise for, at least, 20–30 minutes per day on most or all days of the week should be developed with the patient and adjusted as medically indicated.’ (ACOG, 2015, pp.4).

These later guidelines also promote the health benefits and safety of exercise in pregnancy for not only previously active women but also those who were inactive prior to pregnancy (assuming no contraindications are present). Furthermore, there is some guidance for special cases such as women who are obese or elite athletes alongside defining specific

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20 These were published 23.11.15 during the final writing up of this thesis, hence enabling minimal time to capture any subsequent response.
levels on the Borg\textsuperscript{21} scale or using the ‘talk test’ to measure perceived exertion. These also specifically differentiate between which exercises are safe during pregnancy and those that women should avoid. While this goes some way towards addressing some of the suggested revisions, a degree of caution is still evident as exemplified in the following quote:

‘Although an upper level of safe exercise intensity has not been established, women who were regular exercisers before pregnancy and who have uncomplicated, healthy pregnancies should be able to engage in high-intensity exercise programs, such as jogging and aerobics, with no adverse effects.’ (ACOG, 2015, pp.4)

The current recommendations are the same as made to women who are not pregnant and based on the current recommendations of the American College of Sports Medicine (ACSM), (Haskell et al. 2007). The ACSM guidelines are also reflected in the consensus statement by the British Association of Sport and Exercise Sciences (2010), specifically designed to act as guidelines for health professionals (O’Donovan et al. 2010).

Generally, international guidelines for antenatal physical activity are relatively consistent with US recommendations which are the most commonly referenced in the research literature. For example, the Netherlands, Canada, United Kingdom and Australia as well as the ACOG have generally adopted the principles of the Department of Health and Human Services, USA (DHHS, 2008) physical activity guidelines for pregnancy. However, as highlighted in Table 2-5 overleaf, subtle variations exist both with respect to contraindications for exercise and minimum recommended activity levels. These confound the evidence base and make comparing research findings difficult.

\textsuperscript{21} The Borg Scale (Borg 1982) is simple self-assessment method for rating perceived exertion during exercise it ranges from 6-20 and is also used for clinical assessment in cardio and respiratory medicine.
<table>
<thead>
<tr>
<th>Publishing body</th>
<th>Date</th>
<th>Recommended moderate intensity aerobic activity</th>
<th>Advice regarding vigorous activity</th>
<th>Additional recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>American College of Sports Medicine (ACSM, USA)</td>
<td>1997</td>
<td>≥30 min on 5-7 days/week</td>
<td>Vigorous-intensity aerobic activity ≥20 min on 3 day/week or combinations of moderate/vigorous</td>
<td>Can accumulate in bouts of 10-minutes or more minutes. Muscle strengthening on at least two days a week.</td>
</tr>
<tr>
<td>Royal College of Obstetricians and Gynaecologists (RCOG, UK)</td>
<td>2006</td>
<td>If previously sedentary 30 mins 4-7 days/week</td>
<td>Max heart rate of 60-70% for women sedentary prior to pregnancy and 60-90% of maximal heart rate to maintain fitness</td>
<td>Program that leads to a goal of moderate-intensity exercise for at least, 20–30 minutes per day on most or all days of the week. Not explicitly stated if can accumulate in bouts</td>
</tr>
<tr>
<td>Department of Health and Human services (DHHS, USA)</td>
<td>2008</td>
<td>≥150 mins/week</td>
<td>If already doing vigorous intensity activity may continue with healthcare provider advice</td>
<td>Muscle strengthening on at least two days a week. Can accumulate in bouts of ≥10-minutes or more</td>
</tr>
<tr>
<td>Department of Health (DoH) and British Association of Sport and Exercise Sciences (BASES, UK)</td>
<td>2010</td>
<td>≥150 mins/week</td>
<td>Alternatively, ≥75 mins of vigorous intensity activity /week or combinations of moderate/ vigorous</td>
<td>Muscle strengthening on at least two days a week. Can accumulate in bouts of ≥10 mins</td>
</tr>
<tr>
<td>Canadian Society for Exercise Physiology (CSEP, Canada)</td>
<td>2011</td>
<td>If previously sedentary 30 mins 4 days/week</td>
<td>Not mentioned</td>
<td>Use modified HR zones Can accumulate in bouts of ≥10-minutes</td>
</tr>
<tr>
<td>American College of Obstetrics and Gynaecologists (ACOG, USA)</td>
<td>2015</td>
<td>≥30 min on 5-7 days/week</td>
<td>If already doing vigorous intensity activity may continue with healthcare provider advice</td>
<td>Does not mention muscle strengthening or accumulating in bouts of mins</td>
</tr>
</tbody>
</table>

Table 2-5 A comparisons of current international physical activity guidelines applicable for pregnant women.
The guidelines are generally based on the premise that most health gains are attained by engaging in at least 150 minutes a week of moderate-intensity physical activity. Further benefits occur with additional physical activity and healthy adults are advised to aim for 300 minutes a week (DHHS, 2008). Where pregnancy is mentioned in generic guidelines they confirm recommendations are appropriate for pregnant women but advise they initially consult a health professional. Of note, when these principles have been adopted into some pregnancy-specific guidelines this minimum desirable duration of exercising has been taken as an upper recommended level.

‘When starting an aerobic exercise programme, previously sedentary women should begin with 15 minutes continuous exercise three times a week, increasing gradually to 30-minute sessions four times a week to daily.’ (RCOG, 2006, pp.5)

In contrast, while also derived from the BASES guidelines, the NICE ‘Weight management before, during and after pregnancy’ guidelines (NICE 2010) translate this to a minimum requirement. These recommend that women are advised that moderate-intensity physical activity will not harm her or her unborn child recommending building up to at least 30 minutes of moderate intensity activity per day. While on first impression the guidelines may appear to be relatively similar and comprehensive they have several limitations. One discrepancy is that not all guidelines have adopted the American College Sports Medicine (ACSM) recommendation of accumulating the minimum daily recommendation in 10 minute bouts of moderate activity (O’Donovan et al. 2010). The variations within the guidelines have resulted in multiple inconsistencies in research findings assessing the prevalence and impact of pregnancy activity levels. This is clearly demonstrated in a recent study that assessed women’s activity levels against 5 commonly used interpretations of pregnancy guidelines (Smith & Campbell, 2013). Activity levels were assessed at 18 and 35 weeks gestation using individually calibrated ‘senseWear’ mini armbands for a 7 day period, 24 hours/day (removed for water submersion activities) corroborated by self recorded activity logs. The graph overleaf [Figure 2-1], demonstrates the dramatic range in the percentage of women who meet physical activity guidelines at

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22 BASES guidelines are summarised in Appendix 1
18 weeks’ gestation depending on which of six different guideline interpretations were used. This clearly highlights the aforementioned inconsistency in research findings.

![Figure 2-1 Comparing impact of different physical activity guidelines](image)

<table>
<thead>
<tr>
<th>Column</th>
<th>Activity measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Moderate-vigorous physical activity accumulated throughout the week</td>
</tr>
<tr>
<td>2</td>
<td>Moderate-vigorous physical activity performed in bouts of at least 10 minutes</td>
</tr>
<tr>
<td>3</td>
<td>Moderate-vigorous physical activity performed in bouts of at least 10 minutes with 1 minute of vigorous physical activity equivalent to 2 minutes of moderate activity</td>
</tr>
<tr>
<td>4</td>
<td>At least 3 sessions of moderate vigorous physical activity sustained for at least 30 minutes</td>
</tr>
<tr>
<td>5</td>
<td>At least 5 sessions of moderate-vigorous physical activity sustained for at least 30 minutes</td>
</tr>
<tr>
<td>6</td>
<td>Total accumulation of weekly Metabolic Equivalent of Task (MET) minutes.</td>
</tr>
</tbody>
</table>

Figure 2-1 Comparing impact of different physical activity guidelines (Smith & Campbell, 2013, pp.4).

The aim of exercise guidelines is to identify the volume and intensity of activity likely to produce a health benefit. Within the range of health outcomes known to be realised by regular exercise, the optimal amount of activity varies according to the specific outcome being studied. For example, to reduce the risk of heart disease a minimum accumulated activity time of 150 minutes/week is required compared to 300 minutes/week for weight loss (Bull et al23, 2010). Pregnancy recommendations to perform 150mins/week have not been determined by research studies on a pregnant population but adopted from non-pregnant recommendations, and assumed safe in a healthy pregnancy. Despite this uncertainty these activity levels are often applied as the basis of antenatal physical activity interventions despite not necessarily being the effective volume to improve pregnancy-specific outcomes. This applies to numerous outcomes e.g. excessive pregnancy weight gain, gestational diabetes mellitus and pre-eclampsia. Consequently, significant inconsistencies are common across research findings regarding the impact of antenatal

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23 These figures refer to general population rather than pregnancy specific.
physical activity on the occurrence of this type of complication (Smith & Campbell, 2013).

Further research is also needed to determine whether evaluating activity as an accumulated total above a specific threshold e.g. 3 episodes of 10 minutes, as opposed to over a sustained period, e.g. 30 minutes, impacts on pregnancy outcomes. The positive effects of exercise have been shown to be progressive and therefore to achieve the potential health benefits, it is important that these minimum recommendations are met both regularly and on a long-term basis (Vamos, 2015). Therefore, supporting healthy women who exercise in pregnancy to continue is a valuable strategy to capitalise on the wide-reaching and long-term benefits of this lifestyle habit.

This still leaves doubt as to the safety of strenuous or vigorous exercise in pregnancy and what upper safe limits for previously active women are, particularly those wishing to engage in vigorous exercise during pregnancy (Kader & Naim-Shuchana, 2014). The paucity of experimental data makes conclusions difficult to draw, further compounded by the lack of agreed standards of what constitutes vigorous exercise and the limited sample population on which to conduct such studies (Currie et al. 2014).

A further contradiction within pregnancy guidelines is the type of activities recommended. Taking cycling as an example, the ACOG24 (2011) described cycling as safe and providing a good aerobic workout. In contrast the RCOG (2006) cautions women about the potential for fetal trauma in the event of a fall if they participate in cycling during pregnancy. This has been interpreted by the National Childbirth Trust (NCT, 2015) and NHS (2015) as a warning against cycling in pregnancy in the UK. In contrast, in other countries such as Denmark, cycling in pregnancy is actively encouraged (Haddad, 2010), which highlights the need to consider cultural differences in respect to exercise when critiquing research studies.

This section has demonstrated how despite a wealth of research and several revisions of clinical guidelines, the criticism directed towards the 1960’s guidelines (Bruser, 1968) persists. This includes suggestions that they are overly conservative, lacking specificity and containing sweeping conclusions not clearly based on existing data (Zavorsky &

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24 The 2015 ACOG guidelines recommend stationary cycling, caution against off-road cycling but leave some ambiguity regarding cycling on roads.
Longo, 2012). The outcome of this is that a degree of uncertainty and conflicting information persists particularly for women wishing to exercise beyond the minimum requirements. Furthermore while the benefits of exercise are widely accepted the specific level and quantity for optimal benefit has yet to be defined.

2.6 Addressing risks of exercise in pregnancy

While exercise is recommended throughout a healthy pregnancy there are important safety issues to consider and specific conditions in pregnancy when it is not advisable. These are clearly described within the ACOG (2015) and the Royal College of Obstetricians and Gynaecologists (RCOG 2006) guidelines. In addition the Canadian Society for Exercise Physiology (CSEP, 2013) PARmed-X for pregnancy offers a well-established tool for health screening prior to engaging in antenatal exercise (Bredin et al. 2013). The version originally designed for a non-pregnant population was recently replaced to bring it in line with the current evidence base. This new pre-participation risk assessment strategy is now available online and has been adapted to include pregnant women (ePARmed-X, 2015). Ultimately designed to enhance the ability of fitness and healthcare professionals to reduce barriers to becoming physically active, these also facilitate the provision of safe and effective advice based on current evidence (Bredin et al. 2013). This tool goes some way towards addressing the question raised previously regarding what evidence is available for professionals to base their advice on. However, similar to other guidelines it is quite conservative in its recommendations, focusing on developing an exercise habit in previously sedentary women and not addressing upper levels for regular exercisers.

The guidelines are based on the premise that current evidence advocates that exercise in pregnancy is safe, and suggests numerous health benefits to both mother and baby (Hassall, 2011). The most current Cochrane systematic review concluded that no studies had established a negative effect of moderate intensity aerobic exercise on pregnancy outcome in a normal healthy pregnancy (Kramer & Donald, 2006). However, they determined that before confident recommendations can be made better trials are required. There is limited research specifically assessing the risk of exercise in pregnancy. A systematic review of research published from 1982 to 2009 concluded ‘that pregnant women without contraindications were at low risk of adverse events during exercise
regardless of exercise patterns and fitness level before pregnancy’ (Bredin et al. 2013, pp.517). This included a meta-analysis of 49,655 hours of exercise in pregnancy to define the risk of adverse events, that were calculated to be 1.4 per 10,000 hours of exercise or 6.8 per 10,000 hours of exercise when minor incidents were included (includes leg cramps and fatigue). Significant limitations of this work are clearly articulated and include the quality and consistency of data reporting in the literature that varies widely making it difficult to obtain the true nature of adverse events. Less than 50% of the investigations reviewed declared either the presence or the absence of an event and the calculations, therefore, included figures for participant drop out that may not have been directly due to exercise induced injury. The study concludes that they have ‘purposely erred on the side of caution’ and overestimated the occurrence of adverse exercise-related events (Bredin et al. 2013, pp.515). They highlight the difficulty in conclusively determining if events are associated with exercise in a cause and effect relationship, or would have occurred irrespective of exercise participation.

A recent survey in North Carolina of antenatal exercise among a cohort of 1,469 pregnant women concluded that the incidence of injury from exercise during pregnancy was relatively low (Vladutiu et al. 2010). Data was collected via telephone administered questionnaires and post-birth interviews in hospital. By distinguishing between types of activities they were able to determine the risk from physical activity (e.g. housework, occupational, or non-exercise walking) as 67% of all injuries compared to 33% arising from exercise. The rates of injuries occurring in pregnancy were 3.2 per 1,000 physical activity hours for physical activity-related and 4.1 per 1,000 exercise hours for exercise-related injury. While incidence rates accounted for number of injuries as a proportion of hours spent engaging in physical activity or exercise during the entire pregnancy the accuracy of this data is limited. The most frequently occurring forms of injuries were falls (67%) and bruises or scrapes (55%). In conclusion they recommended that women continue to engage in exercise in pregnancy, while being mindful of the potential for injury from these activities, particularly falls. Analysis of this study suggests a robust design; particular strengths were the prospective design, moderate cohort size and the capacity to determine all physical activity-related injuries, not just those requiring hospitalization. The key limitation was the potential for inaccuracy and recall bias due to reliance on self-reporting of physical activity and injury.
Miscarriage is another key concern for women; a significant link with exercise was demonstrated using a large subset (96,671) of the Danish National Birth Cohort study (Madsen et al. 2007). The study results demonstrated a relationship between exercise in early pregnancy and increased risk of miscarriage. This draws on a stepwise increasing relation between volume and intensity of exercise and increased risk of miscarriage of 3.7 times\(^{25}\) compared to non-exercisers up to 18 weeks’ gestation. The authors do acknowledge that results should be interpreted cautiously as, part of the association may have arisen from potential bias, arising from retrospective data collection or selective participation. Exercise after 18-22 weeks gestation did not affect miscarriage and, in contrast to other forms of exercise, swimming in early pregnancy was associated with reduced risk\(^{26}\). Similar to other research in this field comparing results with other studies shows conflicting results. Furthermore, this currently demonstrates an association rather than a causal mechanism. The authors suggest that nausea could be a confounding variable; unfortunately information on early nausea was not collected in this study. The potential mechanism for this effect is that nausea is significantly less common in pregnancies that miscarry. Nausea is a commonly cited barrier to exercise resulting in women with nausea (marker for healthy pregnancy) being more likely to quit exercising. In comparison, those with a malfunctioning pregnancy would not suffer from nausea and may be more likely to exercise. Therefore, it could be the absence of nausea, not exercise that is associated with miscarriage (Madsen et al. 2007).

In contrast to this study, Blohm et al. (2008) published results of a prospective cohort study with a cross-sectional and longitudinal design that followed 3 cohorts of women recruited at the age of 19 in 5 yearly intervals commencing in 1981. From the total sample of 1,244 women they ascertained that the overall miscarriage rate was 12% of all diagnosed pregnancies and that this was not increased among those who exercised regularly compared with those who did not. Similar to Madsen’s study, the design, conduct, analysis and reporting are rigorous. Credibility is further enhanced by the

\[^{25}\] Highest risk of miscarriage was associated with high impact exercise (HR = 4.2 (95% CI 3.4–5.2) over 7 hours/week (HR =3.7, 95% CI 2.9–4.7).

\[^{26}\] Swimming for 75–269 minutes/week showed a decreased risk of miscarriage compared with non-exercisers (HR = 0.8 (95% CI 0.7–1.1). However, this does not quantify the intensity of the swimming which can vary widely.
representative samples of women in inception cohorts followed closely over several decades. This enabled a sufficiently long follow-up period and sound outcome assessment, including self-corroborating reported pregnancies with hospital records. A significant limitation was the high attrition for follow ups but this is difficult to overcome in the current culture of highly mobile societies.

In summary there still remains a degree of ambiguity with respect to specifically what the optimal duration and level of exercise is for maintaining or improving health and well-being via physical activity during pregnancy while minimising any potential risks to the pregnancy (Barakat et al. 2014). The growing evidence base continues to support current guidelines to encourage healthy pregnant women to participate in regular moderate exercise. However, owing to the unpredictable nature of pregnancy and the numerous influencing factors on outcomes it is not possible to provide definitive answers regarding risk and benefit probabilities.

2.7 Information sources

Having established what the current evidence base and guidelines regarding exercise in pregnancy are, this section will explore how current understanding resurfaces in the form of sources of information or advice that inform women’s decisions. Several studies have explored where women access information regarding exercise in pregnancy identifying a range of sources. To date, the most robust available research is a prospective longitudinal UK study designed to examine how low-risk pregnancy affected women’s recreational activity patterns and their beliefs and sources of information (Clarke and Gross 2004). This found that the key information source was books and magazines, followed by friends and family, then health and fitness professionals. The study highlighted that women prioritised rest over exercise in pregnancy and that health professionals failed to address erroneous perceptions of risk related to physical exercise in pregnancy that the women predominantly received from family and friends. The prospective survey recruited 57 nulliparous women via antenatal clinics, with one researcher conducting semi-structured interviews at four stages throughout the women’s pregnancies and once...

27 The study resulted in several publications presenting different perspectives of the research which are also drawn on, in this chapter: Gross and Bee, 2004 and Gross and Pattison, 2007
28 Nulliparous is a term used to describe a woman who has not previously given birth.
afterwards. The majority of the information was collected through a predesigned questionnaire with open-ended questions used to clarify information sources. The strength of the study was deemed to be the longitudinal design of the semi-structured interview schedule that enhanced the validity of the responses by enabling the development of a relationship between the researcher and study participants (Clarke and Gross, 2004). The study was well-designed with good attention to detail. However, the authors acknowledge that the findings are interpretive rather than conclusive and recommend further research into the psychological and sociological basis of exercise during pregnancy. To improve the quantity and quality of information regarding physical exercise in pregnancy, the study recommended that interventions focused on both the pregnant woman and her family, friends and exercise provider to ensure inaccurate perceptions are corrected. Similar information sources have been reported from studies outside the UK that looked at women’s beliefs regarding exercise in pregnancy (Canella et al. 2010; Doran & Davies, 2011), which also highlight the internet as a popular resource.

Increased exercise participation has resulted in health and fitness professionals being increasingly asked for advice by women wanting to continue exercising during pregnancy. This presents a unique opportunity for these professionals to help women achieve the benefits of meeting minimum exercise requirements in pregnancy. Advice to pregnant women needs to be carefully considered in light of sociocultural influences to ensure that it address all potential barriers, including the long-standing perpetuation of unfounded beliefs in society of the risks of exercise in pregnancy (Gross & Pattison, 2007).

With respect to changing health behaviour, pregnancy offers a somewhat limited opportunity owing to the restricted period of time (Gross & Pattison, 2007; Inskip et al. 2009). The ability for professionals to influence women's exercise behaviour during pregnancy is compounded by the widely acknowledged lack of time available for health education during antenatal appointments (Stevens, 2003). Nevertheless, early pregnancy has been identified as a teachable moment that can continue into the postpartum period (Anderson, 1994). The concept of a teachable moment draws from social cognitive theory (Bandura, 2000) and commonly occurs during life transitions or health events motivating individuals to be more receptive to adopting risk-reducing health behaviours (Lawson &
Phelan (2010) highlights pregnancy as a particularly influential opportunity for the promotion of healthy diet and exercise behaviours. This is based on several coinciding features: pregnancy instigates significant changes in lifestyle and self-image, raises concerns regarding fetal health and commonly involves frequent contact with healthcare professionals.

To date, the literature suggests that, while healthcare providers’ attitudes about exercise in pregnancy are positive, few are aware of the current ACOG recommendations (Bauer et al; 2010; Clarke & Gross, 2004; Evenson & Pompeii, 2010). This highlights the need for different strategies to disseminate current research to both women and health and fitness professionals.

While studies have highlighted sources of information, the literature on psychosocial variables and how women make sense of the information available to them remains sparse. In order to formulate theory-based interventions to support women to exercise during pregnancy a clearer understanding of women’s experiences and decisions regarding exercise is required. This has the potential to inform the professionals to whom women may turn for advice, and enhance the women’s ability to make well informed decisions regarding their exercise behaviours.

### 2.8 Influences on decisions to exercise

The motivation for many studies in this area has been to identify generalisable mediators for change in physical activity. Predominantly from a public health perspective these aim to inform the development of interventions targeted at physical activity (Evenson, 2011). Therefore, research design has tended toward a quantitative approach, using large cohort studies. These limit women’s responses to pre-developed lists of ‘barriers and enablers’ and thereby run the risk of omitting information concerning salient factors not included on those lists (Cramp and Bray, 2009). This literature contains some studies from the UK (Derbyshire et al. 2008; Gross & Pattison, 2007; Liu et al. 2011; Rankin, 2002; Weallens et al. 2003) but is drawn predominantly from USA (Canella et al. 2010; Clapp & Cram, 2012; Evenson et al. 2009; Hausenblas et al. 2008; van Oppenraaij et al. 2009), Scandinavia (Hegaard et al. 2010; Juhl et al. 2012; Petrov Fieril et al. 2014) and Australia (Doran & Davies, 2011; Duncombe et al. 2009; Lain et al. 2010). While these countries have a similar social and economic profile to the UK, their health care models and cultural
attitudes to exercise vary, thus questioning the degree to which results can be generalised
to specific populations.

The resultant literature suggests the existence of demographic and lifestyle correlates for
exercising amongst the pregnant population, and highlights common positive predictive
factors for exercise. These include low maternal age, high educational status, lifestyle
factors i.e. high income, healthy diet, not smoking, absence of older children at home,
low or normal body mass index (BMI) (Derbyshire et al. 2008; Duncombe et al. 2009;
Liu et al. 2011; Symons Downs & Hausenblas, 2005 ; van Oppenraaij et al. 2009);
however, the study findings do not all concur.

Demographic and lifestyle correlates may prove useful for planning and targeting health
promotion programs. However, the complexities of health behaviours ought not be
underestimated (Aarts et al. 1997). Therefore, prior to developing interventions to
enhance exercise in pregnancy, a better understanding of influences on lifestyle
behaviours with respect to exercise in pregnancy is required.

While these large-scale studies provide some interesting trends, there is a dearth of
qualitative research in this area. For interventions to be successful, women's
individualised lived situations need to be understood in far greater depth. An example of
how taking a different perspective might address this is presented by Hausenblas et al.
(2008). This built on previous research recommendations to use a longitudinal approach
and multilevel analyses within a theoretical framework. The study aimed to identify
longitudinal predictors for exercise by applying the socioecological model to the theory
of planned behaviour. The data set was part of a larger prospective study that used mailed
questionnaires analysed using HLM5 (a hierarchical multilevel modelling statistics
package). The key findings were that attitude, perceived behavioural control and
subjective norm, were not significant predictors of exercise behaviours and much
variability was left unexplained. They concluded that pregnancy is a unique event in
women’s lives, that results in reduced personal control over exercise behaviour due to
rapid physical and psychological changes. This work was part of a larger study from
which they also claimed to have identified key barriers and enablers to exercise (Symons
Downs & Hausenblas, 2005; 2007). However, it is drawn from postal questionnaires and
quantitative data, thereby limiting the extent to which it can validly claim to represent women’s experiences and beliefs.

There are six key qualitative studies in this area that have sought a better understanding of influences on women's exercise behaviours. The study methods are summarised in Table 2-6 below and the findings discussed in subsequent text.

<table>
<thead>
<tr>
<th>Reference, year, country</th>
<th>Study design and objectives</th>
<th>Sample, data collection and analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evenson et al. 2009 USA</td>
<td>Mixed method study that aimed to examine barriers to physical activity using a socio-ecologic framework.</td>
<td>Subset of 1,535 pregnant women from larger cohort study (PIN study) supplemented by 58 focus group participants recruited through antenatal clinics and flyers</td>
</tr>
<tr>
<td>Hegaard et al. 2010 Sweden</td>
<td>Descriptive qualitative study that aimed to elucidate experiences and views of leisure time physical activity during pregnancy in women</td>
<td>Convenience sample of 19 nulliparous women who were physically active prior to pregnancy (Subset of large cohort study) Semi-structured interviews analysed using content analysis</td>
</tr>
<tr>
<td>Cioffi et al. 2010 Australia</td>
<td>Descriptive qualitative study that aimed to describe women's perceptions and participation in physical activity and the factors influencing their decision-making</td>
<td>Purposive sample of 19 women from public health hospitals Small group and one-to-one interviews</td>
</tr>
<tr>
<td>Leiferman et al. 2011 USA</td>
<td>Descriptive qualitative study using a multilevel socio-ecological framework to better understand barriers and facilitators related to antenatal physical activity.</td>
<td>25 pregnant women who were Medicaid recipients, recruited from health care centres. Semi-structured interviews coded with Atlas/Ti software</td>
</tr>
<tr>
<td>Petrov Fieril et al. 2014 Sweden</td>
<td>Descriptive qualitative study which aimed to describe experiences of exercise during pregnancy among women who performed regular resistance training.</td>
<td>17 pregnant women who did regular resistance exercise (12) recruited from part of RCT (5) flyers in antenatal clinic. Semi structured interviews coded using inductive thematic content analysis</td>
</tr>
</tbody>
</table>

Table 2-6 Summary of qualitative studies on influences on women's exercise behaviours

Data from the PIN (Pregnancy Infection and Nutrition study, whose primary goal was used to identify etiologic factors for pre-term delivery) was used to conduct a cohort study, supplemented by a qualitative study using 13 focus groups (Evenson et al. 2009). Women were allocated to specific focus groups based on their race/ethnicity and body mass index. Drawing on a socio-ecological framework the study identified several barriers to exercise that are summarised in Table 2-7 overleaf. The strength of the study
was that the focus groups enabled potential strategies for dealing with some of the barriers to be identified and the feasibility of these from the women's perspective discussed. The study also engaged with a wide demographic of women; however, the authors acknowledge that these can not necessarily be generalised.

### Examples of Barriers

<table>
<thead>
<tr>
<th>Socioecological levels</th>
<th>Examples of Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal — health related</td>
<td>Tiredness, lack of sleep, shortness of breath, musculoskeletal problems. Activity causes discomfort, contractions or pain, concern with pregnancy complications, injury.</td>
</tr>
<tr>
<td>Intrapersonal — not health related</td>
<td>Low motivation, not enough time, work or social conflicts, does not enjoy being physically active, lack of child care, costs, lack of knowledge about activity.</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Lack of social support, overly protective family members, conflicting advice from others, others don't encourage activity isolation from other people, lack of transport, no one to exercise with.</td>
</tr>
<tr>
<td>Neighbourhood or environmental</td>
<td>Weather too hot or cold, season of the year, lack of outdoor spaces to be active, lack of recreational facilities.</td>
</tr>
</tbody>
</table>

**Table 2-7 Barriers to exercising in pregnancy (Adapted from Evenson et al. 2009, pp. 368).**

The limitation of the study was that it focused on barriers and did not explore enablers or motivators to exercise, neither did the study design enable cross comparisons owing to the sample size and differences in participants.

To address the focus on barriers inherent in other studies, Leiferman et al. (2011) used a descriptive qualitative approach to explore exercise barriers and facilitators in pregnant women of low socioeconomic status. This also drew on the socioecological model and aimed to identify how barriers and facilitators differed across the different levels (intrapersonal, interpersonal and environmental). Their findings reflected similar barriers to those in Table 2-7 and in addition highlighted embarrassment about appearance, feeling restricted by pregnancy generally, misperceptions regarding safety particularly amongst non-exercisers, lack of role modelling and a lack of informational support from health care providers. They drew on these findings to suggest that women of lower socioeconomic status would benefit from antenatal physical activity, education and skill building. Furthermore, they highlighted a range of facilitators to exercise as detailed in Table 2-8 overleaf.
### Table 2-8 Facilitators to exercising in pregnancy (Leiferman et al. 2011).

<table>
<thead>
<tr>
<th>Socioecological levels</th>
<th>Examples of Facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td></td>
</tr>
<tr>
<td>- health related</td>
<td>Controlling maternal weight gain, perceived easier labour and birth, increased energy, sense of well-being for mum and also baby</td>
</tr>
<tr>
<td>- not health related</td>
<td>Intrinsic motivation (exercisers only), to reduce depressive symptomatology and negative effect personal enjoyment, part of their routine, part of who they were.</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Emotional support from friends and family, including children for second time mums, role models</td>
</tr>
<tr>
<td>Neighbourhood or environmental</td>
<td>Transportation, weather, and access to parks/trails, cost of leisure facilities</td>
</tr>
</tbody>
</table>

Through comparison of different characteristics amongst the women, they determined that concerns regarding weight gain were particularly common for women who had struggled to lose weight from previous pregnancies. The main difference between women who exercised and those that didn't was that exercisers expressed an intrinsic motivation to exercise and more commonly cited positive physical activity beliefs. Subsequently, these women were better able to overcome the barriers cited. Drawing from the findings they suggested that strategies to encourage exercise should include providing fun and enjoyable activities that can be incorporated into women's daily lives; encouraging the development of new social networks and social support and providing information to dispel myths regarding exercise in pregnancy. Key to this was the health professionals’ role in promoting antenatal exercise that could be enhanced by increasing their awareness of national physical activity guidelines (Leiferman et al. 2011).

Hegaard et al. (2010) explored the exercise experiences of nulliparous women who were physically active before pregnancy using an inductive qualitative study. Drawing on a convenience sample they interviewed 19 women, 3–4 years following the birth of their 1st baby, using a thematic interview schedule and open-ended questions. In contrast to some of the other studies, most of the women continued their physically active lifestyle throughout the pregnancy. The main reason for this was that they considered it a habit and expressed a strong desire to continue this, albeit modified to some extent. The women overcame the barriers that pregnancy presented through drawing on previous experience or role models, mirroring other pregnant women and seeking health professionals’ advice. The key limitation of this study was that the women were drawn from active participants.
in another unrelated study, ‘Danish dystocia\textsuperscript{29} study’, and the time lapse of 3-4 years between pregnancy and interview that could introduce a risk of recall bias.

An Australian study that used a qualitative descriptive approach to women’s perceptions and participation in exercise in pregnancy supported these findings and developed further insight (Cioffi et al. 2010). The study conducted semi-structured interviews with 19 participants recruited via posters and flyers. Four main categories were identified: ‘meaning of physical activity; perceived benefits of physical activity; barriers to and motivators for being physically active; and the process of engagement in physical activity’ (Cioffi et al. 2010, pp.460). Women were able to identify a range of ways physical activity might be included in their daily lives, as well as through leisure activity together with a range of potential benefits. Engaging in physical activity was complex and influenced by various factors. Key motivators were the opportunity to socialise with other pregnant women, encouragement from family or health professionals, weight management and reducing minor disorders of pregnancy. Concern about the baby's well-being was also identified as a strong motivating factor to exercise. Overarching the identified four main categories was the process of engaging in physical activity that is described in three phases: uncertainty, engagement, and compromise. This offers an alternative perspective on how women perceive and engage in exercise in pregnancy and suggests that women need support to expose myths and endorse the benefits arising from exercise in pregnancy. This is a common theme in the literature highlighting the importance of health professionals to disseminate information to all women and dispel common misconceptions regarding the safety of exercise in pregnancy (Cannella et al. 2010; Evenson and Bradley, 2010; Gross & Pattison, 2007; Weallens, 2003).

A study of pregnant women who regularly participated in resistance training (Petrov Fieril et al. 2014) identified a number of similar barriers and facilitators as the previously described studies. In addition, this further extends current understanding by exploring how women overcame barriers such as modifying activities and intensity of training, changing exercise goals from fitness to health and by being ‘extra attentive’. This latter strategy drew on these women’s confidence to be guided by their body, gained through pre-pregnancy experiences of exercise. Another significant barrier was that exercisers

\textsuperscript{29} Dystocia a term used to describe an abnormal or difficult childbirth or labour.
often felt excluded from their usual activities because of social criticism compounded by other people’s lack of understanding. A motivating factor to exercise was that this was an important part of the women’s pre-pregnancy lifestyle with some stating that physical inactivity made them feel restless and uncomfortable. Furthermore, exercise gave women a sense of control over the changes occurring in their body. The overall conclusion was that understanding strategies for overcoming exercise barriers could be useful in exercise promotion in healthy pregnancy.

A further insight afforded by these studies is how the factors that influence decisions vary depending on stage of pregnancy, with tiredness, nausea and fear of miscarriage being common barriers in early pregnancy (Evenson et al. 2009; Hegaard et al. 2010). Mid-pregnancy is often accompanied by a period of increased exercise and perceived wellbeing followed by a reduction in exercise as women compensated for their changing shape and expanding abdomen (Abbasi & van den Akker, 2015)

While a variety of factors has been explored in these studies a more comprehensive and integrative model could help illuminate the relationship between the varying factors that influence women’s decisions regarding exercise in pregnancy. In light of the intention to take a grounded theory approach in this study a deeper exploration for potential theoretical explanations was not undertaken until later in the analysis process. The intention of the study was to ground the theory in the data generated with the women and later explore how this might apply to existing theory.

Therefore, the themes within this literature review have been updated in light of new evidence arising over the course of the study, but new themes and related literature arising from the data analysis and emerging substantive theory are presented in chapters 5 and 6.

2.9 Choice and decision-making in pregnancy

During pregnancy the decisions women make are entangled within an intricate web of relationships: with her fetus, her partner, health professionals, family, friends, society and the media, and potentially many more (Thachuk, 2007). Compounding this is that the transition to motherhood is surrounded by pervasive ideologies both biologically determined and socially constructed (Longhurst, 2008; Miller, 1998). This highlights the interplay between medicine and culture within which women’s decisions are influenced
by power differentials that prioritise certain ‘ways of knowing’ over others (Davis-Floyd, 2003).

All this adds to the challenge of understanding how women develop and construct meanings during this period. During this time, women are confronted with an array of medically and professionally defined knowledge interwoven with lay knowledge and advice. Studies suggest that advice from friends and family is commonly based on inaccurate perceptions of the effect of exercise with a consensus that exercise levels in pregnancy should be limited; furthermore, health education is failing to correct these misconceptions regarding risk (Cannella, 2010; Clarke and Gross, 2004; Weallens et al. 2003). What is also lacking in the current evidence base is an understanding of how women make sense of this information when making decisions regarding exercise in pregnancy.

The dynamics of the relationship between health providers and women have undergone a significant shift from paternalism towards collaboration over the last two decades particularly with respect to choice and autonomy in pregnancy and childbirth (Romano, 2010). This has been influenced by a multitude of factors including sociological movements such as feminism, consumerism and individualism; an increased emphasis on ethical constructs of autonomy, beneficence and the legal imperative of informed consent within health care (Pierce & Hicks, 2001). Concurrently, this shift has been consistently endorsed in government policy and is clearly evident in policy documents such as Changing Childbirth (DoH, 1993) through to Maternity Matters (DoH, 2007) and the current Maternity Review (NHS England, 2015). Another factor that has driven this change is the rapidly expanding availability of information to the public particularly through the internet. Empowering women with information can challenge traditional professional-woman power structures. However, fitness professionals midwives and doctors still retain their expertise to discern the quality of the information and its appropriate application to practice.

The change in dynamics recognises the importance to women of being empowered to make choices and maintain a sense of control throughout their pregnancy and childbirth experience and the long-term impact this can have on their well-being. In reality this has been described as a paradox in which women are simultaneously assigned active and
passive roles (Jomeen, 2012) with the construct of choice in childbearing commonly described as mere rhetoric (Edwards, 2000; Kirkham, 2000). Furthermore, not all women relish this opportunity, seeing choice not simply to be about desire but also to some extent a gamble, whereby alongside choice they take on the burden of responsibility (Snowden et al. 2011). The challenging processes involved in making informed choices during pregnancy are highlighted by the analogies to walking a tightrope (Levy, 1999), or a double edged sword (Shelton & Johnson, 2006) further compounded by the uncertainty of pregnancy.

While, quite dated, and mainly focused on antenatal care, Levy’s grounded theory study (1999) offers an interesting insight into the complexities involved in making decisions in pregnancy. This explored how women make informed choices regarding their antenatal care. The core category ‘Maintaining Equilibrium,’ described how women sought and conceptualised information in a way that protected and kept in balance their own and their families’ interests. The study recognised that this process took place during a period in life involving considerable change and highlighted the importance of women having information that they trusted and which was sufficiently specific to their individual circumstances.

The shift towards women-centred care has resulted in the recognition that decision-making is an important area to understand. However, decisions are compounded by the fact that pregnancy and birth are universal fundamental human activities, evoking eager anticipation but fraught with uncertainty and bound within a complex sociocultural framework (Field & Marck, 1994; Longhurst, 2008; Matthias, 2009). A number of the decisions childbearing women make are conscious choices that often comprise a decision between two options such as home or hospital birth, bottle or breast feeding or whether or not to have a screening test. Within this context, exercise in pregnancy is an area within which women may receive information and take decisions about their actions. However, rather than an ‘either/or’ choice, this decision is difficult to delineate, conceivably requiring revisiting throughout pregnancy. This raises a number of questions as to why some women exercise during pregnancy while others do not and how they come to these decisions. Enhancing this insight could enable women to be more effectively supported to make informed choices about their decisions to exercise.
2.10 Summary and clarification of the research questions

This chapter has situated the study in the context of the current body of knowledge pertaining to exercise in pregnancy. While a range of research studies have established the potential health benefits of exercise in pregnancy, current understanding of the factors that influence women’s decisions regarding exercise is limited. In summary the literature presented has established that:

- Despite clear benefits the uptake and maintenance of exercise in pregnancy is low and activity levels decline progressively throughout the childbearing period.
- Exercise guidelines offer comprehensive advice for sedentary women who commence exercise in pregnancy but fail to clearly address the needs of pregnant women who wish to participate in more frequent or vigorous exercise.
- There is currently a substantial gap in the literature regarding how women access and make sense of the information regarding exercise in pregnancy.
- There is a need for in-depth understanding of women’s experiences and reasoning in regard to exercise in pregnancy.

In light of the evidence presented from the literature and the gaps identified within the current knowledge base this study aims to generate a theoretical model demonstrating women’s decision-making processes in relation to exercise in pregnancy. In the process of meeting this aim the study will be guided by the following research questions:

- What contextual factors influence women’s decisions related to exercise behaviours in pregnancy?
- How does pregnancy influence women’s decisions and behaviour regarding exercise?
- How do women process the influences and multiple alternatives they encounter to choose a course of action regarding exercise in pregnancy?

Drawing on methodological issues and research designs informed by this review, a qualitative design using a constructivist grounded theory approach with in-depth interviews as the main method of data collection was adopted. This was identified to be appropriate to answer the research question, because

- Socially constructed ideologies surrounding pregnancy are complex and poorly understood warranting exploration in the real-world context.
• It will enable a deeper understanding of the complex factors surrounding the social process of decision-making.

It is anticipated that developing an understanding of the experiences and decision-making process of women who exercise regularly in pregnancy could inform health professionals and fitness specialists who advise women about their lifestyle choices. Therefore, this study sampled women who exercised regularly to generate ‘information rich’ data and illuminate the factors that enable and disable those decisions. A longitudinal design with sequential interviews was adopted to facilitate the co-construction of knowledge with the women. This aimed to generate a deeper understanding of how these related factors interact and influence each other, and how women make sense of them.

The next chapter will present an in-depth description of constructivist grounded theory and justify its adoption as the most appropriate approach to address the purpose of this study.
Chapter 3: The methodological framework

3.1 Introduction

This study sought to generate a theoretical model demonstrating women’s decision-making processes in relation to exercising in pregnancy. In light of the evidence presented in chapter 2, and the gaps highlighted within the current knowledge base, constructivist grounded theory was identified as the most appropriate methodological approach to address this aim. The principal rationale for this being that it enabled the factors influencing the decision making process to be conceptualised while recognising the importance of the social context within which these took place. Grounded theory comprises a set of guiding principles that enable a systematic, inductive approach through which data are collected, analysed and conceptualised for the purpose of constructing theory (Charmaz, 2014; Urquart, 2013). This is a well-established approach to develop theoretical models grounded in empirical data where a relevant theory does not already exist (Hutchinson et al. 2011). An inductive approach was essential as there is a dearth of research and theory to explain women’s decisions regarding exercising in pregnancy. Furthermore, being a social process, decision-making lends itself well to grounded theory as demonstrated by a number of studies that have successfully adopted this approach (Burge & Jamieson, 2009; Holmberg & Wahlberg, 2000).

To situate the methodological decisions, an overview of grounded theory and the key debates surrounding it are presented. This is followed by an in-depth discussion of the principles of constructivist grounded theory and the strategies applied to enhance methodological and interpretive rigor.

3.2 Grounded theory

Grounded theory has been described as one of the most prominently used qualitative research methodologies (Timmermans & Tavory, 2007), particularly within healthcare, because the approach starts with the individual level and builds a theory for practice (Benoliel, 1996). Alongside this popularity it has a complex intellectual history (Urquart, 2013) and has been described as being a contested theory both ‘within and without the
GTM\textsuperscript{30} community (Bryant & Charmaz, 2007, pp. 50). Since its conception it has evolved substantially and the resulting diversity in methods and further elaborations on the original works of Glaser and Strauss has led to the suggestion that grounded theory should be considered a ‘family of methods’ (Bryant & Charmaz, 2007) bearing mutual resemblances rather than a discrete collection of methods that share clear and precise elements. It is, therefore, critical to contemplate the historical context and philosophical perspective in which grounded theory is being discussed when trying to make sense of the literature pertaining to this research approach. The remainder of this section will give an overview of this development and a rationale for why a constructivist grounded theory approach has been adopted for this study.

The grounded theory approach was first ‘discovered’ by two social scientists Barney Glaser and Anselm Strauss. Their book ‘The Discovery of Grounded Theory’ (Glaser & Strauss, 1967) was considered revolutionary, resonating with social scientists, because it offered a credible alternative to the dominant, positivist deductive methods of that time. It has been suggested that the innovation could be partially interpreted as a reaction to ‘armchair functionalist’ theories in sociology (Urquhart, 2013), and the long-term desire for a distinctive methodology for the study of human behaviour (Kendall, 1999). The strength of grounded theory is that it enables the systematic generation of new theories of human behaviour from empirical data as opposed to testing existing theory (Birks & Mills, 2015). Described as a ‘methodological innovation’ it also made explicit, and thus systematic, techniques that other researchers of that era had been using but not published (Agar, 2010, pp. 1).

Reviewing the academic backgrounds of Glaser and Strauss highlights how their collaboration involved the converging of competing traditions in sociological research. Glaser's comprised a rigorous positivist training in quantitative methods from Columbia University, while Strauss’s was rooted in symbolic interaction from his studies at the Chicago school with its emphasis on a pragmatist philosophy (Charmaz, 2014). Subsequently, it became apparent through their students that Glaser and Strauss were operating two different approaches (Stern, 1994). It is likely that this was the case from its inception, particularly as Glaser wrote the majority of ‘The Discovery of Grounded

\textsuperscript{30}GTM (grounded theory method)
Theory’ independently, leaving Strauss to contribute three discrete chapters (Glaser, 1998).

The methodology of grounded theory has progressively evolved; the initial divide between its originators resulting in the traditional Glaserian or Classic grounded theory and the evolved Straussian versions. The latter, developed by Strauss's work with Juliet Corbin, was more explicitly underpinned by pragmatism and symbolic interactionism. Subsequently, a number of scholars, (Bryant, 2002; Charmaz, 2005; Clarke, 2005) often described as second-generation grounded theorists, have reinterpreted Glaser and Strauss’s original work using it as a launching pad for their particular iterations (Birks & Mills, 2015). This evolution is illustrated by what Morse (2009) described as a genealogy of development [Figure 3-1 below].

This ongoing evolution of grounded theory has been described as a methodological spiral that arose from Glaser and Strauss’ original work and continues today (Mills et al. 2006). Second generation grounded theorists have adopted a variety of epistemological positions located at various points on this spiral reflecting their underling ontologies.

Figure 3-1 A genealogy of grounded theory (modified from Morse, 2009, pp. 17)

Women's decisions regarding exercise in pregnancy are complex and influenced by their unique circumstances which the methodological decisions guiding this project needed to address. Having scrutinised the five main approaches to grounded theory as identified in
Figure 3-1, constructivist grounded theory was identified as the approach that best addressed the research question. The study has therefore, been guided by a constructivist approach to grounded theory that offers a journey that traverses basic grounded theory steps within an interpretive approach (Charmaz, 2014). Charmaz describes constructivist grounded theory as a ‘method that begins with inductive enquiry, adopts a comparative logic, invokes abductive reasoning and emphasises interaction’ (Charmaz, 2008a, pp. 132). This is strongly influenced by the methodological guidelines articulated by Glaser (Glaser & Strauss, 1967), but rather than adopt the logic of enquiry in classic grounded theory it adopts the logic of pragmatism and extends this by adopting 21st century methodological assumptions (Charmaz, 2008a). These recognise that researchers are not separate from their theories but construct them through their interactions with people, places, and research perspectives.

The classic approach to grounded theory tends to view research participants as a source of data to be objectively collected relying on field notes as data. In contrast Charmaz (2009) proposes that ‘Grounded theory in its constructivist version is a profoundly interactive process’ (pp. 137). This suggests a more subjective relativist stance whereby theoretical analyses resulting from a grounded theory process ‘are interpretive renderings of a reality, not objective reportings of it’ (Charmaz, 2008b, pp. 206). Through reflexive processes new theory emerges, co-constructed with the research participants. In recognising the value of this interaction Charmaz reasons for the use of interview recordings and transcripts to enable the nuances of language and meanings to be fully realised.

Such an approach puts far greater emphasis on the participants’ views and voices both within the analysis and the presentation of the findings. Unlike the traditional grounded theorists, a constructivist stance assumes that theories are not discovered; instead they are co-constructed through the interaction between the researcher and research participant (Charmaz, 2014). Thereby as opposed to developing ‘parsimonious explanations, and generalisations devoid of context, constructionists [sic] aim for an interpretive

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31 As highlighted on pp. 47 although not explicit at the time of publication Glaser wrote the methodology chapters in this text

32 How co-construction of data with the women was fostered in this study is described in more detail in section 4.4
understanding of the studied phenomenon that accounts for context’ (Charmaz, 2008b, pp. 402). This offers a framework through which the strengths of grounded theory methodology can be exploited without having to adopt a dichotomous approach of adhering to either a traditional Glaserian or an evolved Straussian version of grounded theory.

The interpretation and implementation of the grounded theory approach used in this study was guided by the following characteristics [Table 3-1]. These are adapted from Wiener (2007), and encompass the key elements of a constructivist approach.

<table>
<thead>
<tr>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generated theory from rich data rather than preconceived hypotheses.</td>
</tr>
<tr>
<td>Data gathering, analysis and theory construction commenced with first interview and proceeded concurrently, enabling the advancement of theory development during each step.</td>
</tr>
<tr>
<td>Detailed memo writing was a fundamental part of data generation and analysis.</td>
</tr>
<tr>
<td>Constant comparison of the data to theoretical categories was an integral part of analysis.</td>
</tr>
<tr>
<td>Theoretical sampling was used to explore patterns and variations in the emerging data.</td>
</tr>
<tr>
<td>Theoretical sufficiency guided completion of data generation.</td>
</tr>
<tr>
<td>A literature review was conducted for orientation to the subject area.</td>
</tr>
</tbody>
</table>

Table 3-1 The defining characteristics of grounded theory that guided this study.

In addition to these core characteristics are some fundamental methodological procedures: coding of data, developing theoretical sensitivity, inductive deductive cycles of analysis followed by abductive reasoning and theoretical integration. How these were made operational in this study, to be congruent with a constructivist approach is discussed in Chapter 4.

Charmaz suggests that grounded theory ‘offers a set of flexible strategies, not rigid prescriptions’ (2010, pp. 185). The way in which this has been interpreted in this study is that the core characteristics and procedures described above have been employed alongside a fluid approach to the research process led by the emerging theory. Figure 3-2 demonstrates how the procedures fit together and captures the iterative and fluid nature of the research process.
While the flexible nature of grounded theory is integral to its success it is apparent from the literature that the resulting ambiguity assigned to the term ‘grounded theory’ leaves researchers who claim to use this method open to criticism. Alongside assertions that it is one of the most prominently used qualitative research methodologies, are concerns that, in many studies, only elements of the approach have been employed (Cutcliffe, 2000). The risk of such omissions is failure to reach a conceptual level that will enable the generation of a substantive theory and instead deriving ‘descriptive analysis’ that should be labelled ‘qualitative data analysis’ rather than ‘grounded theory’ (Glaser, 2011). This has been addressed by clearly defining the fundamental grounded theory characteristics adopted for this study, maintaining a reflexive stance throughout and demonstrating a clear audit trail of the research process through contemporaneous memo recording.

Traditional grounded theory suggests ‘there is a need not to review any of the literature in the substantive area under study’ (Glaser, 1992, pp. 31) for fear of contaminating, or constraining, the researcher’s analysis of codes emergent from the data (Glaser, 1992). Mindful of the debate this has generated regarding the appropriate timing of the literature review in grounded theory (McGhee et al. 2007), a preliminary literature review was
undertaken to position the study within current thinking and locate the originality of the research question. Strauss and Corbin (1998) address this dichotomy by recognising both the advantages and disadvantages of an initial literature review. They suggest ‘Familiarity with relevant literature can enhance sensitivity to subtle nuances in data, just as it can block creativity’ (Strauss & Corbin, 1998, pp. 49).

Ultimately, in this study generated theory determined theoretical comparison with relevant literature once the substantive theory had emerged. Engaging with the existing literature has been an integral and on-going part of the iterative research process providing a 3rd point of constant comparison. This has facilitated the development of a ‘theoretical story’ from the data that has enabled all the key elements to be systematically integrated to produce the substantive theory.

As a novice to grounded theory there has been an intrinsic element of emergence. This holds true for both my understanding of the epistemology and methodology and in the development of my theoretical sensitivity in relation to the research topic. Specifically how challenges were addressed has been integrated throughout this document.

In summary, grounded theory has enabled flexibility to the research process, permitting the freedom to follow through developing lines of enquiry and the inductive approach required to do justice to the research question. Concurrently it has provided a rigorous framework through which the credibility and authenticity of the findings could be demonstrated and evaluated.

3.3 Epistemology and theoretical perspective

Reflecting on my long-term personal, educational and professional experiences has highlighted that my epistemology has undergone a significant shift from the dominant paradigm of positivism, embedded in the medical model of care, to a far more relativist/constructivist perspective, more in keeping with a social model of midwifery (Wagner, 1994; Walsh & Newburn, 2002), rather than a technocratic one (Davis- Floyd, 2003). This view recognises the uniqueness of individuals who may construct multiple meanings about identical phenomenon and resonates with my professional philosophy. Central to my current role as a midwifery lecturer, I strive to empower individuals by offering an individualised approach, thereby fostering student-centred learning as an
educator and woman-centred care as a midwife. It does, however, highlight the potential for my positivist roots to unconsciously surface which was addressed by maintaining a reflexive stance throughout (Appendix 14).

Interwoven within this is a deep interest in issues of gender and power and how they influence women’s childbearing experiences. While the research has not taken a particular feminist standpoint it has drawn on the principles of this philosophy and it is, therefore critical to consider how these fit within the proposed study. Close scrutiny of the roots of grounded theory and feminist inquiry suggest that an epistemological affinity exists with several points of theoretical congruence. Both approaches value the centrality of human experience in knowledge creation, recognise that social processes are key to knowledge generation, define meaning through the analysis of language and acknowledge the importance of reflexivity (Plummer & Young, 2010). The research has, therefore, drawn on feminist principles to guide the use of grounded theory by surfacing issues of gender and power. In the process of data analysis these concepts were auditioned to see if they had any foundation in the women’s decision to exercise.

Throughout this study I have drawn on my professional and personal experience and knowledge, using it as a conceptual lever with which to scrutinise the data while at the same time not foreclosing on other perspectives or the generation of rich data from the women (Charmaz, 2009). This is an accepted position within grounded theory, and notably one of its strengths, whereby these perspectives can provide the ‘foundations for making comparisons and discovering properties and dimensions’ (Strauss & Corbin, 1998, pp. 5). To enable me to acknowledge and use these experiences constructively, I constantly engaged with active reflexivity, frequently described as an essential component of effective research methodology (Hall & Callery, 2001). This is an integral element of a constructivist approach, whereby knowledge is socially produced through the interaction of the multiple perspectives of the researcher and research participants (Charmaz, 2014).

3.3.1 Managing the reflexive self
Integral to the methodology of a constructivist approach is the requirement to consider how the assumptions and views of the researcher both prior to and during the study influence the research process and products (Charmaz, 2013). Adopting this reflexive
stance involved maintaining a self-conscious awareness of my subjectivities in relation to the women and the research topic. These were recorded concurrently throughout the project in a reflexive journal that aimed to demonstrate a trustworthy approach and enable the reader to judge the authenticity of the findings. This is embedded throughout the document and includes background information about my personal and professional experience [1.1, 3.3] and highlights the use of reflexivity through memoing [4.1.3] in the form of an audit trail. Adopting this approach acknowledges that my position as researcher is not a neutral one, but has instead exploited my professional and personal experiences and knowledge. Rather than suspend subjectivity, I used my personal interpretive framework to act as a lens through which to challenge the data (Levy, 2003). This contributed to developing a better understanding of the phenomena by more accurately portraying the meaning made by the women, thereby making it an enabling rather than a blinding bias (Bernstein, 1983). However, this did not foreclose on the possibility of drawing on other perspectives with which to interrogate the data [4.5.5]. This is an accepted position evolving from Straussarian grounded theory and notably one of its strengths, whereby these perspectives can provide the foundations for making comparisons and discovering properties and dimensions (Strauss & Corbin, 1998, pp. 5).

The literature highlighted the importance of not overlooking how the dynamic process of interaction between myself and the women might impact on the generation and interpretation of the data. This was particularly poignant when I reflected on my 1st interview with Jane, whose views and experiences of sport were diametrically opposite to mine.

“I’ve always hated most forms of activity/sport, don’t like watching it …. not interested in football, hated netball, hated running around, always rubbish at throwing and catching. Not good at it, not interested in it, hated P.E teachers, generally I think P.E teachers are bullies and evil people (Jane. interview 1)

How did this impact on my multiple selves as researcher, midwife, mother (of a young PE teacher), enthusiastic exerciser and my relationship with Jane? Did I value her contribution as much as the women I could identify with more? I identified Jane as an ‘outlier’ and realised that her data offered great opportunity for constant comparative method. I made a conscious effort in future interviews to empathise more with her and try to develop a sense of being in her world as recommended by Cutcliffe (2003)

6/1/14 memo revisited

Auditing the frequency of quotes used in Chapter 3 by women highlighted that I have used Gladys and Jane’s quotes less than others and I previously identified that they had a different view on exercise to the other women I need to revisit their interviews and see if I have really empathised with their perspectives or subconsciously dismissed important data

Box 3-1 Reflective memo: Exploration of how I influenced data generation.
Maintaining reflexive records has provided an audit trail of my methodological decisions throughout, as exemplified in the previous memo [Box3-1].

Through reflexivity it was only possible to make explicit values and beliefs that I was conscious of at the time. Therefore, because my understanding of self and the research process constantly evolved, the development of self-awareness has been an iterative process. Concurrently, I have been cognisant of potential pitfalls of over inflating this process, that included the possibility of it stifling creativity (Glaser, 2001), or suggesting unattainable levels of self-awareness and rigour (Finlay, 2002). This has involved embracing a degree of uncertainty and following intuition in a similar way to acting on intuitive clinical knowledge (Benner, 1984). This enabled a balance between trusting intuition while simultaneously maintaining a sceptical view and enhanced awareness of the limitations of the approach adopted to accept the contingent, partial, tentative and emergent qualities of the findings presented. Adhering to the rigorous data, analytical procedures embedded within the grounded theory method tempered these concerns. The fundamental requirement to ensure the analysis and emerging abstract concepts are grounded in the data ensures analytical misfiring would be exposed. In this way hypotheses arising through deductive reasoning were discarded if there was inadequate evidence within the data to substantiate them.

3.3.2 Pragmatism and symbolic interactionism
The overarching epistemology informing this study is pragmatism which is integral to a constructivist approach to grounded theory. Its fluidity, creativity and ‘open-endedness’ evident in Strauss’s later work, offer great potential for developing grounded theories (Charmaz, 2008a). Founders of pragmatism include James, Dewey, Pearce and Mead and, like grounded theory, its inception challenged common traditions of its time. Originating in the United States in the 1870s, it was in contrast to the prevailing European philosophies of the late, 20th century, seeking to identify practical workable solutions to problems within a specific context. This philosophy of action advocates that the value of theories rests on their practical application and views reality as fluid and open to multiple interpretations (Charmaz, 2014). Individuals derive their perception of reality through reflecting on their experience of discovering conditions and consequences of situations and actions. Pragmatists, therefore, see knowledge as a human construction of something that exists, and ‘truth’ determined by whether that knowledge is matched by experience.
when tested in action (Bieta, 2010). This study acknowledges that, while there may be an objective truth it is not something we can ever actually know. Instead we can only enquire what it might mean to individual women at any given time, particularly in relation to the context that surrounds their experience. Chapter 6 presents an in-depth analysis of how the literature resonates with the research findings to demonstrate the extent to which they might have meaning to other women in comparable situations (Chiovitti & Piran, 2003) and beyond the substantive area.

This study is guided by a symbolic interactionist perspective that views human action as constructing self, situation and society (Charmaz, 2014). This perspective enables a dynamic understanding of actions and events whereby language and symbols play a critical role. This provides a perspective for conceptualising social experience in terms of symbolic meanings communicated through social interaction. Considered to originate from pragmatism, the basis of symbolic interactionism is that humans act toward others or things based on how they assign meaning to them. Individuals develop their own subjective meanings through interactions with objects or things and these meanings are complex, varied and multiple (Aldiabat & Leavenec, 2011). Meaning is assigned in the form of labels or symbols, based on social interactions and consequently people act in ways that derive from how they understand themselves symbolically.

Symbolic interactionism proposes that in addition to interacting with others, people concurrently have an inner dialogue whereby they contemplate the symbols they are using, acting symbolically rather than merely instinctively. This enables them to experience empathy and envisage how other people see them. The self played a central role in Mead’s theory of symbolic interactionism, breaking identity down into ‘Me’ and ‘I’, where ‘I’ is the spontaneous instinctual self, and ‘Me’ is more deliberative and socially aware (May, 2001). Individuals are not born with ‘Me’ but develop it through social interaction, acting in ways influenced by social awareness of the symbolic consequences of communication. Social interaction might, therefore, be seen as a social drama in that self-identity is not fixed but constantly negotiated (Shilling, 1993). It has been suggested that behaviour is constructed through a complex process of perceiving, interpreting, selecting and dismissing potential options (Manis & Meltzer, 1972). If this is the case then it is clear that women’s behaviour will be influenced by their interpretation of meanings and the predictability of interactions. Therefore, any attempts to understand
social processes such as decision-making need to consider both overt and covert behaviour and explore the meaning women assign to symbols. Alongside this, the interplay between the context and conditions that impact on these consequences needs to be analysed.

Using this as a theoretical framework for this project enabled the development of a deeper understanding of how different factors influence women’s decisions regarding exercising in pregnancy. It depends on the women’s views of their situations and rests on the assumption that meaning is not automatically present but continually constructed and created by each of them. The research study was designed to further illuminate these meanings through the process of data co-construction during interview interactions between the researcher and each woman. Mindful that women’s experiences are both context and time-bound and in recognition of the dynamic nature of pregnancy, a longitudinal approach was adopted that enabled the data generation to capture women’s experiences as they unfolded.

To gain an insight into the influences on their decision-making it was essential to give the women opportunity to articulate their underpinning thoughts, experiences and feelings. In-depth individual interviews were chosen as the main method of data generation that enabled the concept of ‘woman as expert’ to be made explicit. This enabled an 'emic' or individual/insider approach to data generation and analysis to obtain conceptual density as opposed to imposing the researcher/outsider’s perspective (Stern, 1994). The intention of the interviews was to capture and explore the nature of how women make sense of their situations in the context of their individual lived experiences. Throughout the process the women’s accounts formed the foundation of the theory whereby the data generation and simultaneous analysis constructed the concepts upon which the theory was built (Charmaz, 2006). The data generation method gave each woman a voice to express her thought processes and experiences from multiple standpoints.

This was complemented by simultaneously taking an 'etic' perspective whereby patterns emerging across women’s collective experiences could be illuminated to highlight potential explanations for the factors influencing the decision-making process to facilitate the systematic development of the theory (McCann & Clark, 2004). Balancing this approach was achieved through reflexive memos that enabled the intersection between
the individual and collective perspectives to be illuminated. This approach aimed to facilitate the co-construction of data with the women and subsequent reconstructions of the data into a multi-vocal story that resonated with the women’s voices and aimed ‘to get at meaning, not at truth’ (Charmaz, 2000, pp. 526).

It is commonly agreed that grounded theory was developed on a framework underpinned by symbolic interactionism (Aldiabat & Le Navenec, 2011; Milliken & Schreiber, 2012). However, Glaser (2005) criticises the widespread acceptance of this affiliation, claiming that grounded theory can be used with a wide range of data and that restricting it within a symbolic interactionist framework restricts the potential of the research method. While he does concede that grounded theory can legitimately use symbolic interactionism, others argue that there is an intrinsic relationship between symbolic interactionism and grounded theory even if the researcher is unaware of this (Milliken & Schreiber, 2001). Nevertheless, this does not negate the incorporation of other theoretical perspective alongside this. Rather than limiting data generation and analysis, an understanding and appreciation of symbolic interactionism can provide some initial windows through which the researcher can analyse the phenomena under study and expand the breadth of theoretical codes available (Milliken & Schrieber, 2012).

A symbolic interactionist perspective shaped by the philosophy of pragmatism espouses the key tenet of grounded theory, which is to generate theory. They complement each other well with symbolic interactionism inspiring theory-driven research and grounded theory offering the analytical tools to achieve this (Charmaz, 2014). This study aims to generate a substantive theory that explains the factors influencing women’s decisions. A substantive theory is described as one that addresses a specific area of study or social process, as opposed to a formal theory that encompasses a more general and conceptual area of enquiry (McCann & Clark, 2004).
3.4 Evaluating grounded theory

This chapter has described some of the potential criticisms that could undermine the credibility of a grounded theory research. To safeguard the study’s credibility a reflexive approach has been maintained throughout the research process. This has been enhanced by being mindful of potential methodological pitfalls and in particular ensuring methodological congruence with the constructivist approach. Due to the diversity of epistemological positions taken by grounded theorists, there is a lack of consensus regarding the most appropriate way to evaluate a grounded theory study. Undoubtedly the traditional concepts of validity and reliability are inappropriate measures of quality for this study due to their positivist underpinnings (Sparkes & Smith, 2014).

Glaser & Strauss (1967) initially proposed four quality measures applicable to this research approach. ‘Fit’ relates to how closely the generated theory matches the phenomena it represents and is achieved predominantly throughout the process of constant comparison and realising theoretical sufficiency. This was enhanced by the longitudinal study design that enabled the emerging theory to be progressively tested on the women. A theory is considered ‘understandable’ or to have ‘grab’ if it offers an analytical explanation that make sense to those in the substantive area. The ‘general’ of a theory relates to the extent to which it is flexible and thereby relevant to the dynamic nature of day to day situations, while at the same time not so abstract that it loses its sensitising characteristic. Finally, users should be able to ‘control’ the substantive theory such that it is useful in practice and thereby applicable in the real world. While at first glance these may seem to be very product focused, this concurrently relies on procedural precision.

Concurrent with the evolution of grounded theory approaches evaluation criteria have also been modified and developed in recent decades (Birks & Mills, 2015). To ensure congruence with the epistemological approach taken, this study has been guided by the criteria proposed by Charmaz (2014) [Table 3-2 overleaf] to enhance the quality of both the processes used and the resulting substantive theory. This aligns with both the purpose and context of the constructivist approach adopted by this study.
Criteria for grounded theory studies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>Relates to the logic and conceptual grounding of the study and necessitates ensuring sufficient data to merit claims. It requires ensuring categories offer a wide range of empirical observations and that strong logical links are evident between the data and ensuing argument and analysis. This relies on providing sufficient evidence to allow the reader to form an independent assessment of the researcher's claims.</td>
</tr>
<tr>
<td>Originality</td>
<td>Relates to the social and theoretical significance of this work and the extent to which the categories offer new insights to current ideas, concepts and practices.</td>
</tr>
<tr>
<td>Resonance</td>
<td>Relates to whether the theory makes sense to the participants and people who share their circumstances. The analysis should offer deeper insights about their lives and worlds.</td>
</tr>
<tr>
<td>Usefulness</td>
<td>Relates to knowledge development and practical application. The analysis should also aim to offer interpretations that people can use in their everyday life.</td>
</tr>
</tbody>
</table>

Table 3-2 Criteria for grounded theory studies (Charmaz, 2014, pp. 337)

Charmaz highlights the interrelationship between these criteria, whereby resonance and usefulness are enhanced through a combination of the other two criteria credibility and originality. In addition to these criteria she asserts the importance of enhancing the outcome of the study through skilled articulation and presentation of the final theory (Charmaz, 2014). The study has operated using these principles as a continuing guide by maintaining a reflexive stance throughout the research process.

Cooney (2011) suggests that, whichever evaluative approach is taken, a balance is required that considers both methodological rigour and interpretive rigour. Therefore, throughout this study attention has been given to both auditability including the rigour of the analytical process, and the worth of the substantive theory produced. A similar approach was taken with respect to presenting ethical considerations that were addressed as they arose and embedded throughout this document as summarised in 4.1.2. The extent to which these evaluative criteria have been achieved will be critically evaluated in chapter 7 [7.2].

This chapter has presented a rationale for the methodological approach adopted in this study, and the underpinning epistemological assumptions and theoretical perspective. Chapter 4 details how this was operationalised in the form of a detailed audit trial to enable the reader to evaluate the methodological and interpretive rigour.
Chapter 4: Research design and methods

4.1 Introduction

This chapter demonstrates how the epistemological and methodological principles described in chapter 3 were applied. It begins by describing the strategies used to recruit the women who participated in the study, followed by a detailed description of the data generation and analysis methods employed. Its purpose is to provide an explicit account of the methods used throughout the study to construct the substantive theory. The iterative, non-linear nature of grounded theory and conceptual elements of the analysis can be difficult to illustrate. To complement the textual description, a timeline of the key stages and approximate timings of this research project has been developed [Figure 4-1 overleaf]. The analytical procedures used during data collection and analysis, are described in detail and illustrated with data excerpts and examples of memos supported by relevant literature to provide an audit trail to enhance the dependability and confirmability of the study.

4.1.1 Reference advisory group

An advisory group was set up to inform the development of the research design (Department of Health, 2005); this included 2 women (both have given birth since joining the group), a fitness instructor and a midwife. The purpose of the group was to promote an active partnership between the public and the researcher in the research process and help ground it in contemporary sociocultural context. The group offered advice on various elements of the project design, particularly the inclusion criteria, participant information sheet (PIS) and the recruitment posters. The facilitation of the advisory group was guided by the principles highlighted by INVOLVE (a national advisory group), who advocate that by reflecting the needs and views of the public, research is more likely to produce results that can improve practice in health and social care (INVOLVE, 2004). Contact was maintained with the members through email updates. Although they were not actively involved in the data generation or analytic process they were consulted in the latter stages of the research. The purpose of this was to test the emerging theory for ‘fit’ and to explore how the results of the study might be communicated to reach a wide and diverse audience.
Figure 4-1 Timeline of key stages of the research project.

The dates signify when each process started in earnest. For clarity the stages are presented as discrete events, in reality these overlapped as inherent with the iterative nature of the research process.
4.1.2 Ethical considerations
Rather than approaching ethical requirements of the study as a standalone stage, the principle adopted within this study was to demonstrate an explicit engagement with ethical issues throughout the research process. This commenced at the planning stage and was maintained through to the accurate and wide dissemination of the research findings (Macfarlane, 2009). Congruent with this principle, how this has been achieved is interwoven throughout the text of this thesis rather than being located in a discrete section. The location of the key evidence of this process is identified in Table 4-1.

<table>
<thead>
<tr>
<th>Key ethical consideration</th>
<th>Where addressed in thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to research area</td>
<td>4.2.1</td>
</tr>
<tr>
<td>Risk assessment</td>
<td>Appendix 2</td>
</tr>
<tr>
<td>Maintaining confidentiality</td>
<td>4.2.3 Appendix 2</td>
</tr>
<tr>
<td>Ensuring continued, informed, voluntary consent</td>
<td>4.2.3 Appendix 5</td>
</tr>
<tr>
<td>Dealing with distress in interviews</td>
<td>Appendix 2 &amp; 6</td>
</tr>
<tr>
<td>Maintaining anonymity</td>
<td>4.2.3, 4.2.4</td>
</tr>
<tr>
<td>Use of Internet forum as source of data</td>
<td>4.2.4</td>
</tr>
<tr>
<td>Dealing with disclosure</td>
<td>4.3</td>
</tr>
<tr>
<td>Addressing power balance</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Table 4-1 How ethical considerations have been addressed

Ethical approval for this study was sought and obtained from the University of Brighton’s Faculty of Health and Social Science Research Ethics and Governance Committee (FREGC) in November, 2011 (Approval number. FREGC-11-058). In addition, confirmation was secured from the South East Coast National Research Ethics Committee that ethical review by the NHS research ethics committee was unnecessary because the women were not being recruited through the NHS.

4.1.3 Memo writing
Memo writing involved the contemporaneous recording of emerging ideas or hunches throughout the research process. These were subsequently tested through the deductive process, ensuring that analytical insights were grounded in the data (Lempert, 2007). Thus memos were used to establish an audit trail that not only recorded but essentially informed the process of analysis. This was helpful throughout the analysis to capture the fundamental link between data and emerging theories and was complemented by the use of clustering to make sense of the complexities of the data (Clarke, 2005) [Figure 4-4, p86, provides an example of clustering]. Initially the memos and clusters were recorded in a research journal alongside the project timeline. As the analysis progressed these were
incorporated within NVivo\textsuperscript{33} which helped to maintain a logical filing system and record links with corresponding categories. The system for recording memos eventually developed with the framework and coding system, exemplars of memos are integrated throughout this chapter as detailed in Table 4-2.

<table>
<thead>
<tr>
<th>Memo code</th>
<th>Purpose of memo</th>
<th>Exemplar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodological</td>
<td>Reflect on the methodological features of the research.</td>
<td>Box 4-1 pp. 75</td>
</tr>
<tr>
<td>Memo (MM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theoretical</td>
<td>Record thought processes about the data such as initial hunches, ideas regarding what the data were saying and potential alternative explanations. These also acted as a record of attempts to link the emerging ideas to illuminating literature in the developing subject areas.</td>
<td>Box 4-4 pp. 95</td>
</tr>
<tr>
<td>Memo (TM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analytical</td>
<td>Record whenever new concepts arose and to capture emerging patterns or recurrent concepts in the data.</td>
<td>Box 4-3 pp. 94</td>
</tr>
<tr>
<td>Memo (AM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective</td>
<td>Build an emergent analysis of the transition into becoming a grounded theorist and to develop insight into and articulate my position in the research process.</td>
<td>Box 4-2 pp. 93</td>
</tr>
<tr>
<td>Memo (RM)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4-2 Framework for coding memos.**

4.2 The sample

4.2.1 Access and recruitment

The recruitment strategy was purposely designed to recruit pregnant women from a social setting as opposed to a medical one. This was considered more in keeping with the study aim to explore the decision-making process within the context of where women exercised and, therefore, was planned through local public community leisure centres. A more convenient and accessible approach to recruit pregnant women would probably be through their midwives or GP surgeries. This was discounted in an attempt to avoid introducing the research from a medical/health professional perspective that could potentially have influenced the women's responses towards more medically or ‘socially desirable’ responses (Oktay, 2012).

The recruitment process used purposive sampling that aimed to capture women who participated in a range of exercise activities to afford in-depth and relevant data. Because the research was specifically looking at women's decisions regarding exercise in pregnancy, recruiting women who exercised regularly was considered the most likely approach to generate ‘information rich’ data. This was in line with the salutogenic

\textsuperscript{33} The use of NVivo is discussed in more depth in section 4.5.1 pp. 86-87

64
approach adopted by the study that advocates shifting the focus from individuals with unhealthy lifestyles to those who have achieved the desired health behaviour. Furthermore, it has been argued that studying extreme cases can facilitate theory-building research because the dynamics being studied are more visible (Ladge et al. 2012). Drawing on this experiential wisdom of exercising in pregnancy helped to elucidate decision-making that could be compared to non-exercisers in future research. While interesting data may have been obtained by targeting women who did not exercise regularly, it was considered less likely to explain the research problem. However, drawing on the internet forums as a secondary source of data, as described in 4.2.4. enabled their perspectives to be used as an alternative lens through which to challenge the data and emerging theory.

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women over the age of 16 (due to potential vulnerability and the complexity of determining capacity to give informed consent).</td>
<td>Women considered being without the capacity to give informed consent, which was continually assessed throughout the recruitment and research process.</td>
</tr>
<tr>
<td>Usually exercises regularly[^34]</td>
<td>Any contraindication to exercising in pregnancy, using the criteria identified by PARmedX (CSEP, 2013) and RCOG (2006) (appendix 1).</td>
</tr>
</tbody>
</table>

**Table 4-3 Recruitment criteria for the initial phase.**

Table 4-3 details the inclusion and exclusion criteria for the initial recruitment phase. A detailed account of the recruitment process, including how informed consent was obtained, is included in Appendix 3. Permission to locate recruitment posters (Appendix 4) within the leisure centres was gained through the marketing and area managers. Subsequently, patient information sheet (PIS), consent forms (Appendix 5), recruitment flyers and posters were designed in conjunction with the Advisory group and the marketing staff of the leisure centres, to ensure the wording was clear and user-friendly. Three suitable[^35] leisure centres were identified by the area manager and contact made with the gym instructor at each of these to explain the study and ascertain the optimal poster and flyer locations. A supplementary recruitment strategy was concurrently

[^34]: Any healthy pregnant woman who usually exercises regularly, this includes before or during their current pregnancy. *Exercise* was defined in the PIS (Appendix 5) the term *regularly* was left to the women’s interpretation due to concern that stipulating this might overly restrict recruitment.

[^35]: This was determined by the manager’s judgement of which centres had staff who had sufficient resources to participate in the study and availability of an area where interviews could be held.
employed, using snowballing and social networking (an announcement on netmums.com) with a website³⁶ as an intermediary step to disseminate information regarding the study.

The initial phase of the research commenced with a prospective longitudinal approach that enabled data generation to capture women’s experiences as they unfolded at three sequential stages as detailed in Table 4-4. This study aimed to generate a theory on the women’s decision-making process through a dialogue with the data. Integral to the study design was the facilitation of opportunities for developing comparative data sets. Time lines of pregnancy for each woman were generated, enabling comparisons of how their experience changed as their pregnancy progressed.

<table>
<thead>
<tr>
<th>Interview</th>
<th>Timing</th>
<th>Purpose of interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview 1</td>
<td>Beginning of trimester 2</td>
<td>To explore retrospective pre-pregnancy exercise patterns as well as current activity</td>
</tr>
<tr>
<td>Interview 2</td>
<td>Mid trimester 3</td>
<td>To enable comparison of experiences both before and after formal antenatal care and capture experiences and decision-making as the pregnancies progressed.</td>
</tr>
<tr>
<td>Interview 3</td>
<td>6-12 weeks after the birth</td>
<td>To capture and compare experiences of later stages of pregnancy. This gave women opportunity to express their opinions and beliefs once they knew the outcome of the pregnancy and birth, this may have enabled them to vocalise a more authentic account of their activities and influences underlying the decision-making process.</td>
</tr>
</tbody>
</table>

Table 4-4 The interview Schedule.

Other comparative groups included nulliparous³⁷ and multiparous women, and women who continued to exercise and those who stopped exercising. In this way emerging issues could be conceptually located and the data interrogated to establish whether those concepts were evident in the other data sources.

In total, ten women were recruited to the interview strand of the study, 8 completed all three phases of the interview schedule. Two women missed interview 2, one because she gave birth prematurely and the other went on maternity leave but had only given her work

³⁶ The website can be viewed at http://exerciseinpregnancy.me.uk/
³⁷ Parity refers to how many previous births a woman has had nulliparous refers to a woman who has never given birth, primiparous a woman who has given birth once and multiparous a woman who has given birth two or more times
contact details. However, she made contact after the birth and both women subsequently completed interview 3. The potential theoretical and methodological impact of this was recorded within a methodological memo. On reflection the opportunity to capture any missed data in the final interview minimised any impact on the data analysis. The initial phase of the data generation was over an 18 month period (detailed in Table 4-5) with interviews occurring between June, 2012 and December, 2013. These ranged between 33-72 minutes duration. At interview 1 the women were assured that their anonymity would be maintained. They each chose pseudonyms by which they, and other family members mentioned in the interviews, were subsequently referred. This was to ensure anonymity so that individuals were not identifiable in the thesis, conference proceedings or publications arising from this study. A more detailed description of the 10 women is presented with the study findings (6.2).

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Baby due date</th>
<th>Interview one</th>
<th>Interview two</th>
<th>Interview three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katherine</td>
<td>22.10.12</td>
<td>11.6.12</td>
<td>5.10.12</td>
<td>28.3.13</td>
</tr>
<tr>
<td>Emma</td>
<td>10.12.12</td>
<td>2.7.12</td>
<td>22.10.13</td>
<td>5.3.13</td>
</tr>
<tr>
<td>Gladys</td>
<td>5.1.13</td>
<td>2.7.12</td>
<td></td>
<td>25.3.13</td>
</tr>
<tr>
<td>Claire</td>
<td>23.11.12</td>
<td>24.7.12</td>
<td></td>
<td>15.4.13</td>
</tr>
<tr>
<td>Bethan</td>
<td>25.3.13</td>
<td>7.8.12</td>
<td>4.3.13</td>
<td>11.7.13</td>
</tr>
<tr>
<td>Ruby</td>
<td>12.4.13</td>
<td>3.10.12</td>
<td>27.3.13</td>
<td>2.8.13</td>
</tr>
<tr>
<td>Pauline</td>
<td>6.1.13</td>
<td>29.10.12</td>
<td>18.12.12</td>
<td>20.5.13</td>
</tr>
<tr>
<td>Jane</td>
<td>27.6.13</td>
<td>11.12.12</td>
<td>24.5.13</td>
<td>4.11.13</td>
</tr>
<tr>
<td>Darcy</td>
<td>17.5.13</td>
<td>19.12.12</td>
<td>11.4.13</td>
<td>25.7.13</td>
</tr>
<tr>
<td>Lucy</td>
<td>6.9.13</td>
<td>1.3.13</td>
<td>8.8.13</td>
<td>12.12.13</td>
</tr>
</tbody>
</table>

Table 4-5 Timetable of interviews with the women

4.2.2 Theoretical sampling
The sequential nature of the interviews during this longitudinal study enabled the opportunity to theoretically sample through the ongoing interviews as concepts emerged in the data. This enabled further expansion, clarification and confirmation whereby theoretical sampling was employed to determine the direction of subsequent data generation (Birks & Mills, 2015). The strategy of purposive sampling moving into theoretical sampling, as tentative analytic categories emerged, enabled the progressive amplification and clarification of the theoretical constructs generated by the data. This drove the evolving interview schedule [section 4.6] for the sequential interviews sampling
alternative perspectives with the women and providing further opportunity for comparison and contrast.

To define and refine the emerging theory further six fitness professionals [Table 4-6], who had been identified by the women as people whose experience might offer further insight into the emerging theory, were approached, and all consented to participate in the study through semi-structured interviews.

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Date</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiona and Faye</td>
<td>4.9.14</td>
<td>Directors of a Maternity Active Wear clothing company.</td>
</tr>
<tr>
<td>Freya</td>
<td>8.10.14</td>
<td>Pregnancy yoga teacher.</td>
</tr>
<tr>
<td>Florence</td>
<td>29.10.14</td>
<td>Ante/post-natal fitness instructor.</td>
</tr>
<tr>
<td>Frankie</td>
<td>20.4.15</td>
<td>Running club coach. (Initially planned for 26.11.14)</td>
</tr>
</tbody>
</table>

Table 4-6 Timetable of interview with fitness experts

The study ultimately sought to understand the decision-making process from the women’s perspective, the rationale for including professional advisors was predominantly to explore and refine the categories of ‘maintaining the exercising self’ and ‘constructing the pregnant self’ and to broaden the scope of the developing theory.

As part of the on-going ethical considerations, changes to the recruitment process required for theoretical sampling, were discussed with my research supervisors and approval obtained from the University of Brighton’s FREGC. This sampling led to an additional source of data generation when the clothing company directors invited me to attend the Olympia, 2014 baby show with them. The purpose of pursuing this opportunity was to broaden my contextual understanding of the ‘pregnancy world’ and develop my insight into lay perceptions of exercise in pregnancy. Further discussion with my supervisors established that any public engagement in this arena would be in the form of informal discussions with the purpose of enhancing my theoretical sensitisation. No direct quotes from these discussions have been used and had anyone expressed an interest in participating in the study the approved recruitment process would have been followed. How theoretical sampling developed in the later stages of developing the theory is discussed further in sections 4.5.2 & 4.5.4.
4.2.3 Using the Internet as a data source

The increasing and widespread use of the Internet has impacted on numerous aspects of this research project, ranging from the use of a website to facilitate recruitment, an appreciation of its contribution as an information source to women, as is evident in the interview data, and as a potential avenue for disseminating the research findings. It also offers a unique vantage point from which to access a diverse range of data, potentially giving a unique insight into everyday life (Garcia et al. 2009). This is particularly so with the development of web 2.0 technology, and the ‘participative web’ through which Internet use has evolved from mainly looking for information to more interactive engagement, including user-generated content (OECD, 2007). The resulting wealth of data on social activity has been identified as a significant alternative to traditional social research approaches to data collection (Savage & Burrows, 2007) and is particularly relevant in this project whereby the existence of the interplay of multiple views and voices is considered essential.

Careful consideration was given as to how this data might be used to supplement that obtained through the interviews and more traditional sources of literature. Ultimately it was concluded that it was beyond the capacity of this project to develop an interactive online dialogue with women to generate further data. Instead the stance taken was to conduct a text-based analysis of existing online forum discussions that ultimately treated these as historic documents, all of which existed in the public domain. Juxtaposing this analysis against the material from the interviews enabled the identification of comparisons and contrasts to feed my analytical imagination. The forums Mumsnet and Fittamumma were selected on the basis that they offered forums directly focused on pregnancy exercise. These included a wealth of contributions from women who didn’t exercise and offered a contrasting comparison to the study sample.

While this approach offered the potential to inform a broader understanding of women’s views to supplement the interviews, access to the Internet is not universal but segmented according to socio-demographic characteristics. Therefore, a caveat to bear in mind while analysing this material was that it was subject to participation biases that were difficult to define. This was addressed by maintaining an awareness that, comparable to any research
data, it is not a mirror of society. Neither data source was taken as foundational truth but instead valued for the different perspectives offered.

The approach taken was that of keyword analyses of historic (as opposed to live) conversation records posted on online forums in the public domain. This was driven by emerging concepts arising through the data-analysis. While this data collection method did not engage with live discussions or require active participation from forum contributors it raised a number of specific and complex ethical dilemmas. Table 4-7 summarises how these have been addressed.

<table>
<thead>
<tr>
<th>ETHICAL ISSUE</th>
<th>FOR THIS PROJECT THIS WAS ADDRESSED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should informed consent be obtained online?</td>
<td>• Drawing on the debate as to whether Internet research should be classified as human subject research or text based analysis (Herron et al. 2011). Informed consent is required ‘when behaviour of research participants occurs in a private context where an individual can reasonably expect that no observation or reporting is taking place.’ (American Sociological Association, 2008, 12). It was therefore, important to continually evaluate the extent to which contributors to the forum perceived it as private.</td>
</tr>
</tbody>
</table>
| Is harm possible to someone existing in an online space? | • Maintaining a commitment to protecting the privacy of subjects engaging in activities in these public Internet spaces and ensuring confidentiality and anonymity were upheld.  
• Adopting a non-participatory approach that only drew on historic discussions  
• Modifying quotes used to make them unsearchable thereby not revealing online identities. |
| To what extent is this an invasion of privacy when items are in the public domain? | • Adopting the position that because the boundaries between public and private are blurred only material that does not require any login or registration was accessed and there was no engagement in online conversations. |
| Is the Internet a reliable, credible data source? | • Using a reflexive approach to maintain an awareness of my selectivity in looking at some data and not others.  
• Critically considering which forums to access and drawing on internet world stats (2014) to identify who might be excluded. |

Table 4-7 Addressing ethical issues raised by using the Internet as a source of data.

In summary a situated judgement was made, drawing on precedents from published Internet research (Buchanan & Zimmer, 2012; Hine, 2013; Seale et al. 2010). It was concluded that privacy was not being unreasonably infringed. Nevertheless, prior to accessing the online materials, the requirement for community consent was discussed with, and obtained from, the individual website administrators. While these individuals cannot claim to speak for all of the participants in the forum they do have an insight into the online community and are considered a knowledgeable resource to try to establish the
group norms and general consensus regarding how best to address the issues of privacy, anonymity and informed consent (Hine, 2013). This approach elicited a wealth of information which helped inform the analysis and develop theoretical sensitivity. However, theoretical sufficiency was attained through the study interviews and consequently the direct use of this data is minimal within the final thesis. If the emerging theory had taken a different direction this data may have been more significant and highlights a highly feasible data source for future research.

4.2.4 Theoretical saturation and sufficiency
Theoretical saturation has been defined as ‘data adequacy’ that involves collection of data until no new information is obtained (Morse, 1995, pp. 147). In grounded theory, therefore, sample size and data sufficiency are determined retrospectively once theoretical saturation occurs. The challenge is to define and demonstrate that this has been achieved. Charmaz (2014) clarifies this notion further in describing saturation as occurring when new data no longer trigger new theoretical insights, or reveal new properties of core theoretical categories. Therefore, saturation goes beyond the repetition of events, actions or statements, such that the frequency of codes arising in the data is not of critical importance. Instead through the analysis all data should be given equal attention, ‘eliciting all forms or types of occurrences, valuing variation over quantity’ (Morse, 1995, pp. 147). In reality the rarely occurring ‘gem’ can often provide a perspective that becomes a vital key to the understanding and development of the emerging theory.

A common criticism of grounded theories is that researchers foreclose too early on analytic possibilities, resulting in superficial analysis and a theory that is descriptive rather than theoretical (Glaser, 1992). In this study a balance was sought between avoiding premature closure while at the same time not generating huge amounts of unnecessary data. In the latter case this could result in becoming overwhelmed by the sheer volume of data, superficial analysis and losing sight of the fundamental processes within the area of study (Stern, 2007). This balance was achieved by ensuring the process of data generation was iterative rather than repetitive, whereby data was concurrently generated and conceptualised to enable focused data gathering through the evolving interview schedule and theoretical sampling. Through this process the goal was to
establish patterns that were not only insightful, but also demonstrated analytic precision and established theoretical relationships (Charmaz, 2014).

The extent to which saturation is realistically attainable has been questioned and the term ‘theoretical sufficiency’ has been proposed as an alternative way of demonstrating data adequacy and fullness of coding (Charmaz, 2014; Dey, 2007). This position acknowledges that in reality categories are produced through partial rather than exhaustive coding that is reflected in Glaser and Strauss’s (1967) suggestion that categories be ‘sufficiently dense’, denoting that theoretical saturation doesn’t necessarily signal a point of complete coverage whereby the researcher ‘knows everything’. This suggests that defining saturation is by nature a subjective, intuitive process, that can be simplistically described as when the emerging ‘theory makes sense to the researcher’ (Birks & Mills, 2011, pp. 115) or when the researcher has realised the full extent of the data, and thus ‘sampling is over when the study is over’ (Glaser, 1992, pp. 107). Charmaz admits that ‘saturation tends to be an elastic category that contracts and expands to suit the researcher’s definitions, rather than any consensual standard’ (2002, pp. 690).

It was considered that aiming for sufficiency rather than saturation as proposed by Dey (2007) was both more pragmatic and compatible with the constructivist and symbolic interactionist perspective underpinning this study. One way this was addressed was to ensure that the degree of sufficiency demonstrated adequately supported the claimed scope of the substantive theory presented and the credibility of the study (Charmaz, 2014). Therefore, data collection continued until no new theoretical insights were achieved and theoretical sufficiency could be demonstrated by the thoroughness of the data as well as the rigour of the analysis.

While it has been argued that theoretical saturation can be established through member checking or participant verification (Bowen, 2009), this remains the subject of much debate. Sandewloski (2002) suggests that the fluid nature of participants’ beliefs and understanding is influenced by the context of the day making them unreliable in enhancing validity. Unlike phenomenology the outcome of a grounded theory is not to produce a representative account of individuals’ lived experiences but for a highly conceptualised theorising of the process (Birks & Mills, 2011). Charmaz (2006) supports this view asserting that the fundamental methodological procedures of grounded theory
(e.g. theoretical sampling, inductive deductive reasoning) leave member checking unnecessary as a method of verification. A discussion on how theoretical sufficiency was enriched by engaging the emergent theory with extant literature will be presented in section 4.5.5.

4.3 Researcher–woman relationship

Adopting a constructivist approach to grounded theory meant entering the women’s worlds and co-constructing meaning through a mutual dialogue with them. The key aim in developing this research relationship was for it to be mutually beneficial, thereby upholding the ethical principle of respecting all elements of the women’s contributions while simultaneously enhancing the quality of the findings. Fundamental to this was proactive planning to minimise any inconvenience to the women, such as arranging interviews at a date, time and location of the women’s choice that helped to establish a position of reciprocity. This principle goes beyond the interviews themselves and has been reiterated through the sensitive transcription of conversations and use of verbatim quotes in the dissemination of these research findings.

A potential dichotomy was recognised in my professional position as a researcher and a practising midwife, particularly with respect to women divulging information or requesting advice. Prior to the study, how to address this was discussed with both my academic supervisors and my supervisor of midwives. Consequently, throughout the study I presented myself as a student of the University of Brighton undertaking research rather than a midwifery lecturer. While my clinical and experiential wisdom as midwife helped sensitise me to the issues, this was retained as a secondary role. Although it didn’t occur during this study, women could potentially have revealed their participation in something that might be considered dangerous or contraindicated. While there was not a legal or professional obligation to report this unless their actions were considered a danger to themselves or society, it was considered that there would have been a moral obligation to ensure women’s decision-making was fully informed. One way this was addressed was to include a carefully worded section on the limits of confidentiality and action in the event of a disclosure within the participation information and consent sheets (Appendix 5). A standard exercise leaflet from the RCOG, together with a guide for further reading was developed and offered to women who requested advice. On two occasions women
were advised to seek information from their midwife or obstetrician with respect to their current pregnancy.

Another precautionary measure taken was in anticipation that the interview process may arouse emotions in the women whose feelings are often quite labile in pregnancy. The women’s physical and emotional well-being was assessed throughout their involvement and a commitment made to interrupt or terminate interviews as guided by their wishes. Had they become distressed they would have been advised of the potential advantages of discussing issues raised with their midwife or GP and given a pre-prepared sheet of appropriate support services (Appendix 6). This situation did not arise during the research.

4.4 Data generation

In line with the constructivist approach adopted in this study, my role as the researcher was to interact with the women (key sources of data) and thereby ‘generate’ rather than merely ‘collect’ data (Birks & Mills, 2015). To obtain a rich account of the women’s perception on the research topic, in-depth one-to-one interviews were chosen as the main method of data generation. A thematic interview schedule (Appendix 7) was developed to help structure the initial interviews, this was informed by the key issues of interest identified from the preliminary literature review. Using such a guide minimises the risk of a novice researcher asking loaded questions that might force responses into narrow categories (Charmaz, 2006). The interview schedule was used to direct the interviews and enabled concepts to be introduced if the women did not spontaneously address them.

<table>
<thead>
<tr>
<th>When used</th>
<th>Interview questions</th>
<th>Reflective analysis of questions value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview 1 all women</td>
<td>Can we start by you telling me something about yourself?</td>
<td>Useful to gather demographic info and develop relationship with women</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helped identify how much women drew on exercise when describing themselves</td>
</tr>
<tr>
<td>Interview 1 all women</td>
<td>When people talk about exercising in pregnancy what activities do you think that means?</td>
<td>They describe what’s considered acceptable, what did I expect?</td>
</tr>
<tr>
<td>Interviews 9-13, 15-18</td>
<td>Does being an ‘exerciser’ give you a sense of achievement?</td>
<td>To explore impact of self-esteem and motivating factors on decisions.</td>
</tr>
<tr>
<td>Interviews 2 all women</td>
<td>How do you decide what’s OK?</td>
<td>About setting limits</td>
</tr>
</tbody>
</table>

*Table 4-8 The evolving interview schedule (Appendix 8 contains a more detailed record).*
This was continually modified as the project progressed [Table 4-8] and enabled the exploration of concepts emerging from preceding data analysis. This strategy allowed a balance between focusing the interviews on the developing analysis and offering the women the potential to open up new dimensions and capture detailed accounts of their experiences. Although the interviews and their subsequent transcription and analysis were time-consuming, they provided in-depth information along with the opportunity to clarify any ambiguity or uncertainty directly with individual women that focus groups or questionnaires would not have generated. In addition, this acknowledges the ‘women as experts’ of their own experiences, opening opportunities to explore the intentions that surround their decisions to exercise in pregnancy. Through the ‘combination of flexibility and control inherent in intensive interview techniques this approach fits grounded theory strategies for increasing the analytic incisiveness of the resultant analysis’ (Charmaz, 2014, pp. 86).

The following memo describes my initial preparation for the interviews.

<table>
<thead>
<tr>
<th>Methodological memo: Preparing for interviews 1/6/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>In preparation for the interviews I have read around the principles and practices of interviewing, attended workshops and conducted two practice interviews with friends; I am mindful that I am relatively inexperienced in research interviewing. Most of my experience is in recruitment or clinical history taking and I am conscious that to ‘Generate theory from rich data’ will be an essential component in my successful use of grounded theory. My first interview is 10 days away and I don’t want to waste the women’s time or miss the opportunity to generate rich data, which Charmaz suggests is integral to the success of the project. Some of my interpersonal skills are transferable to the research interview, having read the article by Hunt (2011), I realise with some subtle differences.</td>
</tr>
</tbody>
</table>

Box 4-1 Methodological memo: Preparing for interviews.

This prompted reflexive analysis into the similarities and differences between past professional experiences and the prospective research interviews. Many of the attributes were transferable but some skills development was required, re-evaluation of this continued through the research process informed through reflexive memos. The strategies used to address the required shift from asymmetrical style interviewing to co-construction are detailed in Table 4-9 overleaf.
Strategy to address differences in interview styles | Examples of how this was achieved
---|---
Maintain a balance between directing the interviews to test out emergent ideas with an openness to alternative accounts and explanations | Gently steered the interview

Address potential power imbalance by ensuring women’s comfort and wellbeing took priority over obtaining data. This was also achieved through informed consent process and stressing that women have the expertise in the subject, my desire was to learn from them. | Confirmed the interview would not last more than an hour and ensured it was brought to a close within that time, including giving women adequate opportunity to raise anything they thought we may have missed.

Researcher: ‘I have a loose template of questions but I’m also eager to hear what you have to say’. (Interview 1, with Jane)

Researcher: ‘Yes, absolutely there are no right or wrong answers, it’s interesting to hear everyone’s different perspective.’ (Interview 1 with Gladys)

Facilitate the women to do the bulk of the talking | Drew on my experience in teaching and being comfortable with periods of silence while women consider their responses.

Table 4-9 Identifying strategies for enhancing interviewing technique.

It was important to ensure that the interview technique was congruous with the constructivist and symbolic interactionist frameworks underpinning the study (Roulston, 2010). This is reflected in the open-ended nature of the questions used, the flexible nature of the research interview schedule and the focus on the meaning women gave to their personal situations and experiences. The research aim to explore a social process was reflected in the interview technique, which itself had inherent properties of building on an ongoing process of social engagement of the women telling their experiences.

An overriding goal during the interviews was to genuinely listen to the women, and to value their unique and individual contributions. Interview 1 was designed to include a short warm-up period following which the women were invited to tell me something about themselves. The rationale for this was to establish rapport and also give them the opportunity to express anything that was foremost on their minds before the interview began. Interviews were concluded by asking the women if they would like a copy of their interview transcript and followed up with a short e-mail thanking the women for their time (Appendix 9). The longitudinal design of the research enabled me to maintain contact with the women (and them with me), which is helpful should theoretical insights warrant further exploration (Schatzman & Strauss, 1973). To promote a reflexive
approach, a reflective post interviewing framework adapted from the literature was used (Miles & Huberman, 1994) [Table 4-10].

<table>
<thead>
<tr>
<th>Pauline: interview 2 Date 18.12.13 Length of interview 60 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What were the pre-interview goals?</strong></td>
</tr>
<tr>
<td>Begin to explore the emerging categories of body image and social influences and explore how decisions were made.</td>
</tr>
<tr>
<td><strong>What was the key issue that struck me in this interview?</strong></td>
</tr>
<tr>
<td>There was a strong message that Pauline wanted to decide for herself and be given clear, accurate information rather than be told what to do. While she never said that what she was doing was risky at the time she did admit that when she stopped, horse riding at 34/40 she felt a sense of relief that she had ‘got away with it’ (AM22)</td>
</tr>
<tr>
<td><strong>Anything else that was interesting illuminating or important?</strong></td>
</tr>
<tr>
<td>The story about walking from the car park and people thinking she should park closer because she was pregnant. After the interview there was a campaign on the radio about ‘stork’ pregnancy parking places that I followed up and found a lot of discussion on the Internet.</td>
</tr>
<tr>
<td><strong>How did the interviewee behave?</strong></td>
</tr>
<tr>
<td>She appeared comfortable with the interview process and interested in the research.</td>
</tr>
<tr>
<td><strong>How did I behave?</strong></td>
</tr>
<tr>
<td>I enjoyed the interview I was feeling more comfortable with my interviewing technique and felt I was able to explore several rich moments with Pauline; she revealed several important insights into her intentions underpinning her wish to continue exercising.</td>
</tr>
<tr>
<td><strong>Do I have any questions, hunches, what are alternative explanations for differences or gaps?</strong></td>
</tr>
<tr>
<td>Pauline spoke with a quiet determination to take responsibility for continuing her exercise particularly running the marathon in her pregnancy and riding her horses. This suggests women need an element of self-confidence to continue to exercise.</td>
</tr>
<tr>
<td><strong>How I feel about the research?</strong></td>
</tr>
<tr>
<td>I felt excited about the research, particularly because I think Pauline has given me some really interesting data. I also feel I need to do justice to the women, the time they have given up and the information they have given me. I feel disappointed that midwives are perceived as not being well-informed.</td>
</tr>
<tr>
<td><strong>Topics/for subsequent interviews?</strong></td>
</tr>
<tr>
<td>The concept of investing in exercise for ‘payback’, ‘selective information seeking’ and ‘being judged’</td>
</tr>
</tbody>
</table>

Table 4-10 Post Interview reflective template

This facilitated pertinent points and observations from the interviews to be recorded prior to analysing the data, including opportunity to evaluate interviewing style and identify areas where this might be developed further. This approach often generated ideas that became methodological, analytical or reflective memos to add to the memo bank.

4.4.1 Transcribing the interviews

The interviews were audio recorded, supplemented by field notes and the post interview reflective template to capture the wider context of the interview (Roulston, 2010). All the interviews were transcribed enabling attentive listening to the digitally recorded data, thus
situating it within each interview context alongside the corresponding field notes. Undertaking the transcription facilitated familiarity with the data and helped to develop theoretical sensitivity. It also provided opportunity to self-critique and further improve the interviewing technique by facilitating a reflexive approach towards the data generation process.

Converting the audio data into text in a methodologically sound manner is often given inadequate attention in qualitative research (Davidson, 2009). To avoid misconstruing anything the women said a naturalistic approach was taken that provided a detailed record of the interview. However, several disadvantages soon became apparent. In particular, that this was unnecessarily time-consuming as the transcripts were not being used for conversational or discourse analysis. Secondly, the women had been offered the opportunity to have a copy of their transcript. Seeing the realities of conversational flow as opposed to more refined speech can cause discomfort (Mero-Jaffe, 2011). This was addressed by balancing the natural flow of speech, inserting some grammatical rigour. It is commonly recognised that researchers use a combination of these two approaches (Oliver et al. 2005). More important was to acknowledge that through the process of transcription an element of the discourse of the interview was inevitably lost. To address this, data analysis was accompanied by habitually listening to audio recordings of the interviews, both in full and specific excerpts as categories emerged to reduce the extent that meaning might be misconstrued in the transcription process. This preserved the multi-dimensional meaning of the transcribed words, bringing them back to life so that their intended meanings could be realised.

The theoretical claims made in chapters 5 and 6 are supported by quotations from the interview transcripts to demonstrate how they are grounded in the data. Some of these have been edited to make explicit the theoretical argument they are supporting and to achieve brevity and clarity. Through this process the original text was ‘cleaned’ for pauses, hesitation and unnecessary discourse markers such as ‘so’. Ellipses have been used to indicate an intentional omission, that is demonstrated by ‘…’ and where a word has been added to clarify meaning it is enclosed by ‘[ ]’ to expose the extent of researcher interference with the original text (Powers, 2005). Therefore, while the transcripts were altered from their original form, the primary intention was to preserve the women’s spoken words as closely as possible.
Each quotation is highlighted in italics and referenced by the woman’s pseudonym and interview number (1 to 3). Below is an example of a verbatim script from Darcy’s third interview:

So um, so yes but interestingly um a lot of my girls err that I go to antenatal er that I know our antenatal crowd a lot of them went to yoga during pregnancy and I said oh are you going to go back and do it and do non-pregnancy yoga and they said ‘oh no I only did it when I was pregnant’ and that's interesting, and that's gone against I said I said if you didn't exercise before. But I think a lot of people decide to do pregnancy related exercises for the health of their baby so maybe there is different reason which is interesting because I didn't think they would.

The edited quote below has been enhanced by reducing the additional vocabulary while maintaining the content and meaning.

Interestingly, a lot of my girls from antenatal [class] …went to yoga during pregnancy and I said are you going to go back and do non-pregnancy yoga? They said ‘no I only did it when I was pregnant’ that's interesting; it's gone against what I said, about if you didn't exercise before. But I think a lot of people decide to do pregnancy related exercises for the health of their baby so maybe there is different reason which is interesting because I didn’t think they would. (Darcy, interview3).

The key rationale for selecting quotes in Chapter 5 was on the basis of their representativeness, while giving a balanced range of quotes across all women to encapsulate the variation in the data. At times atypical quotations are used to illuminate an extreme or contrasting view to provide breadth to the findings. An ongoing audit was conducted to check that no one individual was unduly represented which was documented in a reflexive memo. This subsequently served to shape a conceptual lever on the data during analysis. Table 4-11 (overleaf) presents a preliminary analysis of the use of quotes from the 10 women. Gladys and Jane were quite different from the other women and it is noteworthy that their quotes were initially selected less frequently. This difference was explored through memos [Box 3-1, pp.54] and this informed ongoing data analysis.

Arranging the data in chronological order revealed a tendency to use the quotes that occurred in the middle of the data generation period that might suggest that more significant data were gathered as theoretical sensitivity developed and categories and codes became saturated. This technique was a useful strategy to illuminate any selection
bias and use as a lens on any perspective shifts that occurred throughout the analytical process.

<table>
<thead>
<tr>
<th></th>
<th>Interview 1</th>
<th>Interview 2</th>
<th>Interview 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katherine</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Emma</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Gladys</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Claire</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Bethan</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Ruby</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Pauline</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Jane</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Darcy</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Lucy</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 4-11 Initial analysis of which quotes were selected for Chapter 5 (3.3.14).

The women were given the opportunity to review and comment on the transcription of their interviews to give them the opportunity to clarify or elaborate pertinent points. It was hoped this might raise new discussion that could be taken to future interviews. Whether this process enhanced the trustworthiness of the research by empowering women in the research process and demonstrating a respect for their contribution is the subject of some debate (Hagens et al. 2009). Alongside the advantages are a number of issues that require added caution and consideration. This was an additional burden on the women’s time and, therefore, receiving and reading the transcripts was entirely optional and not actively pursued if feedback wasn’t received. Furthermore, enabling women to comment and remove data they were not happy with could have resulted in valuable data being lost. Some of the women did not respond to the transcripts and others did not want a copy of them. On one occasion a woman requested the deletion of a certain segment of her transcript. While the concept informed the analysis, the quote\(^{38}\) was not included in the thesis. Empowering the women in this way contributed to the sense of trust in the research process and enhanced their engagement in subsequent interviews.

### 4.5 Data Analysis

The previous sections have focused on how data was generated. As illustrated in Figure 3-2 (pp. 51), This iterative process ran concurrently with data analysis enabling the

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\(^{38}\) The quote referred to how the woman looked and her reason for asking for it to be removed was that she felt it sounded vain and wasn't what she had meant.
identification of developing themes, patterns, processes and relationships. This comprised a succession of inductive-deductive cycles whereby working hypotheses and theoretical memos were used to interrogate the data and develop increasingly conceptual codes and categories.

The main analytic processes used were:

- Memo writing
- Coding
  - Line by line coding
  - Focused coding
  - Theoretical coding
- Constant comparative method of analysis that ran iteratively through each of the coding stages

NVivo\textsuperscript{39} was adopted alongside these to manage the data and organise records and developing ideas. The following section aims to provide an audit trail of the process of data analysis that ultimately resulted in 5 categories, defined in Table 4-17 [pp. 96]. Although this suggests linearity, in reality this was a highly iterative process moving between the stages of coding, literature review and conceptualisation of the data and emerging theory. The audit trail presented focuses on the development of one of the categories, ‘Maintaining the exercising self’, as an exemplar of the process and the analytical procedures and tools used. The sub-categories and codes that comprise this category are detailed in Table 4-12. (Appendix 10 contains a complete list of the 5 categories and their sub categories and codes.)

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Focused Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINTAINING THE EXERCISING SELF</td>
<td>Pre – pregnant self</td>
<td>Regaining pre-pregnant self&lt;br&gt;Being an exerciser&lt;br&gt;Knowing your body&lt;br&gt;Having a supportive partner</td>
</tr>
<tr>
<td></td>
<td>Antecedent conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercising for body image</td>
<td>Wanting to look good&lt;br&gt;Managing weight gain&lt;br&gt;Pregnant not fat&lt;br&gt;Getting body back</td>
</tr>
<tr>
<td></td>
<td>– (Body as Object)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercising for self-esteem</td>
<td>Unanchored identity&lt;br&gt;Maintaining self through exercise&lt;br&gt;Socialising through exercise&lt;br&gt;Having me time&lt;br&gt;Exercise as an accomplishment&lt;br&gt;Investing in exercise</td>
</tr>
<tr>
<td></td>
<td>– (Body functionality)</td>
<td></td>
</tr>
</tbody>
</table>

Table 4-12 ‘Maintaining the exercising self’ and its subcategories and codes

\textsuperscript{39} The use of the research software NVivo is discussed in more depth p.86-87
The study findings are presented in full in the next chapter but excerpts from the data and their theoretical interpretations have been integrated within this section to illustrate the process of data analysis and provide an audit trail of the theory development.

4.5.1 Developing a coding strategy
Coding is described by Charmaz as ‘the pivotal link between collecting data and developing an emergent theory to explain these data’ (Charmaz, 2014, pp. 113). This inductive process initiated the chain of theory construction and codes were treated as nascent theory derived inductively from the data rather than forcing it into a preconceived framework. Each interview was transcribed and initially coded as soon as possible after it had taken place to enable the essence of the interview to be captured alongside the recorded dialogue. The first five interviews were coded using microanalysis or line by line coding, systematically examining and fracturing the data to identify fundamental processes and hidden assumptions and meanings (Strauss & Corbin, 1998). This entailed labelling small segments of data in an attempt to simultaneously categorise, summarise and capture each piece and is the initial step in making analytical interpretations (Charmaz, 2014). When they characterised a broader concept in the data, in vivo codes (to capture the essence of the women’s descriptions) and gerunds (to maintain them as active players in the data analysis) were used. Table 4-13 gives an example of initial line by line coding from the first research interview. How these codes were subsequently developed is illustrated in Figure 4-3, pp. 85.

<table>
<thead>
<tr>
<th>Interview extract</th>
<th>Line by line coding</th>
</tr>
</thead>
</table>
| *I have noticed the benefits of keeping fit and running it keeps you nice and toned I just continued it really…... A couple of the ladies didn’t twig that I was pregnant, the running coach knows, she is very good you know at keeping an eye on you making sure you don’t overdo it. So they were all very positive, thought it was really good. I felt so well in myself and wanted to get out and do a bit for me really and on top of that tomorrow I’m joining a pregnancy yoga class (Katherine interview 1)* | Benefits of exercise  
Body image  
Pregnancy concealed  
Taking advice  
Not over doing it  
Receiving positive encouragement  
Feeling well/Exercise for me  
Pregnancy classes |

As commonly described in the literature (Sparkes & Smith, 2014), this process produced an unwieldy quantity (over 600 codes). These were reduced by merging similar codes and

---

40 Maintaining a reflexive approach helped ensure this principle was maintained as highlighted in reflective memo [Box 4-2]
41 A gerund is the noun form of a verb, in English it ends in -ing
subsequently making paper labels of the remaining codes to consolidate them manually into more manageable and meaningful concepts. This visual representation of the data enabled the words to be physically handled and ideas contained within them teased out, while maintaining sense of the wider picture (Bazeley, 2013). Figure 4-2 offers an illustration of one of several concepts that evolved through this process.

![Figure 4-2 Example of initial coding and the early development of the sub category ‘exercising for self-esteem’ 4/12/12](image)

The analytical process of coding determined that there were two key reasons why women exercised that were initially delineated by how exercise made them feel (self-esteem) and look (body image). Reviewing the literature identified two social concepts body objectification and body functionality that described how women view their bodies, and have been associated with prenatal health behaviours and maternal mental health (Rubin and Steinberg, 2011). Used as conceptual levers in the data analysis these helped define the properties and dimensions of the subcategories; **exercising for body image** (body objectivity) and **exercising for self-esteem** (body functionality).

The initial process of line-by-line coding was time-consuming but facilitated the development of theoretical sensitivity and confidence with the process of data analysis. As the analytical direction developed, focused coding was initiated using the codes
identified as most significant and/or frequent to categorise the data (Charmaz, 2014). This was accompanied by analytical memos recording the properties of the emerging focused codes. As data generation and analysis continued, the subcategories exercise for self-esteem and exercising for body image were further saturated and the codes and subcategory labels redefined. Initially these fell under a category labelled ‘maintaining self’ (as evident in some of the earlier diagrams) which through the above process was subsequently relabelled as maintaining the exercising self. This was eventually expanded into 3 sub categories by the later emergence of the subcategory of pre-pregnant self [Figure 4-3]. To illustrate the coding processes Figure 4-3 overleaf demonstrates how codes generated from line by line coding were eventually consolidated into the subcategories exercising for self-esteem and pre-pregnant self.

As the data analysis progressed, this tactile approach proved a useful adjunct to NVivo and returning to the paper labels periodically helped make sense of emerging hunches. The use of clustering 42 offered another opportunity for developing familiarity with the data and was used to explore the emerging concepts and their potential relationships [Figure 4-4]. By enabling this visual representation of relationships, clustering has been likened to conceptual or situational mapping and is a useful pre-writing technique (Charmaz, 2014). This proved a useful supplement to the theoretical memos, enabling a complementary record of how emerging concepts developed or lost significance as the data analysis progressed.

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42 This is similar to a technique recommended by Strauss (1987) which he describes as visual integrative diagrams.
<table>
<thead>
<tr>
<th>Interview extract</th>
<th>Initial codes</th>
<th>Focused codes</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘...it made me feel quite good it actually makes me feel more in control.’</td>
<td>Feeling in control</td>
<td>Maintaining self through exercise</td>
<td>Exercising for self-esteem – (Body functionality)</td>
</tr>
<tr>
<td>‘...and the walking which I did enjoy more so because I had my friend doing it with me.’</td>
<td>Exercising with friend</td>
<td>Socialising through exercise</td>
<td></td>
</tr>
<tr>
<td>‘My aqua is when I have my ‘me time’ if something is happening then I’ll ask someone to look after him my me time is important.’</td>
<td>Having me time</td>
<td>‘Having me time</td>
<td></td>
</tr>
<tr>
<td>‘You feel proud of yourself don’t you even just being able to fit it in.’</td>
<td>Having a pride in fitness</td>
<td>Exercise as accomplishment</td>
<td></td>
</tr>
<tr>
<td>‘What you put into your body is what you will get out and what will aid you in the labour experience.’</td>
<td>Expectation of payback</td>
<td>Investing in exercise</td>
<td></td>
</tr>
<tr>
<td>I had a bit of nausea but I found that if I exercise I think it helps that, and makes me feel better.</td>
<td>Health reasons, self and baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘I’ve always been a very active and energetic child through teenage through early adulthood and I need to be stimulated in that way.’</td>
<td>Identifying self as active</td>
<td>Being an exerciser</td>
<td>Pre – pregnant self</td>
</tr>
<tr>
<td>‘I’ve never been any good at team games, no one likes doing things that they are rubbish at do they.’</td>
<td>Ability influencing choices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4-3 Example of developing codes and subcategories for the category maintaining the exercising self.
Figure 4-4 Example of early clustering 15/10/12.

(The dotted circles identify the subcategories described previously that evolved into **exercise for self-esteem**/ **exercising for body image**. For clarity a larger scale diagram is included in Appendix 11)

The clustering diagram [4-4] demonstrates a very early iteration of the analysis and emerging hunches derived from the initial 5 interviews. The iterative nature of the data analysis enabled frequent returning to earlier records comparing developing categories with the original ones and reviewing initial codes to ascertain which best represented the data as the categories evolved. At this stage sufficient familiarity with the data and confidence with the coding process was achieved and NVivo was employed to support the process of data analysis. As the project progressed, this proved an invaluable tool alongside a variety of manual methods.

Within the community of qualitative researchers there is ongoing debate regarding the compatibility and usefulness of this software with a grounded theory approach (Stern, 2007). The main arguments against this are that computers distance the researcher from the data and may lead to the mechanisation of analysis by fostering dominance of ‘code and retrieve’ as a strategy for analysis (Hutchison et al. 2010). In contrast Bazeley (2013) argues the intention is not to replace the researcher’s interaction with the data but to
enhance the efficiency of the data analysis by harnessing the capacity of computers for recording, sorting, matching and linking. Remaining cognisant of the potential drawbacks, a combination of manual and electronic techniques was used as best suiting the project’s developing requirements (Welsh, 2002). Throughout the analysis the transcripts and audio recordings were frequently revisited to maintain close engagement with the data and ensure that the developing ideas remained grounded within it.

The properties and dimensions of codes and categories were defined and recorded and continually updated as the analysis evolved. The example used in Figure 4-5 demonstrates a common concern for the women which highlighted how they used exercise to control body weight.

Figure 4-5 Properties of code from NVivo.

Emanating out of this line of analysis were the sub categories ‘exercising for body image’ and ‘exercising for self-esteem’. Within the data there was a recurrent pattern of women wanting to maintain these two elements of their selves and the concept of ‘maintaining the exercising self’ began to evolve.

It became apparent that the software offered far more than a mere storage facility. Therefore, the mapping and querying tools were used to complement manual methods and facilitate a thorough interpretive analysis. The text search query function of NVivo aided constant comparative analysis by enabling me to ascertain how emerging ideas were relevant to already-coded documents (Bazeley & Jackson, 2013). By adopting the strategy recommended by Bazeley & Jackson (2013) whenever NVivo project file was closed, a new dated backup copy was saved. As well as protecting against data loss, this also contributed to an audit trail of the process of analysis.
4.5.2 The constant comparative method

The constant comparative method is the ‘heart’ of grounded theory (Fielding & Lee, 1998) and was employed throughout all stages of the analysis to inform the coding and identification of emerging categories and relationships between these. Comparisons were made between data, codes and categories, both within a single interview and between interviews of women in the same or different groups. The longitudinal study design enabled changes in time and physicality to be captured and compared. The earlier description of the study’s sampling criteria (4.2.1) identified the potential for comparison of a variety of groups to facilitate theoretical enlightenment. These were drawn on as the study progressed, together with unanticipated groups that emerged from the data.

While NVivo proved to be a useful tool for managing information and keeping records the extent to which it enabled the data to be compared and contrasted was limited. This was addressed by extracting pertinent characteristics identified through the coding process into an Excel spreadsheet [Table 4-14].

<table>
<thead>
<tr>
<th>Having an exercise identity</th>
<th>Katherine</th>
<th>Emma</th>
<th>Gladys</th>
<th>Claire</th>
<th>Bethan</th>
<th>Ruby</th>
<th>Pauline</th>
<th>Jane</th>
<th>Darcy</th>
<th>Lacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was physical exercise prominent in description of self?</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Does she describe goals related to exercising?</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Did her descriptions of physical exercise suggest it was a central factor of her self-concept?</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Does she describe how exercise makes her feel good about herself?</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Do other people see her as someone who exercises regularly?</td>
<td>√</td>
<td>x</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Is being an exerciser more than just exercising (health, self-esteem)</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Does she mention missing exercise?</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

Table 4-14 Grid testing hypothesis of relationship between exercise and self-identity 4/10/15

Initial coding had identified two key reasons why women exercised, which revolved around looking and feeling ‘good’, that appeared to link with descriptions of having an exercise identity reported in the literature. The purpose of this grid was to interrogate the data to determine the extent to which the women demonstrated the characteristics

43 These characteristics were drawn from Anderson’s Exercise Identity scale (Anderson & Cychosz 1994)
commonly associated with having an exercise identity. Through this process it became increasingly evident that while the women described different individual relationships with exercise, it was an integral part of their self-identity and a moderating factor in their decision-making. This insight informed both subsequent interrogation of the data, and the evolving interview schedule, and exemplifies the inductive-deductive cycles of the process of analysis. This approach enabled an in-depth interrogation of the data from a variety of perspectives and facilitated the identification of patterns and variation. Examining the data in this way enabled the identification of new analytical insights and directed subsequent theoretical sampling.

4.5.3 Developing theoretical sensitivity
Theoretical sensitivity involves identifying and extracting data elements (includes primary and secondary data) that are relevant for the developing theory and is a fundamental element of grounded theory research (Birks & Mills, 2015). It is shaped by the researcher’s personal and professional history and can be developed through various strategies, increasing as the research progresses (Birks & Mills, 2015). Table 4-15 overleaf demonstrates a variety of approaches drawn on to develop theoretical sensitivity that played a major role in the process of data collection and analysis in this study. Adopting these approaches and developing greater theoretical sensitivity facilitated the inductive deductive cycles of the analysis that in turn illuminated new directions and perspectives. A detailed audit of these iterative cycles was maintained in the form of theoretical memos. Using the literature to develop theoretical sensitivity and as a third point of comparison was an integral and ongoing part of the data analysis.

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44 This is evidenced in depth in sections 5.3.1, 5.4.1 and 5.8 in the findings chapter.
### Table 4-15 Strategies for developing theoretical sensitivity.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>How this has developed theoretical sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging with the data</td>
<td>Transcribing interviews and frequently listening to the recordings enabled immersion in the data and an intense focus on the women’s perspectives about exercising that might, in some instances seem strange / different / alternative to my own. A variety of approaches was used to develop insight into the relationships between emerging theories that included paper labels of the developing codes and diagramming.</td>
</tr>
<tr>
<td>Using metaphor</td>
<td>Initially I fell into the trap of what Glaser describes as ‘sense making’ that wasn’t grounded in the data (Glaser, 2011). A more fruitful approach to facilitate perspective shifting was to use metaphors such as Alice in Wonderland [Box 4-3] that highlighted the impact of identity transition on the decision-making process.</td>
</tr>
<tr>
<td>Talking to people</td>
<td>Discussing research with friends, colleagues and supervisors highlighted alternative perspectives and analytical possibilities with which to interpret the data. An example of this was a friend suggesting that similar to pregnancy, intrinsic motivation to exercise often leads people to disregard medical advice following injury or surgery.</td>
</tr>
<tr>
<td>Insights from personal and professional experience.</td>
<td>Reflexively memoing personal and professional experiences and decision-making regarding pregnancy, diet and exercise relative to the women’s experiences enabled the identification of similarities and differences to shape further analytical interrogation of the data.</td>
</tr>
<tr>
<td>Engaging with the literature</td>
<td>Reading a wide range of literature enhanced sensitivity and stimulated new conceptual levers with which to think about and label data.</td>
</tr>
</tbody>
</table>

#### 4.5.4 Progressing with coding and data analysis

Through the processes described, 5 key categories eventually emerged [Table 4-17]. To establish the relationship between these developing categories numerous theoretical models were auditioned. The initial literature search had identified several studies by Hausenblas et al. (2008) that explained women’s exercise behaviours through the theoretical lens of planned behaviour. However, these applications of the theory of planned behaviour gave minimal attention to the impact of social influences on decisions to exercise in pregnancy. It was evident from the data that this was fundamental to the women’s decision-making processes. Subsequently ‘Emancipated decision-making’ (Wittmann-Price, 2004) helped identify a scaffold that enabled the data to be viewed from a different perspective and further develop theoretical sensitivity. However, further analysis\(^{45}\) led to the conclusion that this framework was inappropriately and prematurely forcing the data into these categories. This concept was set aside momentarily but revisited during the theoretical integration stage of the research. A key insight this step of the analysis elicited was the value of considering the extent to which the factors influencing the decision-making process constrained or empowered the women’s’

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\(^{45}\) Appendix 13 contains a record of this analysis as documented in a theoretical memo
decision-making. This led to several theoretical memos and informed subsequent theoretical sampling. This highlighted a common dichotomy the women faced when making decisions which constrained their autonomy and was theoretically defined as experiencing conflict (later retitled as identity conflict).

<table>
<thead>
<tr>
<th>Interview extract</th>
<th>Focused code</th>
<th>Subcategory</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think women these days are inclined to stay more active and fit whilst they are pregnant. But people probably do just stereotype you know. People do not take too kindly that they are continuing with exercise. (Katherine, interview 1)</td>
<td>Investing in exercise</td>
<td>Exercising for self-esteem</td>
<td>Maintaining self</td>
</tr>
<tr>
<td></td>
<td>Identifying social expectations</td>
<td>My pregnant self</td>
<td>Facing social expectations</td>
</tr>
<tr>
<td></td>
<td>Being under scrutiny</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4-16 An example of conflict between influences to exercise.**

Through the process of analysis and merging of concepts it became apparent that women were experiencing pressure to conform to social expectations which conflicted with their desire to exercise [Table 4-16 demonstrates how this was coded]. The continued use of diagrams or clustering provided a visual representation of this emerging theoretical concept and its evolving relationships. Diagramming is often considered an intrinsic part of grounded theory (Charmaz, 2014) and can be seen as an extension of clustering. It is considered a particularly useful tool for the ‘visual researcher’ (Sengstock, 2015) and has been likened to developing a loom for weaving a storyline\(^{46}\) of the emerging theory (Scott, 2004). This line of analysis further highlighted the diversity and complexity of the processes involved in the women’s decisions regarding exercise, with many factors\(^ {47}\) simultaneously encouraging and discouraging exercises as depicted in Figure 4-6 overleaf.

\(^{46}\) Storyline is an advanced coding procedure used as a mechanism of both integrating and presenting grounded theory (Strauss & Corbin 1990; Birks, et al. 2009).

\(^{47}\) These factors are evidenced in more depth in Chapter 5 Findings, section 5.3-5.5
Through this process the opposing influences on women’s decisions became increasingly apparent and the category ‘identity conflict’ evolved as a pivotal link between the two [Figure 4-6]. This initiated revisiting the literature on self-identity that highlighted similarities between what was emerging from the data and Breakwell’s (1986) early theory of coping with threatened identities. This offered a partial explanation for some of the discrepancies in individual women’s accounts of their decision-making. Through diagramming and theoretical memoing, the role of self-identity, particularly the desire to maintain a continuity of self-identity, was identified as a fundamental in the decision-making process. While these categories appeared to have reached sufficiency in that they were well supported by the data progressing beyond this point to a more theoretical explanation of the data proved challenging. As highlighted in 3.2 there was an element of ongoing development in the strategies used for data analysis. Reflecting on the

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48 How women manage identity conflict is articulated by Breakwell in her work on threatened identities and identity construction that has evolved into identity process theory (Breakwell 1986). This illuminated how when women experience an identity conflict they address it by drawing on the universal processes of identity assimilation and accommodation.
management of the data analysis up to this point made me reconsider my interpretation of data analysis [Box 4-2].

<table>
<thead>
<tr>
<th>RM Data analysis 6/6/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have found the process of data analysis unexpectedly challenging and think I initially misinterpreted Charmaz’s quote ‘grounded theory provides a detailed rigorous and systematic method of analysis as meaning that it was a prescriptive easy to follow process. In some ways I think this is reflected by what Oktay (2012) describes as inappropriately applying the positivist concept of interrater reliability when in grounded theory there is no one right way to code. I can now see that this needs to be a flexible process to accommodate the nuances of each research project and the researcher’s preferred conceptual approach. It was apparent that to some extent I had been coding and identify patterns that fell in the initial areas I had highlighted as questions to guide the interview that in turn came from the literature on exercise in pregnancy. I was looking for things like ‘barriers’ and ‘enablers’ to exercise and realise I need to try to leave this framework behind and look more deeply into the data.</td>
</tr>
</tbody>
</table>

Box 4-2 Reflective memo data analysis.

This resulted in taking a more conceptual approach to analysis, initiated by Hoare et al’s (2012) encouragement to ‘dance with the data’ that advocates looking at data in varying ways to see what (if any) insight emerges. With guidance from my supervisors, an alternative approach was developed that provided conceptual leverage on the data enabling me to distance myself from the interviews and see the data from a different perspective (Schatzman & Strauss, 1973).

The metaphor of Alice in Wonderland [Box 4-3, overleaf] and the theoretical concept of liminality proved to be two of several useful conceptual levers for interrogating the data and facilitating a perspective shift from practitioner to researcher. This led to reviewing and relabelling a number of the codes and categories initially used to interpret the data into progressively conceptual ones, Charmaz (2009) describes this as ‘shifting the grounds’.
you’re in a sort phoney world when you’re pregnant (Gladys, interview 1)

…….this quote led to comparing the transition of pregnancy the women were describing with Alice entering Wonderland stimulated deeper exploration of how women’s behaviour was influenced by the transition through pregnancy.

You do the whole pregnancy thing, just like when you’re getting married you do the wedding thing, things you don’t normally do, like people getting their bodies in shape for their wedding may be someone who doesn't normally exercise. (Darcy, interview 2)

(Subsequently coded as ‘Doing pregnancy’ within the subcategory ‘My pregnant self). This highlights the temporary nature of pregnancy and women’s desire to maintain their usual self while wanting to fit in this new ‘pregnancy world’. The women also experienced their bodies being distorted by pregnancy that they had little control over, like Alice with ‘drink me eat me scenario’. The story ends with Alice returning to ‘normality’ which the women described as a key motivator for exercising.

I need to develop a better understanding into ‘transition theories’ to identify whether this might help a more conceptual theory development.

Box 4-3 Excerpt from analytical memo.

As the key categories evolved they were made conceptually denser through theoretical sampling and continually asking questions of the data. While the analysis didn’t adopt the full coding paradigm proposed by Strauss and Corbin (1998), it drew on some of the analytical tools they describe to add conceptual depth to the categories. Asking investigative questions of the data such as: ‘when, where, why, how and with what consequence does the category occur?’ enabled relationships and interactions between the categories to be developed.

A challenge in scaling up the final theory was identifying an effective way to integrate the factors that influenced decisions alongside the decision-making process itself. Returning to the questions suggested by Charmaz ‘What is the problem my participants see and how do they address/resolve the problem they face’ (Charmaz, 2006) helped the basic process to be identified. This led to a working hypothesis [Box 4-4 overleaf] that a key challenge for the women was trying to maintain elements of their self-identity as they made the transition through pregnancy. This theoretical interpretation was subject to empirical scrutiny by returning to the data to verify that it was adequately supported by the data.
Pregnancy destabilises the women’s identity as they experience the transition through pregnancy. This includes changes to both personal and social elements of their self-identity. To what extent does this influence the decision-making process?

In a way what the women are describing is like being in limbo. The notion of rites of passage and its inherent liminal phase are described in the seminal works of the French anthropologist Van Gennep (1873-1957) and British ethnologist Turner (1920-83), (Reus & Gifford, 2013). Both described a three staged approach separation (from old role), transition or liminal phase and integration (into new role). The theoretical concept of liminality is used to describe the experience of transitional phases in life such as adolescence, marriage, or parenthood, during which individuals experience ambiguity and instability because they belong neither to their ‘‘old world’’ nor to their ‘‘new world’’ (Turner, 1979). In addition to the above quotes there are several examples of this liminal state in the data in particular in how women refer to wanting to get there old self back, seeking social support and facing uncertainty.

A number of studies in this field (pregnancy and motherhood but not exercise) have drawn on the transitional concept of liminality to demonstrate the multifaceted nature of transitions, emphasising how each is characterized by its own uniqueness and complexity. This suggests that the concept of liminality offers an illuminating perspective through which to view this transition to motherhood and describes the context within which the decisions to exercise take place. The personal investment women made in pregnancy rituals through ‘‘doing pregnancy’’ has been described as an essential element of successful role transition that can buffer the transition from woman to mother (Côté-Arsenault et al. 2009).

Box 4-4 Excerpt from Theoretical Memo 12/12/14

The cyclical process of the analysis involved the continued integration of the different methodological procedures to develop gradually the conceptual properties of the categories. Viewing the data from the theoretical lens of identity and identity transition helped clarify the underlying process that eventually resulted in the categories being refocused around identity. The most significant development was the emergence of the category constructing the pregnant self which shifted the focus from facing social expectations as a discrete category to being recognised as integral to the women’s
‘pregnant identity’. Similarly the original category achieving a balance\textsuperscript{49} which had encapsulated the decision-making process was refined and renamed accommodating the pregnant self. Iterative reviews of the data to establish whether the emerging theory was ‘grounded in the data’ confirmed that there was sufficient evidence to substantiate this reinterpretation. This resulted in the emergence of five key categories that are defined in Table 4-17.

<table>
<thead>
<tr>
<th>Properties of category</th>
<th>Core Category</th>
<th>Original category</th>
</tr>
</thead>
<tbody>
<tr>
<td>How women invested time and energy in exercise to maintain a positive body image, a</td>
<td>MAINTAINING THE EXERCISING SELF</td>
<td>MAINTAINING SELF</td>
</tr>
<tr>
<td>healthy functioning (capable) body, positive self-esteem. Involved exercising to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maintain benefits gained pre-pregnancy through exercise to return to pre-pregnant self</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the future.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How women maintained their unique normality as they adjusted their self-identity to</td>
<td>CONSTRUCTING THE PREGNANT SELF</td>
<td>FACING SOCIAL IDEOLOGIES &amp; MY PREGNANT S</td>
</tr>
<tr>
<td>accommodate physical and social changes that accompanied pregnancy. This includes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>facing social norms or expectations of ‘pregnancy behaviour’.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How women experienced conflict between their two identities; the exercising self and</td>
<td>IDENTITY CONFLICT</td>
<td>EXPERIENCING CONFLICT</td>
</tr>
<tr>
<td>the pregnant self. In particular from conflicting advice and admonishment regarding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>their desire to exercise.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision-making process regarding exercise which involved strategies to address</td>
<td>ACCOMMODATING THE PREGNANT SELF</td>
<td>ACHIEVING A BALANCE</td>
</tr>
<tr>
<td>identity conflict and achieve a balance between the conflicting influences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How women drew on exercise to contemplate and help realise their ideal future self</td>
<td>POSSIBLE FUTURE SELVES</td>
<td>ELEMENTS OF MAINTAINING SELF &amp; FACING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOCIAL IDEOLOGIES</td>
</tr>
</tbody>
</table>

Table 4-17 The five key categories that emerged from the data analysis

As categories developed and the analysis moved into the theoretical coding stage, relevant memos were sorted and coded to aid the formation of the preliminary theoretical model [Figure 4-7], a crucial step in theory generation (Glaser, 1978). Identifying a core category ‘the central phenomenon around which all the other categories are related’ (Strauss & Corbin, 1990, pp. 116) was a central idea in the early grounded theory texts (Birks & Mills, 2015). While subsequent writers (Charmaz, 2014; Clarke, 2005) appear to put less emphasis on the importance of this, Glaser (2002) continues to argue its

\textsuperscript{49} The category ‘Achieving a balance’ was developed through the processes detailed in this chapter, as was ‘Possible future selves’ specifically how these were derived from the data is presented in depth in the findings chapter.
criticality. Cognisant of criticism of only partially following the methodology, identifying a core category was considered highly desirable to facilitate the development beyond a descriptive account and towards a conceptual theory (Cutcliffe, 2000). It was apparent that ‘self-identity’ was pivotal in the decision-making process and, initially the category entitled ‘identity conflict’ appeared the most prevailing. However, it did not effectively capture the continuous, dynamic or contested nature of the decision-making process. It became clear that the process being described was an on-going negotiation influenced by various moderating factors.

While cautious of not forcing the data, to help progress the analysis a method used in the dimensional analysis approach to grounded theory (Schatzman & Strauss, 1973) was drawn on, in which each main category was auditioned in turn for its explanatory power in relation to the others. This helped develop some coherence to the theoretical process leading to the nascent development of a theoretical model with ‘accommodating the pregnant self’ as the core category.

4.5.5 Integration and scaling up the theory
As the analysis advanced, the concept of liminality proved to be a useful conceptual lever for building an outline of how decisions to exercise were influenced by pregnancy [this is developed in more depth in section 5.4 and illustrated in Figure 5-4]. However, as the dynamic nature of decision-making began to emerge more explicitly it was evident that the scope within which decisions were influenced needed to broaden beyond liminality. During the later stages of the analysis, theories from various disciplines were auditioned to establish how to situate the substantive theory within the existing body of research and to establish its original contribution.

This was ultimately realised by taking up Allen and van de Vliert’s (1984) invitation to adapt their model of role transition. Further iterations of the analysis enabled the categories to be made conceptually denser and the theoretical constructs clarified, supplemented with further integration of the literature. Eventually there appeared to be theoretical sufficiency to create a substantive theory (Charmaz, 2014). Through the use of continued diagramming and the integration of the theoretical memos, a storyline of the

50 Since its conception the model has been demonstrated to provide a useful insight into role transition (Bredeson 1993) and adapted to explore learning transitions (Petty, et al. 2011; Scholes, 2006).
substantive theory emerging from the data was developed, depicted by the theoretical model in Figure 4-7. This was successively populated with data and shaped the foundation for preliminary drafts of the storyline used to present the findings in the following chapter.

**Figure 4-7 Theoretical model of emerging theory**

How Allen and van de Vliert’s model (1984) was adapted to fit the emerging substantive theory, and its constituent theoretical categories is illustrated in Table 4-18 below.

<table>
<thead>
<tr>
<th>Elements of original role transition model</th>
<th>Elements of this research model</th>
<th>Definition of key elements of model</th>
<th>Theoretical categories</th>
</tr>
</thead>
</table>
| Antecedent Conditions                     | Pre-pregnant self               | The circumstances that characterised the Pre-transition self-identity. | • Having an exercise identity  
• Knowing your body  
• Having a supportive partner  
• Anticipation of change |
| Role Transition                           | Identity Transition             | The process of acceptance or resistance to identity change. | • Maintaining the exercising self  
• Constructing the pregnant self  
• Cultivating resources |
| Role Strain                               | Identity conflict               | The psychological impact of the transition on the women. | • Exercising self versus the pregnant self |
| Reactions                                 | Accommodating the pregnant self | Reaction to identity strain, decision-making process and subsequent behaviour. | • Weighing the balance  
• Accommodating and assimilating |
| Consequences                              | Possible future selves          | Degree of integration and acceptance of new identity. | • Desired self  
• Ought self  
• Feared self |
| Moderators                                | Moderating factors             | These factors influence the amount of identity conflict experienced and how this is addressed. | • Individual  
• Environmental |

Table 4-18 Modifying model of role transition and definitions of key elements
In the latter stages of refining the substantive theoretical account the opportunities to articulate it at seminar presentations and in informal peer discussions further facilitated my critical reflection. This enabled a perspective shift with which to return to the data and further interrogate the workability of these new theoretical framings. Subsequently, drafting a storyline for this present thesis has enabled further theoretical integration of the substantive theory and confidence in the final theory. This was reinforced in July, 2015 when the model was presented at a doctoral student conference. The subsequent feedback confirmed that the substantive theory had ‘fit and grab’, suggesting it matched the data it represented offering an explanation of behaviour in the substantive area that others could readily relate to (Glaser, 1978).

In conclusion, this chapter has provided a rationale of the methods used in the data generation and analysis stages of this research. The resultant audit trail demonstrates how the theoretical model of women’s decisions regarding exercise in pregnancy was constructed. The next chapter will use the model [Figure 4-7] as a framework to present the substantive theory drawing on data excerpts and accompanied by ongoing interpretation to demonstrate how the theory is grounded in the data. This will be complemented by reference to the literature that influenced the analysis. This culminates in an elaboration of Figure 4-7 to clarify how the categories and subcategories contributed to the final theoretical model ‘Accommodating the pregnant self’, Figure 5-7 p170.
Chapter 5: Findings

5.1 Introduction

This chapter presents the study findings; it is interspersed throughout with verbatim quotes from the interview transcripts to demonstrate that the theoretical claims are ‘grounded’ in the data. Quotes have predominantly been selected for their representativeness however, sometimes ‘atypical’ data is included to afford a more comprehensive picture of the variety of factors that influenced the decision-making process. To illustrate how the concepts generating the emergent substantive theory originated from the data, key categories and sub-categories are highlighted in bold. Diagrams are used throughout this chapter to illustrate the relationships of these within the emergent substantive theory.

The chapter begins with an overview of the study setting and the women’s backgrounds to help contextualise the findings. Subsequently, the findings will be structured by progressing through the stages illustrated by the theoretical model in chapter 4 [Figure 4-7]. This describes how decisions to exercise were influenced as the women navigated their journey from pre-pregnant self through the transition of pregnancy towards possible future selves.

Section [4.4.1] described the interview transcription process and detailed how excerpts from the interviews have been edited to make explicit the theoretical argument they are supporting and to achieve brevity and clarity. Each quote is highlighted in italics and referenced by the woman’s pseudonym and interview number (1 to 3). The data from the women is supplemented with quotes from the interviews with the fitness experts (denoted by interview FE) and extant literature which includes internet forum discussions as described in section [4.2.3].

References to extant literature and internet forums have been delineated within this chapter by locating them within footnotes. This approach is advocated by Glaser (2009) and has the advantage of not distracting from the essence of the generated theory.
5.2 The context of the study

The data presented in this chapter is predominantly drawn from the interviews with the 10 pregnant women, supplemented by insights from theoretical sampling of the fitness experts, internet forum and extant literature. Table 5-1, below highlights the women’s demographic details and also includes exercise details to give a broad picture of the activities they participated in and how this changed in pregnancy.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Occupation</th>
<th>Previous births</th>
<th>Main pre pregnancy exercise</th>
<th>Main pregnancy Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katherine</td>
<td>28</td>
<td>Personal assistant</td>
<td>First baby</td>
<td>Walking Horse riding Running Swimming</td>
<td>Running Swimming Yoga</td>
</tr>
<tr>
<td>Emma</td>
<td>31</td>
<td>Marketing</td>
<td>First baby</td>
<td>Military fitness Walking Swimming</td>
<td>Walking Swimming Yoga</td>
</tr>
<tr>
<td>Gladys</td>
<td>46</td>
<td>Finance</td>
<td>First baby IVF</td>
<td>Swimming Cycling</td>
<td>Walking 52</td>
</tr>
<tr>
<td>Claire</td>
<td>39</td>
<td>Marketing</td>
<td>First baby</td>
<td>Walking Gym Ashtanga Yoga Netball Running</td>
<td>Walking Yoga Gym Aqua-natal</td>
</tr>
<tr>
<td>Bethan</td>
<td>34</td>
<td>Nurse</td>
<td>Third baby</td>
<td>Running Personal trainer Netball</td>
<td>Netball Personal trainer Running Swimming</td>
</tr>
<tr>
<td>Ruby</td>
<td>32</td>
<td>Web designer</td>
<td>Second baby</td>
<td>Aerobics Running</td>
<td>Aerobics Running</td>
</tr>
<tr>
<td>Pauline</td>
<td>27</td>
<td>School Alumni officer</td>
<td>First baby</td>
<td>Horse riding Running Instructing aerobics</td>
<td>Horse riding Running</td>
</tr>
<tr>
<td>Jane</td>
<td>42</td>
<td>Journalist</td>
<td>First baby</td>
<td>Zumba 53</td>
<td>Zumba Yoga Aqua-natal</td>
</tr>
<tr>
<td>Darcy</td>
<td>28</td>
<td>Dance teacher</td>
<td>First baby</td>
<td>Ballet Gym</td>
<td>Ballet Yoga Aqua-natal</td>
</tr>
<tr>
<td>Lucy</td>
<td>31</td>
<td>Civil Engineer</td>
<td>Second baby</td>
<td>Aerobics Cycling Running Horse riding</td>
<td>Aerobics Cycling Running Horse riding</td>
</tr>
</tbody>
</table>

Table 5-1 Demographic details and exercise behaviour of the 10 women.

52 Gladys pregnancy exercise was the only one specifically restricted by medical advice following pregnancy complications.
53 Zumba is a widespread Latin-inspired dance-fitness program.

101
All of the women lived within the South East of England, and were interviewed at a time and location of their choice. All bar one were in a supportive relationship; they were all heterosexual, white Caucasian and able-bodied. While there was a wide age range the average age was 34 which equates to that of the national average for pregnancies in the UK (HSCIC, 2015). These narrow demographics were not a deliberate result of the recruitment strategy that had purposively tried to widen participation by locating posters in public leisure centres as opposed to private gyms or classes. This was partially addressed by drawing on internet pregnancy forum as an additional data source [4.2.3]. Occupation has been listed because several of the women worked in a sport related role, and this also highlights that they all worked in semi-professional or professional roles. The study coincided with the London Olympic Games which has been considered to have raised the profile of sport within the UK and resulted in a short term increase in participation (Weed et al. 2015; Sport England, 2015). Over the course of the study there were several news items regarding sport and pregnancy including two from the Olympics. Several of these items were raised by the women during data collection [5.4.1]. These are summarised in Appendix 12, and were drawn on during the analysis as an additional data source. This was particularly fruitful in respect to developing and redefining the category of the pregnant self.

5.3 The pre-pregnant self

As they reflected on their past experiences of exercise the women described four common features that influenced their transition through pregnancy and decisions regarding exercise. This section explores these pre-pregnancy contextual factors or antecedent conditions that were:

- Having an exercise identity
- Having a supportive partner
- Knowing your body
- Anticipation of change

54 While the sample lacked diversity i.e. in respect to class and ethnicity and only gives voice to women who were successfully able to engage in regular exercise this has enabled an in-depth insight into the experience of exercising in pregnancy. To see whether the results of this research have wider application further research is required to gain more diverse perspectives.
Having an exercise identity

In describing their current exercise activity the women commonly drew on what they had done prior to becoming pregnant.

... (Katherine, interview 1)

... (Pauline, interview 1)

It was evident in how the women spoke about exercise that it was an integral part of their pre-pregnant self. This manifested in various ways, while some placed value on general wellbeing or athletic prowess others drew more on the impact of exercise on their body image. As highlighted in the last two quotes, being active was often associated with being healthy. In describing how they prepared for pregnancy this also included reference to weight control, having a healthy lifestyle, like avoiding smoking and alcohol and eating ‘healthy food’.

While some women described having an aptitude for sport from an early age this wasn't the case across the whole sample, and in contrast others had developed an interest in exercise later in life.

... (Gladys, interview 1)

... (Ruby, interview 1)

... (Lucy, interview 1)

As exemplified by the quotes above, four of the women (as identified in left hand column of Table 5-2) had described themselves as ‘not good at sport’ or ‘not naturally sporty’ but
were similarly motivated to maintain an activity regularly when they encountered something that they enjoyed. These four women each expressed a deep dislike of PE in school, often associating this with not being good at sport. As they grew older each of them encountered a form of exercise they enjoyed, often initiated by going with a friend or family member. This led to exercise becoming a regular component of their lifestyle and an integral part of their self-identity.

While the women described different individual relationships with exercise, whatever their motivation all of them described exercise as something that gave them pleasure and enhanced their self-esteem. This recurred frequently through the interviews and is highlighted by the selection of reasons the women gave for exercising amalgamated in Table 5-2.

<table>
<thead>
<tr>
<th>The women who described themselves as ‘not good at sport’ or ‘not naturally sporty’</th>
<th>The women who described themselves ‘as always being sporty’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well yes my perspective of it is swimming makes you feel good…. you know physical exercise helps you feel happier as well, you know. (Gladys, interview 1)</td>
<td>And the walking which I did enjoy more so because I had my friend doing it with me. I miss the Brit fit but I knew I would have to give that up. (Emma, interview 3)</td>
</tr>
<tr>
<td>I think there is a balance with having a benefit and getting enjoyment from it and if you enjoy exercising may be you’d be more likely to consider other types. (Ruby, interview 2)</td>
<td>I really enjoyed it because you’re weightless in the water. I found it really relaxing and something that was quite nice to do of an evening after work. (Katherine, interview 2)</td>
</tr>
<tr>
<td>It was belly dancing that was for this feature and it was fun and also it was good to be with another bunch of ‘divvies’ falling over and stuff like that. (Jane, interview 1)</td>
<td>I’ve never really done it for health but then I think I’m a naturally healthy person, I do it because I enjoy it, it's not for a reason. (Darcy, interview 1)</td>
</tr>
<tr>
<td>I know that I will always be someone who exercises for me, that's not really an issue. Long-term I’d never stop being active and being healthy (Lucy interview 1)</td>
<td>I'm still loving exercise and fitness when I stopped teaching I, went back to being someone who did it for enjoyment rather than a living. (Claire, interview 1)</td>
</tr>
<tr>
<td>I went out for a run and did, 20 min non-stop I don't feel like I'm pushing myself and I'm enjoying it. (Bethan, interview 1)</td>
<td>I like the way being fit makes you feel. I enjoy the exercise while I’m doing it and when I do the classes at the gym. (Pauline, interview 1)</td>
</tr>
</tbody>
</table>

Table 5-2 How enjoying exercise was an important motivating factor.
The quotes\textsuperscript{55} chosen for the table include an example from each woman and highlight that despite their different approaches to exercise, enjoyment was a critical factor.

The importance of needing to enjoy exercise was also evident in how women described changing an activity in pregnancy because they didn’t enjoy it any more [5.4.1]. The women described gaining a sense of achievement through exercise. For some this was through competing in an event such as running a marathon (Pauline, Katherine, Ruby), performing dance (Darcy) or playing netball (Claire, Bethan); while others had achieved different goals, such as losing substantial amounts of weight through combining exercising and dieting (Jane, Gladys, Lucy and Bethan).

For several of the women, exercise and sport had also been part of their past careers Ruby, Claire and Pauline were qualified fitness instructors, Claire also worked in the fitness industry in marketing and Darcy taught ballet dancing. A common characteristic across all the women was how their descriptions of exercise suggested it was an integral part of their self-identity\textsuperscript{56} that contributed positively to their self-esteem. To some extent Jane was the exception to this and did not consider herself as a sporty person [Box 2-1]. She had commenced exercising following a health scare; her motivation was quite different as demonstrated in the following quote.

\textit{When I was diagnosed with type 2 diabetes and also told that I might have some problems with my liver function it was a wakeup call in a way......having a baby it's kind of important to be alive for it for a few years....I can't do Zumba anymore but I go swimming instead which helps me keep up my exercise habit. My health is good now a lot better than it was and I'm a lot fitter than I was too. (Jane, interview 2)}

While Jane had initially said she was not really interested in exercise, as the interviews progressed she intimated that exercise was becoming an important part of her identity and demonstrated an element of both surprise and pride in this change. This alternative perspective offered an interesting point of comparison during the data analysis. In addition to the data presented in this section, are various quotes throughout this chapter

\textsuperscript{55} These include reference to exercise both pre and during pregnancy.

\textsuperscript{56} This was determined by comparing the women’s responses about exercise to Anderson’s Exercise Identity scale (Anderson & Cychosz, 1994) which has been widely validated to determine the exercise identity construct (Strachen & Walley, 2013)
that demonstrated how the women portrayed having an identity as exercisers, Table 5-3 highlights this further.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has numerous goals related to exercising.</td>
<td>I set myself a goal that I'd do some jumping next year but I really need to strengthen my legs and being able to get back into my clothes (Lucy Interview 1) I did, 20 or 30 lengths really I was only in the pool for about half an hour. I wasn't pushing it that was my sort of goal really. (Bethan Interview 2)</td>
</tr>
<tr>
<td>Physical exercise is a central factor to self-concept.</td>
<td>It's just that this is the next stage of life and now I've stopped all the 'big' fitness I would normally do. I'm looking forward to getting back to that, because that's who I am (Darcy interview 1)</td>
</tr>
<tr>
<td>Need to exercise to feel good about self.</td>
<td>I felt really good about myself and yet now, it's wonderful being pregnant but psychologically I don't like not exercising and I don't like feeling like a bit of a couch potato (Katherine interview 1)</td>
</tr>
<tr>
<td>Would feel a loss if forced to give up exercise.</td>
<td>I was only walking and it didn't feel like it was enough......... I felt fidgety but my whole body didn't feel like it was being used, and I felt stiff. (Emma, interview 2)</td>
</tr>
</tbody>
</table>

Table 5-3 How the women demonstrated their exercise identity (using characteristics from Anderson & Cychosz, 1994).

Further examples of how they described having common characteristics of an exercise identity included their descriptions of exercise as something they did regularly, enjoyed, prioritised in their life and missed if something prevented them from exercising. In some ways this was also reflected in how the women wanted to maintain their exercise habit, recognising that it would be difficult to re-establish after the birth if they let it go in pregnancy, exemplified further in [5.4.1].

### 5.3.2 Having a supportive partner

The women frequently expressed the importance of having a partner who understood or was supportive of their exercise habit as exemplified by the following quotes from Ruby and Lucy.

My partner goes running or to the gym when he can fit it in, he understands the importance of exercise to me. It really is important to have a partner who 'gets it' otherwise I don't think we'd be together. I think active people probably end up with other active people. (Ruby, interview 1)

Luckily for me I have James who is really into his sports and a good influence on me in that regard. So since meeting him I am always into something of a sporty nature whether it's cycling or Brit-Fit because we do it together as a couple. (Emma, interview 1)

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57 Drawing from the literature highlights that the more women identify with a particular identity, such as an ‘exerciser,’ the more likely they are to participate in identity-related behaviours (Ajzen 1985). This is rooted in identity theory whereby the concept of the self-as-doer of a given behaviour establishes a link between identity and behaviour (Houser-Marko & Sheldon, 2006).
Like Emma, several of the women (Claire, Katherine, and Lucy) described exercising with their partner as an important part of their relationship prior to the pregnancy. While the others didn't exercise with their partners, several described, having a shared interest in exercise as an important part of their relationship (Darcy, Ruby, Pauline, and Bethan). The exceptions to this were Gladys, who was single, and Jane who, as previously described, had an alternative affiliation with exercise. Exercising often formed an important part of their relationship in that it was something they shared such as going for walks or running at the weekend.

If I need to get out I'll just go for a walk whereas James will go off with our Brit fit gang, I'll do a lap of the park that sort of thing. (Emma, interview 1)

Sunday we do our walk but we have been doing more flat walks now we don't do the sort of hills we used to .... I felt a bit tired and we rested and then I put the dog lead on my boyfriend on the back of his jeans and he pulled me up the top. (Claire, interview 1)

The women's transition through pregnancy had the potential to impact on their relationship with their partner in a variety of ways. Specifically with respect to exercising it limited some of the social activities the women were able to continue doing with their partners. In addition to this, partners had a significant influence on decisions regarding whether to continue with their usual activities.

At first he said he didn't actually want me playing netball but that was ignorance, he just hadn't thought about why, he hadn't looked it up. As I'm sure many husbands would do, say something that they haven't looked up haven't researched it like I would have done. (Bethan, interview 1)

He thinks it's good but he's obviously, protective of me and the baby and doesn't want me to overdo it. ....I listen to him so, if he feels that I am [doing too much], I'll stop and think, OK am I? (Claire, interview 1)

This impacted on the woman’s autonomy with respect to making decisions regarding exercising in pregnancy. Embedded within this was an evolving realisation that women were now responsible for not only their health but also that of the baby in which their partner evidently held a vested interest. This revealed different dynamics within women’s
relationships, with some partners categorically forbidding them from doing something, to others trusting their judgement\textsuperscript{58}.

My husband was really great about that he was really trusting I think I said that to you before, he trust my instincts and my judgement. (Pauline, interview 3)

On deeper exploration it seemed quite common for the women who were passionate about exercise to have partners who felt the same. The changing dynamics of their relationships were further adjustments the women had to negotiate as they made the transition through pregnancy and lost some of the stability of their past self.

In the sense of everything getting bigger I still want my legs to be toned, I still want my partner to find me attractive, he does of course, well he says he does. (Claire, interview 1)

When you have a baby you don’t want to become a mumsy blob, I still want to dress up and go out as a couple and feel good about myself … if you can't put your clothes back on after having a baby you're not going to feel yourself. (Ruby, interview 3)

They say he doesn't like me being pregnant. He thinks I look terrible and they seem to put a lot of pressure on themselves if they can do after pregnancy things to tone up really quickly. (Freya, interview FE).

Some of the women expressed the view that the dynamic of their relationships was an additional motivator to maintain their body image and physical attractiveness. As Freya highlighted (above), this can result in unrealistic expectations for women to regain their pre-pregnant figure. This raised a potential dichotomy with partners wanting women to be cautious regarding exercising in pregnancy for the sake of the baby while simultaneously the women are motivated to maintain their ‘attractive’ figures for their partners. On several occasions as highlighted above this impacted on decision-making and is explored further in 5.5.

5.3.3 Knowing your body

In describing what influenced their decisions, the women often drew on their previous exercise experiences.

\textsuperscript{58} This has parallels with other birth choice literature such as ‘She can choose as long as I’m happy with it’: a study of fathers’ views of birth place (Bedwell, et al. 2011), this highlighted how their views were dominated by an overwhelming trust in the medical environment.
If you’ve done it before you’re quite comfortable doing it, maybe a little bit more reserved when you’re pregnant, but you still carry on doing it, but if you didn’t do it before there is no way you're going to do it when you are pregnant. (Emma, interview 2)

I know my body, I’m very in tune with my body, I know it inside and out and I love that fact that I know my body so well I know how to listen to it I know how to judge it I know how I'm feeling so I go by how I feel. (Darcy, interview 1)

Experiences of exercising pre-pregnancy equipped the women with a valuable insight into their bodies’ capacity that fostered a sense of confidence in the decisions they made regarding exercise in pregnancy. However, not all the women expressed knowing your body so confidently and found the recommendation to listen to their body difficult to apply in practice. A particular concern, was not knowing when they could push themselves and when they should hold back because of the pregnancy.

It takes a very confident woman who has been exercising in the past to have the confidence to exercise. If you haven't and you don't know your body it's quite hard just listening to the advice in the media and the general public. (Frankie, interview FE)

This suggests that women who don’t usually exercise may find ‘listening to your body’ difficult advice to follow as they have little to compare it with. Another example of knowing your body came from the three women (Ruby, Bethan and Lucy) who had, had a baby before.

When you have number two child you suddenly realise, hang on I'm carrying a toddler around with me all day so I think carrying the shopping is okay (laughs). I think something completely alters with first pregnancies, there is a big belief that you've got to be very careful and people are too cautious and too careful. (Bethan, interview 1).

The first few runs when you know you're pregnant it's a weird feeling makes you wonder if it's okay, you need to get the confidence that all is okay…. I had much more confidence this time as I had exercised in my last pregnancy. (Ruby, interview 1)

One reason to exercise is….with my first child I really ballooned and it took me a while to get my weight off again. (Lucy Interview 1)

These women described how their past experience and knowledge gave them a degree of confidence that instilled self-assurance to exercise in subsequent pregnancies. In their first pregnancies they considered they had been over cautious at times. In contrast they now had a greater confidence in their bodies’ resilience and ability to cope with their
regular exercise regimes. They also revealed a stronger determination to avoid excessive weight gain, having previously experienced how difficult this made regaining their pre-pregnant weight (5.4.1). The women all described how their pre-pregnant self had been partly shaped through exercise and subsequently how their decisions to exercise were motivated by the desire to maintain this facet of their self-identity.

5.3.4 Anticipation of change
An integral part of the substantive theory is the identity conflict women experienced as they made the transition through pregnancy [discussed in depth in 5.5]. The degree to which life events such as pregnancy cause identity conflict can be influenced by the extent to which they are anticipated and the amount of control the individual has over the transition. Therefore, the perceived degree of control the women had with regard to becoming pregnant was considered. While all 10 women described their pregnancies as planned, it was common for this to have either taken much longer or to have happened more quickly than they had expected. Two of the women had used exercise to lose weight and considered this had facilitated conception and for one this was after several attempts of in vitro fertilisation.

In maintaining the focus on women’s decisions regarding exercise in pregnancy it was considered beyond the scope of this study to explore the factors influencing the decision to become pregnant. It is, however acknowledged that the reasons for and circumstances within which conception occurred could potentially influence decisions to exercise as illustrated by the following quote.

Yes, it's not easy to get pregnant so when it happens you have got to allow your body, to do what it needs to do. It's a difficult decision but for me because it took so long I'm very protective, I don't want to risk anything. (Clare interview 1).

Similar to Clare, there was a pattern in the data that suggested women who had experienced difficulty conceiving (Bethan, Gladys) were more cautious with respect to the intensity of the exercise they engaged in. Likewise, the women who had experienced a miscarriage in the past (Lucy) or had friends who experienced miscarriage (Claire, Emma, Darcy, Pauline) following exercise did describe how this made them more

59 The role transitions literature highlights how progression through a transition can be affected by the extent to which it was anticipated or planned (Allen & van de Vliert 1984).
cautious in the first 12 weeks of pregnancy [presented in 5.5]. None of the pregnancies in this study was described as unplanned and it was, therefore, not feasible to explore how this might impact on the decision-making. It is possible that the transition to pregnancy and its impact on exercise behaviour may differ for those whose pregnancy is un-planned. Whether this might make women more or less cautious regarding pregnancy activities is speculative and likely varies dramatically with individual circumstances.

Prior to conception, the women had developed some predetermined ideas about their exercise behaviour in pregnancy. These were influenced by social interactions and more specifically drawing on the experiences of friends and family members’ pregnancy behaviour often using them as role models.

Especially having seen her do it you think well if she can do it I'm sure I can so that's ok. I’ve seen her do that [cycling]. We went up the lake district and did a whole load of walking which entailed a bit of climbing up some hills and over some walls so that was ok, we were both pregnant. (Emma, interview 2)

Before I became pregnant I thought I would give it [running] a go. I wouldn't push myself and if anything hurt I would stop straightaway. (Pauline, interview 1)

I always knew, that when I did get pregnant I would still like to carry on with keeping active like that lady I said I saw in the gym, who I thought well good for you I would like to be like that one day. But I hadn't sat down and thought these were the exercises I'm going to do and the exercises I'm not. (Katherine, interview 1)

As exemplified by these quotes some of the women had envisaged exercising in pregnancy but maintained an open mind as to what might be feasible in reality.

It could be contended that a limitation of this data was that it was collected retrospectively during the woman's pregnancy. However, the intention is to conceptualise the women's perceptions of their pre-pregnant selves to enable an exploration of how their decisions to exercise might have been influenced by these antecedent conditions.

5.4 Identity transition

The ensuing sections demonstrate how through the course of their pregnancies the women drew on exercise in respect to two key identity domains maintaining the exercising self and constructing the pregnant self. Embedded within this transition was the process of cultivating resources to support their decision-making.
5.4.1 Maintaining the exercising self
Section [5.3.1] demonstrated how despite the women in this study having different relationships with exercise they all revealed characteristics that aligned with having an exercise identity. This section develops this further to explore how pregnancy triggered an altered sense of self-identity on several dimensions related to the physical body. This resulted in the women wanting to maintain their individual identity by Maintaining the exercising self, which encompassed a simultaneous desire to normalise their transition into motherhood. It became apparent from the data that exercise was a resource they drew on to meet both of these desires.

I think there’s a big thing that you feel, well I felt anyway that, I really didn’t want to lose my identity and just become a pregnant woman. Then I may not be me anymore and that’s a big part of my life, so I really wanted to maintain as much as possible and I’m pleased I have and I think that was a large motivator [to exercise]. (Pauline, interview 3)

To get back to normal to be me again I don’t want to look in the mirror and see somebody else I want to look in the mirror and see me. (Darcy, interview 2)

As highlighted above, the women commonly referred to a sense of loss of their former self that was captured by the code unanchored identity. Consequently, the key reasons to exercise were embedded within the women’s desire to maintain certain elements of their unique pre-pregnant self as they made the transition through pregnancy to motherhood. When describing their reasons to exercise the women often described their bodies in two dimensions, both as an object (exercising for body image) that could be viewed by others and also in terms of their growing awareness and appreciation of their bodies’ functionality (exercising for self-esteem). They drew on exercise as a way to maintain a degree of control over both dimensions. While these two concepts are closely intertwined, for clarity they will be discussed sequentially followed by an exploration of

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60 In this thesis the term normalise is used to describe the women’s desire to fit in with their pregnant peers and social ideologies of pregnancy it also incorporates having an uncomplicated pregnancy and birth and maintaining a sense of regularity in their life and self-identity. This is explored further in [5.4.1.2] and summarised in Table 5-4.

61 Objectification and body functionality are social theories that describe how women see their bodies and have been associated with prenatal health behaviours, and maternal mental health (Rubin and Steinberg, 2011). Used initially as conceptual levers in the data analysis these helped define the properties and dimensions of the subcategories; ‘Exercising for body image’ and Exercising for self-esteem’. 
how women simultaneously constructed their pregnant self as they made the transition to motherhood.

### 5.4.1.1 Exercising for body image

This section illustrates how from the perspective of the objectified body, maintaining an acceptable body image was a fundamental motivator to continue to exercise.

I exercise to not be fat (laughs), and also to stay healthy, I haven’t had any major problems. I didn't want to put on more weight than I needed to and that makes me feel good. I feel like such a giant blob at the moment your body is changing, to exercise makes you feel like you’re doing something to help yourself. (Ruby, interview 2)

It’s because I want to have my fitness back I know if I put on lots of weight then that will really suffer. But then also I don’t want to be really fat and I don't want to struggle to lose the weight. (Pauline, interview 2)

While they accepted the inevitability of their abdomens expanding the women were keen to maintain a sense of control over the process. They appreciated that they would put on a certain amount of weight but were eager not to put on more than was necessary. This was both to maintain what they considered an acceptable body image through pregnancy and to facilitate regaining their pre-pregnant form, particularly as they recognised that excess weight would be difficult to lose after the baby was born.

It seems in first pregnancies people tend to put on a bit of weight maybe it's because they've not done it before, they think ‘oh I'm pregnant I can eat for two’ or whatever. Then it seems to be the ladies that are second time round that are like ‘oh no I can't put on the weight that I put on last time’ and that’s when they exercise. (Darcy, interview 3)

I was the fittest I've ever been and the lowest weight in a good way, so I felt much more confident and also I really didn't want to lose it with this pregnancy I'm really conscious, not that I'm going to be silly but I really don't want to put on so much weight with this pregnancy. (Bethan, interview 1)

Regaining their former self with respect to their weight was an important motivator to continue exercising. The women who had had a baby before (Bethan, Lucy and Ruby) each expressed a determination not to put so much weight on as they had in their previous pregnancies. Furthermore, three of the women had lost over 25kg prior to conception and found it particularly difficult to come to terms with the inevitable weight gain in pregnancy.
I am appalled at the fact that I've put on weight you know I use to be really toned and now I've got this nice little um what do they call it? ‘A muffin top’, you know I just can't bear it putting on weight. (Gladys, interview 1)

I’m sort of thinking I can still lose weight, because there’s plenty of me and I think I don’t want to gain any weight. Then in a way when I have the child I will be slimmer because I would have lost [the pregnancy] weight. (Jane, interview 1)

Gladys and Jane were expecting their 1st babies and had facilitated conception through their weight loss, while Bethan was having her 3rd baby. The descriptions of previous weight loss echoed a sense of personal achievement and for the women was integral to their self-identity. However, it was difficult to disengage from conceiving weight gain as bad. Underlying the ideas presented here is the basic principle that appearance is located on an aesthetically pleasing continuum and has a significant impact on self-identity and social experiences. The mass media play an important role in shaping public understandings of health, with obesity attracting extensive media coverage.

The reason for doing it is the well-being side of it, it's also about keeping a certain amount of tonedness, and the whole reason is for me, the baby, the birth, also it's about my self-esteem and in the sense of everything else getting bigger ……I think there’s lots of reasons why some women decide not to if they are not overweight, life’s all right thank you very much. Why would they want to exercise, what’s the point if they are not overweight? (Claire, interview 3)

Despite Claire describing a range of reasons why she exercises she concludes by intimating that women may feel there is no need to exercise if they are already ‘slim’.

The data consistently sustained how body image was one of the principal reasons for investing time and energy in exercising. While pregnancy might be seen to legitimise specific and inevitable physical changes the women universally revealed that they still harboured concerns about ‘fatness’. This is typified by the following quote from Katherine who, had previously, stated (Excerpt Table 5-6), that her exercising was not about controlling her weight gain nevertheless she was eager to ensure people realised she was pregnant not fat.

62 This perception of fat as bad continues to be reinforced in the media and social stigmatization of obesity seems to be strengthening and globalizing (Brewis, 2014). Through interpretations of how the media portray obesity Patterson and Hilton (2013) suggest this may contribute to both societal normalisation and the stigmatisation of obesity, simultaneously threatening to harm obese individuals and undermine public health efforts to reverse trends in obesity.
I’m actually pregnant, this isn’t a fat tummy. …...We went on holiday when I was 17 weeks and I wore bikinis on the beach. I didn’t really have an established bump but just a bit of a tummy and I really pushed it out to make it a baby bump. I kept saying to James do you think people think I’m fat? Whoever we spoke to, I would always drop in because I’m pregnant just in case they wondered whether they just thought I was a bit fat. (Katherine, interview 3)

It [maternity top] makes me look like a pregnant lady rather than a fat lady which is quite nice. (Jane, interview 2)

As previously highlighted, the concern regarding weight gain was particularly evident for those women who had previously been overweight and recently lost substantial amounts of weight by investing in exercise. Like the other women it was important to Jane that she looked pregnant not fat, particularly as prior to losing 20kg with Weight Watchers, she had experienced the opposite of mistakenly being thought pregnant when she was actually overweight. This ‘feared self’ was re-enforced when she was quite heavily pregnant, illustrated by the following quote.

She said “That’s a nice dress”, and I said “Yes it’s a maternity number”, “Oh” said his wife, “Are you pregnant?” “What you mean he didn’t tell you?” (Jane, interview 2)

The women often judged their changing appearance in a framework of three sequential stages as exemplified in Figure 5-1 overleaf. This reflects how the women drew on the temporary nature of pregnancy and their ongoing self-regulation of their body changes. Returning to their pre-pregnant self was a frequently reoccurring concern particularly the desire to ‘get your body back’ (Ruby) and suggests decisions were partly influenced by these contemplations of their future selves. Despite their expanding pregnant bodies the women were motivated to maintain what they perceived as a socially desirable ideal and demonstrate their ability to maintain the discipline of self-control.

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63 The concept of ‘feared self’ draws from Marcus and Nurius’s (1986) theory of possible selves which proposes how perceived projections of an individual’s identity impact on cognitions and behaviours. Similar to the concept of an actual and ought self[5.4.1], these organised self-views are derived from representations of the self conceptualised through self-reflection and anticipated expectations from others (Stryker & Serpe 1994). These have been classified as the selves that individuals expect to become (expected selves), would like to become (ideal selves) or are afraid of becoming (feared selves) (Manzi, et al. 2010).
Figure 5-1 The three sequential stages women used for judging changing appearance

As highlighted in Figure 5-1 there is a desirable pregnant body form that the women frequently described as; ‘pregnant not fat’ with a ‘neat bump’ and ‘toned arms’. This continued after the birth with external pressure to regain their pre-pregnant self.

There is so much pressure to lose weight and be slim, things in the media like Kate and William and how slim she looked after having her baby. Also I have been watching on the baby forum and people post their weight loss on there too. (Lucy, interview 2)... they’re all posting their weight loss and how well they’re doing and I’m thinking I’m hopeless compared to them, I’d like to think I’m probably fitter than them even though I’ve not lost so much weight. (Lucy, interview 3)

This highlights the tensions women faced in trying to negotiate competing social ideologies of maintaining feminine sexuality, such as avoiding being fat while at the same time being a selfless mother discussed further in [5.3]. Drawing on the concept of body image being located on an aesthetically pleasing continuum it was evident that pregnancy threatened to move them towards the less desirable scale. The data demonstrates that they drew on exercise as a resource to maintain some control over these changes. As evident within the quotes in both this and the following section, the stigma around ‘fatness’, was a prevailing concern, frequently raised by the women. This is reflected in both
professional and lay discourse, its impact on decision-making is explored in more depth in [5.4.3]. Maintaining control over their pregnancy weight gain and body image emerged as a significant motivator to exercise by all the women interviewed.

5.4.1.2 *Exercising for self-esteem*

With respect to their body functionality exercise offered numerous potential benefits, as highlighted within the quote by Claire (pp. 114), *the whole reason is for me, the baby, the birth, also it’s about my self-esteem*. Integral to maintaining their self-identity these motivators to exercise extended beyond body image and stemmed around a sense of both physical and psychological wellbeing inextricably linked to their self-esteem.

As highlighted in Table 5-2 a key motivator to exercise was the enjoyment women gained from it which was reflected in the women’s experiences of having to adjust their activities because of the pregnancy.

> I’m really missing my bike, I miss the feeling in the morning when you get on your bike and go to work and you feel fresh and vibrant. I miss the experience, which seems bizarre. (Gladys, interview 1)

> I’m not enjoying running anymore. So I switched to something a bit more low impact. I’m sure you could carry on it’s not that I thought it was dangerous. (Ruby, interview 2)

Pregnancy posed a significant challenge to the women’s ability to maintain their usual exercising habits often resulting in them modifying and adapting their behaviours. Several of the women had given up their usual activities because they no longer found them enjoyable, which was particularly true of running that became increasingly uncomfortable as their abdomens expanded.

> In the beginning it was the whole feeling of being sick and sluggishness which I combated because all I did was eat and towards the end it was the pelvic pain. (Emma, interview 3)

In the early stages of pregnancy nausea and extreme tiredness had a major impact on some women’s exercising intentionality resulting in them reducing or ceasing certain activities. Later in pregnancy their expanding girth made exercising more difficult and several
complained of pelvic pain or SPD\textsuperscript{64}. Despite these challenges\textsuperscript{65} exercise offered them a means of establishing that they were still in control and that pregnancy wasn’t going to change their life disproportionately which reinforced their intrinsic motivation to exercise. Maintaining this degree of control and continuity of self-identity extended through the pregnancy and into their tentative images of their future selves.

I went for a run at eight o'clock (pm) and I felt so much better for doing it just emotionally and physically, that was a, 20 min non-stop run. So from that point of view it made me feel quite good I think it actually makes me feel more in control,...I hate the thought of pregnancy, getting in the way of things that I was doing before. (Bethan, interview 1)

I needed to slow down, and I need to do other things [instead of netball and running] .... So I do Aqua on Monday then I do antenatal yoga on a Wednesday, ...Thursday they do a relaxation thing at the leisure centre then on Friday sometimes I'll go swimming it depends if I've been to the relaxation or not, Saturday I'll do yoga ....and then Sunday we do our walk. (Claire, interview 1)

I mean for me it's my desire to go back to exercise in order to go back to the same pattern that I was in before I don't like to feel like my life has massively changed although it will of course. (Gladys, interview 1)

It was apparent that their desire to maintain a degree of normality in their life provided a strong motivation to continue to exercise both during pregnancy and after the birth. The sense of control continuing to exercise fostered, was not just about their body image but their self-identity as ‘healthy’ and as ‘an exerciser’. Pregnancy challenged this in several ways and they drew on exercise as a stabiliser while at the same time reconstructing their self-identity as they negotiated pregnancy and impending motherhood.

I don't think I'm the average Joe as it were, because of my life and time as a fitness instructor I had an interest and passion in health and exercise so I don't think that that's the norm. I've probably made more of a conscious effort and approach of things because I have a deeper understanding of exercise than average Joe or Joanna. (Claire, interview 2)

The women gauged their activities levels as being above what they perceived as normal or average, which contributed to their self-identity as exercisers. They mainly did this by comparing their activity levels with friends and family and against media and public

\textsuperscript{64} SPD is an abbreviation for symphysis pubis dysfunction a common pregnancy condition that causes excessive movement of the pubic symphysis, as well as associated pain with movement. It is thought to affect up to 1 in 4 pregnant women to varying degrees and is now professionally referred to as pregnancy related pelvic girdle pain.

\textsuperscript{65} These findings reflect those of other studies into barriers to exercise in pregnancy [2-7, p38]
opinion. This was an important consideration in the analysis and interpretation of the data that draws from a group of women with a stronger motivation to exercise than the general population of pregnant women. This enabled them to draw on their previous experience of exercise which was an integral part of their exercising self [5.3.3].

Managing the physical changes of pregnancy was another example of maintaining control in pregnancy whereby women purposely used exercise to alleviate several of the common symptoms of pregnancy such as nausea, tiredness, backache and to maintain a sense of normality and wellbeing.

At the moment, because I’ve been feeling really sick, I find some fresh air at lunchtime helps so I have been going for a walk at lunchtime before I eat and that seems to take the edge off my queasiness. (Lucy, interview 1)

I would say (treating backache) that’s been a benefit as well, I haven’t had any of the common complaints people talk about when they’re pregnant. (Katherine, interview 1)

Like Lucy, Pauline and Ruby also reported that exercising made their nausea better, Bethan and Katherine suggested it helped them sleep better and Emma and Katherine found that yoga helped relieve the back pain they experienced in pregnancy.

Some reasons to exercise are health, people tend to focus on the here and now not very long-term goals. It's about maintaining yourself and your health it is good for the baby and recovery afterwards. I think the benefits of exercise in pregnancy are huge and can help you cope with labour and recovery. (Lucy, interview 1)

General health enhancement, both for themselves and the baby, together with the belief that it would prepare them for the challenge of labour, were further motivators to exercise.

I’ve always been of the mind-set of I want to indulge my body when I'm pregnant in terms of prepare it for what it's about to do I like the saying of 'your preparing for a marathon' and that the birth, due date, is the marathon day so what you put into your body and what your body goes through in those 9 months is what you will get out, is what will aid you in the labour experience. (Darcy, interview 1)

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66 As discussed in 2.1 research has been unable to determine an accurate assessment of prevalence of physical activity during pregnancy (Smith & Campbell, 2013). Drawing on the literature available, professional experience and pregnancy forums regarding exercise; suggests that their perceptions are correct and that the study group exercised more than the average pregnant women.
but also because I know it will be very good for me as a pregnant woman to keep active because just from what I know from people that are very active they do seem to have a better time in labour. You need to be fit from what I understand, it’s a very intense experience and you need to have stamina and strength to get through it so if I’m maintaining myself with stamina and maintaining my strength. (Jane, interview 1)

I took yoga up simply because I thought I would have a better labour doing it. It did help me with the breathing but that was probably about it. But the way the woman sold it to you was that, if you do yoga you'd have a better Labour, that's just not true. (Emma, interview 3)

It must be good to exercise for the birth, somebody told me that Labour is like running five marathons. So to go into that having sat down for nine month; it's going to be really hard and you’re not going to have the strength to push the baby out. So it's going to be much more difficult to cope with. (Pauline, interview 2)

The final rite of passage is the birth itself, for which women described how successful preparation such as maintaining fitness could facilitate the birth process. In addition to some attending parent education classes, the women used exercise to help prepare for birth; this was particularly evident with respect to pregnancy-specific classes such as yoga and aqua-natal sessions, although other women maintained their physical fitness in preparation for birth through their usual exercise regimes, such as running, Zumba or swimming.

There was an expectation of reward for the investment they had made in exercise and protecting these investments by maintaining fitness was a strong motivator to continue to exercise. This expectation of payback from investing in exercise was exemplified by Emma, who felt indignant because despite having gone to pregnancy yoga classes, and walking regularly she had a difficult birth that ended in a Caesarean section. Likewise, Ruby developed vulvar varicosities that she considered ‘really unfair in someone who is active and not overweight.’ To some extent both felt cheated.

The women had invested in exercise and expected a payback for their efforts. This manifested with respect to both how exercising affected the women’s body image and enhanced their sense of health and wellbeing.

67 This term links to the theory of liminality which is described at the end of this section.
68 Vulvar varicosities are varicose veins in the labia which occur in pregnancy due to increased pelvic blood supply.
Once you start to feel the benefits of the exercise and you get the bug for it, you want to carry that on and if you have worked hard to build up a level of fitness you don’t necessarily want to lose that. (Emma, interview 1)

I was the fittest I’ve ever been and didn’t want to lose it with this pregnancy also I don’t want to lose my fitness, which has taken me about a year to really get back. (Bethan, interview 1)

Well that’s a long-term goal really, you know if I keep doing it when I’ve had the baby I’ll still be in the habit of exercising because I do have another good 5 stone to lose really. (Jane, interview 1)

As exemplified in the above quotes, an important part of this investment was not losing the habit of exercising or the physical fitness they had previously built up through the time and energy they had invested in exercise. Pregnancy posed a temporary challenge to this and they tried to maintain their fitness by continuing to exercise as much as pregnancy allowed with a view to this facilitating regaining their pre-pregnant self. Like any investment this required developing a balance between initial cost or commitment, assessment of risk and payback [5.6.1].

I think it's probably quite late to still be running but hopefully it will mean that when I've had the baby it won't be too long before I can start again. When I do I won't have lost all my fitness but I don't want to injure myself, then I'd have to stop altogether. (Pauline, interview 2)

I'm aware that you don't want to be pushing yourself in exercise either, when you feel uncomfortable even if it was safe to do so. I know I'm prone to pain in my ligaments in pregnancy so I'm worried that if I push myself or continue to do what I was doing before. I'd be more likely get an injury and then I'd have to stop altogether. (Bethan, interview 2)

Key to protecting investments (in exercise), being a motivator to continue to exercise, was the reluctance to lose the benefits they had previously attained. However, this was tempered by the concern of not causing an injury through exercising, particularly as this may further impede their ability to maintain their fitness regime.

While the women frequently spoke about doing what was best for the pregnancy and the baby this tended to be with respect to healthy eating rather than exercise. This was followed up through theoretical sampling by asking the women in subsequent interviews if they were aware of any benefits to the baby from them exercising. None of the women were aware of specific benefits, demonstrated by current research, [2.3] but just assumed it was beneficial.
I’m not sure actually, I really don’t know I suppose I would say it’s mainly for me really I was doing it. I think I wouldn’t have said that I think it’s beneficial to the baby. (Katherine, interview 3)

I think the yoga teacher said that it’s good for baby but I can’t remember why. I don’t know what the benefits could be really? So I know it’s good for the baby but I don’t know exactly how. I think it would be nice, if that was a message that was shouted out a bit more and bit louder it might get more people exercising. (Claire, interview 3)

The revelation that the women were not aware of the potential benefits of exercise for the baby further supported the proposition that exercising in pregnancy was predominantly for the purpose of preserving the women’s self-identity. While some of the women had done extensive research regarding exercising in pregnancy to help inform their decisions it was noteworthy that they had not researched the potential benefit for the baby. Despite this, they asserted that it was good for the baby and promoted a general sense of wellbeing. Although none of the women referred to these, there were several media articles (BBC, 2010; NHS, 2013) reporting research studies on the impact of exercising in pregnancy on the baby during the course of the data generation (Appendix 12). In contrast, most identified an awareness of the articles criticising women for exercising that appeared in the media at the same time that may reflect the different coverage given to such topics. The current focus on risk avoidance within healthcare meant the women tended to receive numerous messages regarding things they should give up such as alcohol, smoking etc. but less on activities that promote wellbeing.

I think a lot of my friends are getting pregnant with number two or number three at that time of life a lot of people can’t necessarily fit exercise in or don’t want to fit exercise in it’s not a priority…I think when all the children go to school, that’s probably when women start exercising again (Bethan, interview 2)

As previously highlighted [5.4.1], the women expressed the belief that they generally exercised more than most pregnant women. They frequently described their exercise time as having me time. Around this they acknowledged that there was an element of selfishness in that they had to make time in their day to exercise but considered that this was important and promoted a sense of well-being and self-esteem. The degree of selfishness they described partially reflected the commitment they made to fitting

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69 This is reflected in current trends in media which tend to focus on sectionalising risk and uncertainty and reinforcing messages of potential danger and risk avoidance rather than promoting wellbeing (Ashe, 2013).
exercise in their lives, which ties into the concept of investing in exercise and wanting to maintain the benefits.

Also exercise is a time for you to be completely selfish in yourself and just think about you. I know you can do classes for babies, and things like that but then you're bringing them into it if you go on your own and you go swimming, to an exercise class, the gym or a run, you can focus on your own body you're alone with your own thoughts. (Darcy, interview 2)

Like I said, even when I'm not feeling great just normal early pregnancy stuff I still go for a swim and I think that's not allowing pregnancy to stop me living, that's quite important to me. You're not ill being pregnant (Bethan, interview 2)

Bethan’s quote also highlights the women’s shared view of pregnancy as a normal life event rather than an illness. They often compared themselves to other women who didn’t exercise, suggesting these ‘others’ had adopted the culturally sanctioned level of restrained activity or learned helplessness associated with pregnancy [pregnancy as an excuse not to exercise is discussed further 5.4.2]. Their commitment to exercise was further tested by the challenges posed by pregnancy on maintaining their normal exercise patterns that ranged from physical symptoms, the availability of appropriate facilities as well as the dominant social ideology that pregnant women should prioritise rest over exercise [5.4.3]

The eagerness to regain their unique pre-pregnant self extended beyond body image and included an aspiration to reclaim their former fitness and physical prowess. This appeared to be a strong motivating factor for the women to exercise, driving them to negotiate some of the challenges to exercise that they encountered.

I think through exercising quite late in my pregnancy, my core muscles have come back very quickly. And my fitness has comeback, I didn't really lose it properly. Although I was, the fittest I've ever been when I got pregnant. Because that was the time I did my fastest marathon I think that probably helped as well. (Pauline, interview 3)

I'm not naturally like this, my friends make me quite cross sometimes saying ‘Oh look at you back in your jeans’ so quick after I had her. But I exercised every day when I was pregnant it was a conscious decision to want to be able to wear my clothes again I didn't gorge myself on cakes all the time it was a lot of hard work. (Ruby, interview 3)

It was evident that women invested a lot of emotional and physical energy into achieving their commitment to exercise and to some extent saw exercise as an accomplishment
that enhanced their self-esteem. Maintaining their self-identity and **unique normality** was the predominant reason for exercising and inextricably linked to the women’s self-identity as an exerciser. The concept of ‘unique normality’ was adopted to capture the women's desire to maintain both a sense of uniqueness and similarity to other pregnant women, it is discussed further in chapter 6 [6.3.1]. Embedded within this was an element of having invested in exercise and anticipating that this would be rewarded by positive pregnancy outcomes.

A lot of the conversation about exercising in pregnancy was with reference to the transitional nature of pregnancy and the women’s desire to regain their former self after the birth. Another way this was exemplified was in the analytical code **my clothes** referring to the things the women had worn prior to the pregnancy, and the significance of being able to wear those again.

> If you can’t put your own clothes back on after having a baby you don’t feel yourself do you? (Ruby, interview 3)

> I still going to be a Mum but I’m still want to be me still want to wear my skinny jeans and my clothes do you know what I mean? (Claire, interview 3)

The women’s clothes were seen as an integral part of their self-identity that was embedded within their perception of pregnancy changes being temporary and the desire to get back to their **pre-pregnant self**. Whether their clothes continued to fit was one way they monitored their expanding bodies. As will be demonstrated in the ensuing section, having purpose made clothing to exercise also helped legitimise the pregnant self exercising.

The concept of normality arose on numerous occasions throughout the data. It was apparent that women used exercise to normalise the experience of pregnancy. This was evident in numerous ways ranging from conception to their labour birth and early motherhood. The previous two sections included numerous examples of how women used exercise to normalise their pregnancy, the following Table 5-4 draws on additional quotes to exemplify this further.

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70 This is consistent with the literature on self-identity (Davis 1992; Ogle, et al. 2013) described in chapter 6 [6.3.3].
<table>
<thead>
<tr>
<th>Women used exercise to:</th>
<th>Exemplar excerpt from interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normalise weight for conception</td>
<td>Type 2 [diabetes], that’s why I lost 40 pounds and started exercising because I didn’t really move, I didn’t use to move at all really….it's great because I’ve dropped about 3 dress sizes, lost some weight and now I'm pregnant. (Jane interview 1)</td>
</tr>
<tr>
<td>Normalise the common symptoms of pregnancy</td>
<td>Pregnancy changes are not always good changes are they. People get tired, you get headaches, leg pains and backache and I think those sorts of things make people think you shouldn't exercise but for me the opposite is true. It makes me feel better and I think being fit and healthy prevents a lot of the back pains and aches. (Bethan interview 1)</td>
</tr>
<tr>
<td>To have normal birth</td>
<td>I think for me the fact I did keep fit with aqua and yoga meant I really had the stamina and the strength. You know pushing out a baby is really hard work and having the strength that comes from somewhere doesn't it? And the recovery I think I recovered quite well because I was up and about quite quickly. (Claire interview 3)</td>
</tr>
<tr>
<td>Maintain normality in life</td>
<td>I exercise to try and have some form some semblance of my previous life where I exercised a lot, and weight gain really to not let the weight gain takeover and probably to keep some sense of normality. (Gladys interview 1)</td>
</tr>
<tr>
<td>Regain their normal self</td>
<td>We’ve been riding again, I think I have been riding since about 4 or 5 weeks as soon as I felt I could really….It's been lovely a bit of me time a bit of me as a person again a bit of my own identity. It's just nice to do something normal. You sort of lose that when you have a baby (Lucy interview 3)</td>
</tr>
</tbody>
</table>

Table 5-4 Examples of drawing on exercise to normalise their experience

Using exercise as a way of normalising their transition through pregnancy and maintaining the exercising self enabled women to bridge the gap between their pre-pregnant self and their future self as a mother.

The opportunity for facilitating social engagement was another important element of exercise that added to the enjoyment it afforded and the women’s motivation to participate.

> I was pleased I did all the exercise. Just for the mental attitude and being healthy and controlling the weight and stuff and the social side of it to. Like with my friend we could both do it together and that was lovely. (Emma, interview 3)

Some of the women (Jane, Emma, Claire, Katherine) did all of their exercise with other people as part of a supervised class such as Zumba or aerobics, running club or walking with a friend. The opportunity for socialising through exercise was an additional motivating factor. Using exercise as a means of socialising varied across the study sample. Some women preferred to exercise on their own, which tended to be the ones who went running, horse riding, swimming and to the gym (Gladys, Pauline, Bethan, Ruby and
Lucy. All of the women in the study group who already had a child fell into this category. This could be partially due to it being more difficult to attend classes with young children and also that their previous experience of pregnancy gave them more confidence to exercise alone and determine the level of activity that was acceptable to them.

Building on the data presented in the pre-pregnant self this section has highlighted numerous examples through which the women expressed their exercise identity and the values associated with it. The predominant effect of maintaining the exercising self on their decision regarding exercise was to reinforce the women’s motivation and desire to exercise. Figure 5-2 illustrates the key factors identified throughout this section that influenced their decisions and subsequently became integrated within the moderating factors [Table 5-9].

![Diagram](image)

**Figure 5-2 Context and conditions arising from maintaining the exercising self that influenced decisions regarding exercise.**

While the presence of these factors predominantly encouraged exercise as a way to maintain their unique normality this section has also highlighted a few exceptions. Women were motivated to exercise to regulate the physical changes that occurred in pregnancy including enhancing birth experience and post-natal recovery and to maintain a positive body image. In opposition to this was the impact of tiredness, nausea and their
expanding abdomen body, which often necessitated them ceasing or modifying their activities. In addition, while they were motivated to exercise to protect investments they had made in exercise, this was tempered by not wanting to sustain an injury that might prevent them exercising.

5.4.2 Constructing the pregnant self
The women experienced a multiplicity of physical, social and emotional changes that influenced how they navigated this transitional period. Permeating these were the numerous social ideologies, implicit rules and sanctions that guide pregnancy behaviours. This section will explore the women’s experiences of these with a particular focus on how they influenced their decisions regarding exercise during this transition period.

While the women were eager to maintain their individual identity, they were simultaneously driven by a desire to normalise their transition to motherhood. As their pregnancies progressed the women described several ways in which exercise could help integrate them into their evolving pregnancy identity.

I think there are more groups and sort of pregnancy related exercise classes, I do because it's sort of the baby world, the pregnancy world is big isn't it. (Katherine, interview 2)

Giving it up didn't bother me either because I was enjoying knowing I was doing the best for the baby and giving him the best start, so it didn't really bother me. (Katherine, interview 1)

I’m sort of mindful that the baby has needs as well. I’m feeling positive because I’m doing something for the both of us and I want the baby to have the best start. So by keeping fit and eating well I’m not overdoing it with caffeine and stuff just one or two a day. (Claire, interview 1)

The above quotes, capture an important element of doing pregnancy, focusing on what was best for the baby, the women often described the modifications they made to their lifestyle in this way. These also highlight how pregnancy, like other life transitions, involved traditional role expectations and the women generally expressed that they were keen to engage in elements of these social ideologies. As in Darcy’s example [Box 4-3], pregnancy, like a wedding, was often a motivator to getting their bodies in shape alongside what was best for the baby. This is both to be physically fit for labour and
motherhood but also demonstrating themselves as a ‘good selfless mother’ as deemed to be one who prioritises her child’s needs over her own. In this respect exercising is encouraged on the grounds of health benefits for mum and baby that contrasted with the women’s desire to exercise as described previously that was predominantly focused on body image and self-esteem.

It was nice going to the yoga classes with other pregnant women; it's like your all in the same boat. (Emma, interview 3)

If I had, had a friend who was pregnant then I might have gone with her but I didn’t, so I just went by myself and then made friends with people there and they are the people I see now afterwards with the babies. (Claire, interview 3)

I’d like to start aqua-natal classes I really like the idea of doing something different and being with the other mums and it's another way of meeting people. (Darcy, interview 1)

The social element of exercising has already been highlighted [5.4.1.2] as an important motivator for some women, and developing a social network through exercise was another form of doing pregnancy, demonstrating their desire to join the ‘pregnancy world’ as well as maintaining their fitness.

Yes I think it's surprising really once she had us running up and down the pool I couldn't believe I'm running around a swimming pool and I'm pregnant. (Claire, interview 3)

Having pregnancy-specific classes also offered a degree of endorsement for exercising and reassurance that it was a normal or acceptable pregnancy activity. The women’s interpretations of social ideologies regarding exercise in pregnancy closely corresponded; they identified socially acceptable activities as yoga, aqua-natal, swimming and walking. This was underpinned by the notion of pregnancy as a fragile state in that rest should be prioritised over exercise. As evident from Table 5-1 this didn’t necessarily correlate with the activities they actually did when pregnant.

Through the activities they associated with doing pregnancy the women were able to demonstrate the attributes of a good mother in doing what was best for baby and putting

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71 Nash (2011) suggests these tenets of ‘good’ motherhood are prevalent in popular pregnancy guidebooks and encourage women to leave their ‘old’ selves behind as they adopt new identities as ‘good selfless mothers’ in pregnancy. What constitutes a good mother is the subject of much debate in the literature, women’s desire to meet this ideal was evident in the data and widely recognised as a significant in influence on their behaviours (Lupton, 2011, Nash, 2012)
the baby first. Furthermore this offered reassurance towards protecting investments they made in their pregnant self by being assured that they were not putting the baby at risk through their activities. The risk of miscarriage was a persistent concern for the women and a significant influence on their decisions [5.4.2].

It's always easier to make excuses if you don't feel like exercising and pregnancy is quite a good one as they go and people would understand that. Because women know it's an acceptable excuse it's very easy to say I'm so exhausted today. But then if you weren't pregnant you might be tired anyway and if you went for a run you'd probably feel better. (Ruby, interview 2)

Some people say pregnancy is a time when you can lie on the couch and eat chocolate who would want to go running when they are pregnant; it's my excuse not to have to do any exercise. To them it's absolutely beyond belief that anyone would want to go running when they are pregnant. (Fiona, interview FE)

For some, the tendency for pregnant women to be advised to prioritise rest over activity relaxed some of the overt social pressures to maintain a toned slim figure, [5.2.1]. The women often expressed the opinion that pregnancy could be considered a legitimate excuse not to exercise and felt excused72 from some of the standards they set themselves with respect to diet and exercise.

Describing pregnancy as an excuse from some of the overt pressures to conform to the idealistic feminine form exemplifies how normal social ideologies and expectations change as women enter the transitional or liminal state of pregnancy. Instead they have to learn and adjust to a different set of rules under the clinical and social gaze surrounding pregnancy and birth.

5.4.2.1 Influences on decisions from family and friends

In addition to partners [5.3.2], the women identified family and friends influence as having a strong impact on their decisions to exercise. Examples of these ranged from support and encouragement to exercise to reproaches and caution against over exertion.

Ever since we told him he said ‘Oh look after my grandson, what are you doing, you shouldn't be on horses, think of my grandson. (Pauline, interview 2).

72 Similar findings are reported by Clark, et al. (2009), as previously detailed [2.8].
People think I’m mad, even in the office which is crazy because they are all health professionals. I’m careful not to do too much. My family has pretty much given up on me. My mum thinks I do too much but she knows it’s important to me and that I know what I’m doing. (Ruby, interview 2)

Well I definitely have friends who have said ‘what the hell are you doing walking you know you have got to slow down so, outside peer pressure really from other people who are mothers, who have had babies themselves. (Gladys, interview 1)

The gym instructor said to me when you exercise you exercise the baby as well. I want to have a strong heart and lungs and the baby to benefit positively. I hope he will have the same approach to fitness as I’ve got for my parents. I want the best for him. (Claire, interview 1)

These excerpts demonstrate the conflicting messages women received which tended to caution against over-exertion and generated further uncertainty. Nevertheless the women suggested that engaging in an active and healthy lifestyle was a positive attribute for a parent and hoped they would engender a similar philosophy for their future family. For many, these beliefs originated from their own childhood when their interest in exercise was initiated by activities with their parents and later through friends encouraging them to participate in new activities.

Mostly it's been from friends and what they have done in their pregnancies, I have a friend who had a baby in January and she was swimming quite soon up until she gave birth and I thought well she's doing it, it's helped her she's enjoyed it, I'll try swimming. Another friend who is also pregnant has gone to yoga and pregnancy Pilates classes so I thought why not. (Emma, interview 2)

While some women described actively seeking out specific pregnancy related classes or researching their chosen activity, the decision to exercise was often based on circumstance and friends’ experiences. This social endorsement to exercise was something the leisure centre capitalised on to encourage participation in their pregnancy and postnatal classes.

The ‘buggy power’ classes which the mums sign up to have a strong social link on Facebook so it’s quite media driven, mums link together and chat ‘are you coming to the class today etc. (Florence, interview FE)

This also reinforces the earlier suggestion that the opportunities to socialise through exercise can be a powerful motivator to initiating and maintaining an exercise program.
5.4.2.2 *How ‘expert’ opinions influence decisions to exercise.*

Advice obtained from health and fitness professionals also contributed to women’s perceptions of social ideologies and their decisions regarding exercise.

I think those [Dr's and midwives] who give you advice are overcautious. I think there’s an element of ‘CYA’ you know cover your arse; naturally, they’re always going to err on the overcautious side (Gladys, interview 3)

At Zumba yesterday the instructor said if you come again I need a letter from your GP. I went and had a chat with someone else, if I exercise regularly do I really need to go to my GP for a letter because it's one the time going and two they're not really going to say a huge amount. So she went to have a chat with the instructor and they said no it's fine just come along, because I wasn't going to do that. But definitely I think people could do a bit more to encourage exercise. I suppose it is quite low down on people's priority list, when it comes to pregnancy isn't it. (Lucy, interview 2)

While current clinical guidelines encourage exercising in a healthy pregnancy, the women’s experience of health professionals suggested they offered limited information and were likely to err on the side of caution. Drawing from internet discussions, requiring a GP letter is quite common practice, and as highlighted by Lucy, GPs do not have special training to facilitate this. It would be more prudent if gyms made use of the ParmedX screening tool described previously [2.6]. Health and fitness professionals’ reluctance to actively promote exercise may be compounded by a fear of litigation\(^73\) and the lack of clarity in current clinical guidelines as discussed in [2.5] and illustrated below.

You can give people advice but because the guidelines are so vague I think that definitely would put people off exercising if they weren't so bloody-minded if they weren't sure and the doctor was noncommittal and said it was your decision which obviously always is going to be they are almost sort of discouraging sometimes because they don’t want you to take any risk. (Pauline, interview 3)

At the end of the day it's going to be her choice. As a trainer there is so much of this culture of suing people ...... there is a bit of a shift in the responsibility towards them [women] taking that. So you would give them the guidelines but also say that the guidelines are quite old and haven't been updated for a long time. (Florence, interview FE)

People talk to us about lifting weights or whatever and say their gyms are asking them if it is safe and their personal trainers are not so sure what they can instruct them in doing. So in that respect, people are very nervous of giving the wrong advice. (Faye, interview FE)

\(^73\) It was highlighted previously [2.5] that one of the concerns regarding ACOG guidelines was that they may unwittingly set a legal standard (Jette, 2011).
Women often drew on this concept of professionals being overly cautious or not well informed to justify why they didn’t follow the advice they were given. This perception of expert opinion is reflected in the literature [2.7] particularly that health professionals are unaware of current evidence or guidelines regarding pregnancy exercise. There were some exceptions to this, particularly that pregnancy-qualified fitness instructors in the gym were considered better informed. While pregnancy is an area fitness experts can attain specialist qualification, there is currently74 no equivalent directed at health professionals.

The yoga class that I'm going to be doing in January is obviously for pregnant ladies from 14 weeks a lot of classes won't allow you to do it in the first trimester from what I have researched because I was looking into exercise classes until 14 weeks they won't let you do anything. (Darcy, interview 1)

With modern advances in technology women diagnose their pregnancies far earlier75. Two of the fitness professionals surmised that this may contribute to greater awareness of early miscarriages occurring that might have gone unrecognised in the past. They suggested the impact of this could be that gyms and fitness instructors were increasingly cautious about women exercising in their 1st trimester for fear of it being associated with their class/facility. The women also spoke of the high incidence of miscarriage, often quoting that 1 in 4 pregnancies ends in miscarriage for which exercise could potentially be a scapegoat.

I think in the early stages I thought if it happens it happens. But then I got given statistics that one in four pregnancies end in miscarriage and I thought oh that's really high so I didn't tell anybody but once we got past 12 weeks, I relaxed. I think I still exercised in the first part, well yes I did I ran the marathon I don't really remember what I thought but I don't remember worrying about it. (Pauline, interview 3)

While some research evidence [2.6] has suggested a higher incidence of miscarriage in women who exercise, particularly if vigorously, this is contradicted by other studies and to date there is insufficient evidence76 to draw public health inferences. The impact of this is that there are no definitive answers to exactly what is or isn’t safe. This leaves women and health and fitness professionals who offer them advice in a position whereby

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74 This is an area the YMCA are exploring as an avenue for future course development.
75 (Lang & Nuevo-Chiquero, 2012)
76 (Madsen, et al. 2007)
they must draw their own conclusions. This is further evident in the inconsistent advice the women encountered in different environments.

My colleague is very upset she’s not allowed to use the cross trainer anymore at the gym, some reason you’re not allowed to use cross trainers. So she has joined baby yoga. (Jane, interview 1)

I found running quite difficult because of the impact on my hips and shoulders and so I found the cross trainer much better because there was no impact. (Lucy, interview 3)

They just want someone to say that they are doing the right thing. Then they can keep that in the head when someone is commenting that maybe they shouldn’t be on the cross trainer. (Faye, interview FE)

These quotes demonstrate the disparate opinions the women encountered in different gyms. Jane’s story describes the X trainer being banned in pregnancy while Lucy’s gym was happy for her to use it. This is further evidence of the continued perpetuation of unfounded myths77, leaving women to discern the evidence sources they draw on to make their decisions.

While the message most women received from their midwives and GPs was a caution to be careful and reduce activity as their pregnancy progressed, Jane posed an example of being actively encouraged to exercise. This was initiated for medical purposes, specifically diabetes and obesity. Reviewing the literature on exercising in pregnancy highlights a similar priority with the majority of research focusing on reducing pathology rather than proactively promoting a healthier lifestyle. Recommending exercise is predominantly promoted to combat existing poor health such as obesity and associated diseases such as diabetes and pre-eclampsia for which there is an established evidence base. This supports the notion that the medicalised model of healthcare focusing on treating illness rather than promoting good health, continues to dominate. The focus on health outcomes is further evident in clinical guidelines and public health messages promoting exercise that are in stark contrast to the women’s motivation to exercise. In

77 These myths were recently critiqued by Oster (2013), a professor of economics after experiencing the vague and contradictory medical recommendations she received in her pregnancy.

Pregnancy seems to be treated as a one size fits all affair. The way I am used to making decisions thinking about my personal preferences, combined with the data was barely used at all. (Oster, 2013, xvi)
contrast the women predominantly focused on a sense of wellbeing and controlling weight to maintain body image and self-identity rather than preventing disease.

In reality the lack of encouragement to exercise is compounded by midwives having insufficient time to address these areas in their allocated appointment times which the women commonly highlighted.

> Well they don’t have a lot of time there’s a lot of paperwork filling in it seems. (Bethan, interview 2)

> They don’t have a lot of time there’s a lot of paperwork filling in. They are all really nice and I must admit they did advocate exercise. They did ask about what sort of activity I was doing and I remember thinking, oh, that's good they're asking and encouraging. So it was on their tick list of things to ask but they didn't have leaflets or anything. (Claire, interview 1)

While some of the women felt the midwives were cautious about encouraging activity, others had a more positive experience; like Claire, Katherine found that her midwife had been encouraging with respect to exercising.

> I have spoken to my midwife and asked for advice on whether she thought it was a good thing to do the swimming and maybe go back to my running club. And she just said obviously don't overdo it, but there’s absolutely no reason why you shouldn't just carry on as before. My midwife has been really good telling me to do whatever I feel happy doing and go by how I feel. (Katherine, interview 1)

In Katherine’s case this was welcome advice which endorsed the activities she wanted to do. However, women with less previous experience of exercise said they wanted clearer direction and guidelines [Table 5-5 evidences this further]. In summary, these data suggested that advice from health professionals was varied but often limited by lack of time and concerns regarding litigation, compounded by the lack of clarity in the guidelines.

### 5.4.2.3 Lay public and media influences on decisions

Although all the women reported applying caution particularly in their 1st trimester, several continued to engage in activities that might challenge social norms such as horse riding, aerobics or running in pregnancy. They described encountering a range of responses, including people being surprised or shocked by what they were doing and at times a degree of disapproval.
Well people are quite shocked that I’m still doing the Zumba because I think most of the time they think of aqua-natal classes and yoga. (Jane, interview 1)

I suppose it’s an old-fashioned view as well that you should be taking it easy and putting your feet up, I know my Nan seems to think that, she’s very much like you need to slow down sit and put your feet up for a while. And I think a lot of people feel like that as well and think well that’s it I’m pregnant, I’m not going to do anything. (Lucy, interview 2)

These quotes highlight the inconsistency between current exercise guidelines (O’Donovan, et al. 2010) that encourage regular moderate activity in pregnancy, and the women’s encounters with lay opinion that predominantly prioritised rest over activity in pregnancy. This left them with a degree of uncertainty regarding whether the exercise they were doing was reasonable due to the contrasting messages they were receiving.

I think there is a lot of myth and hearsay about the whole concept of pregnancy, a lot of clichés that people seem to resort to, sort of reference points that people have that get trotted out as common wisdom. (Gladys, interview 3)

I think that the general public or society is uneducated about what's good, people don’t realise that this is not selfish, it is not harming the baby. But they just see a pregnant lady in Lycra and that probably doesn't look right. (Katherine, Interview 1)

I remember with my first child I got some really weird looks from older ladies in my body pump class. They were like what on earth are you doing as if I shouldn't be there which I found quite off putting. It didn't stop me going, I thought no I’m going to go to the end you can look at me all you like….it made me feel a bit awkward but probably because they never did that. They weren’t old but it was just the way they were looking at me. It just made me feel really uncomfortable. (Lucy, interview 1)

These social ideologies of pregnancy permeated throughout the women’s social interactions from a variety of sources and demonstrated how seeing pregnant women exercise is still something of a novelty. The women described how their bodies expanded over the course of the pregnancy and also how they felt more exposed by the process. This resonated with the concept of how women are ‘refracted by the prism of pregnancy’. Refracted light is transformed into a wide beam of colours; it also changes its direction, which makes an interesting analogy to how a woman’s body is changed by pregnancy. Being under scrutiny was a recurrent and challenging issue the women had

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78 As discussed in Chapter 2 moderate-intensity aerobic activity: is exemplified as a brisk walk which noticeably accelerates the heart rate. (O’Donovan, et al. 2010).
79 This concept was first described by Bailey (1999) in a study of self-identity and the transition to motherhood.
to address when participating in exercise. Several reported that pregnancy opened them to public scrutiny and unsolicited advice.

You know how people comment all the time and think it’s fine, one minute someone will say ‘look at the size of you’ and then the next person will say ‘oh it’s very small are you sure everything’s ok’ you think ahh what a horrible things to say. (Pauline, interview 2)

Going for a run, being in the gym lifting weights, even cross trainer machines that are perfectly safe where there is no risk. I think these are the areas where women have the most issues with people commenting. It's a strange thing that when you become pregnant, people have a right to comment on your activity regardless. You wouldn't normally approach a stranger and ask them if they knew what they were doing. (Faye, interview FE)

These mixed messages impacted on women’s autonomy and self-identity, particularly as embarking on pregnancy imposed taking on responsibility for their future baby as well as their own health. Exploring this issue further in pregnancy forums identified that it was not only commonly applied to exercise but many areas of pregnancy and is commonly referred to as ‘the pregnancy police’80. These conferred the women’s impression that they were under scrutiny and suggested this is widespread, aroused strong contempt and highlighted the patriarchal discourse around pregnancy, the term has recently entered the academic field81.

During the period of data generation there were several media reports [5.4.2] regarding pregnant women and exercising that the women spontaneously raised within the interviews.

I read an article I think it was only a couple of months ago it was about a lady who was out jogging and she use to get abuse shouted at her when she was quite obviously pregnant and had a big tummy and people were saying all sorts of things such as why is she doing that? She's harming the baby. (Katherine, interview 1)

There have been some posts about a lady who is doing quite extreme weightlifting during pregnancy and she's got so much criticism and so much flack on there it's really disturbing. I think she looks amazing but she’s posted

80 Media excerpts examples of use of term ‘pregnancy police’:
‘The problem with the pregnancy police and my sanctimonious dinner guests is a lack of education, half-informed opinions and scaremongering.’ (O’Reilly, 2010)
‘Pregnancy police, however, assume Mom-to-Be is less than competent. Their aim is to protect babies from women whose estrogen-flooded brains malfunction.’ (Fit pregnancy, 2014)

81 Of note the Royal College of Physicians are hosting a professional study in April, 2016 ‘Policing pregnancy’: maternal autonomy, risk and responsibility.
photos on a website and she's just had thousands and thousands of criticisms it's really bad. (Lucy, interview 3)

There quotes are examples of media influences on their decisions and the numerous stories in the ‘tabloids’ regarding exercise in pregnancy, over the period of data generation, (see appendix 12 for a timeline of media headlines). Typically, media messages are contradictory, sensationalising and based on anecdotal evidence rather than robust evidence. Analysis of these highlighted the media interest in this subject as well as the passionate public reaction these can generate, as highlighted in the two quotes above. This revealed how exercising in pregnancy is both culturally celebrated and sanctioned by the press and society in general. Ordinarily, exercising regularly and maintaining a slender toned figure is considered an admirable attribute in women, the change in social expectation to prioritise rest took away some of the usual positive reinforcement for exercise. Rather than being praised or admired for maintaining a regular exercise pattern and slenderness the women feared condemnation.

I text my sister-in-law and told her I was about to go for a gentle little run and she text me back saying oh, you're wonder woman (Katherine, interview 1)

I felt quite embarrassed I met up with the other moms and they were saying gosh, you're so slim Jack was three weeks old, I have always felt a little bit guilty for that. (Katherine, interview 1)

These two quotes from Katherine highlight the contradiction in comments the women received, which were further compounded by media representations of exercise in pregnancy. One of these highlighted pregorexia, referring to extreme examples of women using exercise to control weight gain. An example of this was reported by one of the fitness instructors.

I did have a lady who came a couple of weeks ago who just got pregnant she wanted to start running for the first time and I really put her off….I think it was because she wanted to not put on too much weight it was very complicated. (Frankie, interview FE)

Such extreme behaviour is in stark contrast with the notion of pregnancy as an excuse and was not evident in the data for the women in this study; however some of the women

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82 The media has reported a relatively new cultural trend of ‘pregorexia’ that denotes dieting and exercise to the extreme during pregnancy to control weight gain (Bainbridge, 2008).
did express a degree of pressure to minimise weight during pregnancy, and subsequently to lose it as soon as possible postpartum.

The Paula Radcliffe book was good; it had a section about pregnancy in it. Also, things you see in the media, particularly what the celebrities are doing, this helps build up a picture and an idea about pregnancy. (Emma, interview 2)

Some celebrities are still very tiny and have you know what looks like a little football up their jumper so not putting on huge amounts of weight but some of them are. I think that does have an impact on society and how women view themselves. (Katherine, interview 1)

The celebrity baby culture appears to be a powerful force in modifying expectations around what is normal. Conversely, one of the headlines regarding Kate Middleton commended her for not hiding her post-partum abdomen; however, this was also accompanied by a wealth of comments that she looked ‘fat’ and ‘pregnant again’ in the press and social media. The stigmatisation of fat was a persistent discourse evident in the interview data, internet forums and media headlines. As previously highlighted, [5.2.1] ‘avoiding fatness’ was a key motivator to continue exercising through pregnancy.

We’re influenced by what we read in magazines and the papers aren’t we. Kim Kardashian was in the media because they thought she had had a miscarriage the headlines were, ‘Did she nearly miscarry from doing too much exercise in pregnancy?’ For the media to sell papers that’s a great headline isn’t it, and I’m sure that exercise wasn’t the reason, it’s not a very good message for women, it was a high profile story and a lot of people read it. (Ruby, interview 2)

Media reports can be highly influential, representing a significant source of knowledge for some people who may take the headlines at face value and not investigate stories in more depth. This compounds the conflicting advice given to pregnant women regarding what they should or shouldn’t do in pregnancy. Various discourses feed into lay perceptions of exercise in pregnancy as unsafe and generally women felt that society didn’t really encourage them to exercise.

I was looking through maternity clothes the other day in anticipation of getting larger. You can’t really find much gym wear for pregnant people. So it seems like it’s not only the general public midwives and doctors telling me not to or to take it easy, but it’s also the gym clothes manufacturers. (Lucy, interview 1)

83 ‘Mummy tummy helps normalize pregnancy’ highlighted how Kate was praised by some for showing off her post-baby bump ‘because that’s what moms really look like after they’ve given birth’ (Richmond, 2013).
The lack of availability of fashionable pregnancy clothes further accentuates social ideologies regarding exercising in pregnancy. While some of the women in the study found this important others adopted a more frugal approach and made do with old clothing they already had and oversized T-shirts. This was mainly founded on the belief that because maternity clothes are only worn for a limited amount of time, there were more important things to spend money on. From observations at the baby show (Olympia, 2014), it was more common for partners or the women’s mothers to value the importance of this clothing and they often bought it for them. To some extent this demonstrates the women conforming to the social ideology of sacrificing their own needs for that of their pregnancy and future baby.

There was a degree of hierarchy in these social influences on decisions. The most persuasive influences appeared to be from those closest to the women, particularly partners and then family members. As will become evident in section [5.6.3], while the women received advice from health professionals they did not always follow this. Likewise they were more selective with respect to the extent to which they took on board reports or advice in popular media and from public opinions they encountered.

In response to social expectations and physical changes accompanying pregnancy the women revealed various ways of how they constructed and performed their pregnant self by modifying their activities and behaviours.

I was doing that [British Military Fitness] the first 6 weeks I was pregnant, not really realising but then the minute I found out I stopped. From my perspective I wouldn’t contemplate running of any type, I might run for the bus but that might be it. (Emma, interview 1)

I cut down on my weights and gave up body pump a week before I was due I started doing aqua-aerobics instead because I fancied being in a nice warm pool. That’s the only thing I really cut down on and I was careful to make sure I wasn’t getting too hot and my heart rate didn’t get too high. So I paid a bit more attention to things like that. (Lucy, interview 2)

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84 Ogle, et al. (2013) reported similar findings, suggesting this make do approach and lack of ‘stylish maternity wear’ compromised women’s ability to actualise their desired selves

85 This resonates with Goffman’s work regarding performances of self and dramaturgy (Goffman 1971), influenced by the women’s understanding of social ideologies and expectations.
These quotes exemplify some of the ways the women modified or stopped certain types of exercise that they deemed inappropriate in pregnancy. In contrast they described other women they had met who had not exercised previously but began exercising because it was part of doing pregnancy\textsuperscript{86}.

I've noticed it in yoga, you get the ones like me who perhaps did yoga before, but there are so many more who haven't, they're doing it because they've read that yoga is the right thing to do in pregnancy and is good for them and good for the baby and they thoroughly enjoy it and get a lot out of it but they haven't considered yoga beforehand. (Claire, interview 1)

I think it's something they do because they're pregnant, maybe 80 to 90\% of the women who come along haven't done yoga maybe they've done other forms of exercises or they've done nothing at all. It's all part of what pregnant women do, you do your hypno-birth classes your NCT classes and pregnancy yoga. And if they can afford to do all of those three things they go hand-in-hand. (Freya, interview FE)

Depending on their previous activity levels pregnancy can, encourage some women to exercise more while reducing activity levels in others. Generally pregnancy encouraged women towards aligning with social norms of exercising such as pregnancy yoga and aqua-natal. In the above extract, Freya describes how women worked hard at doing pregnancy and attending NCT and birth preparation classes, both of which indicate self-presentation as a responsible, ‘fit’ parent-to-be. Although most of the women in the study sample attended pregnancy preparation classes, as highlighted by Freya, this is income dependent and unlikely to be representative of the general population.

There was an element of wanting to ‘perform pregnancy well’ while at the same time not losing their self-identity as they journeyed through their pregnancy. To some extent this resonated with how they described the sense of achievement they attained through exercise and their pride in having a fit healthy body. Doing pregnancy not only included engaging in the social elements of the pregnant self but also maintaining their wellness through having an uncomplicated pregnancy and striving to achieve a ‘good birth’ that reflected their physical prowess these are further examples of how women saw exercise as an accomplishment that enhanced their self-esteem.

\textsuperscript{86} Other studies have reported similar findings (Mottola & Cambell, 2003; Hinton & Olsen, 2001; Hegaard, et al. 2010) whereby some previously sedentary women began exercising in pregnancy, which they suggested maybe due to women seeing pregnancy as an opportunity to change their lifestyle as recommended by exercise guidelines.
This section has explored women’s construction of doing pregnancy and how they interpreted what was socially acceptable or expected pregnancy behaviour. Figure 5.3 illustrates the key factors identified throughout this section that influenced their decisions (these subsequently became integrated within the moderating factors [Tables 5-9 and 5-10]). Opposing media\textsuperscript{87} representations that celebrate fitness and the slim, socially desirable figure was a discourse that excused women from these ideals and encouraged rest. These data highlight the mixed messages women receive and suggest that the overall impact of the effect of constructing the pregnant-self was a reduction in their exercising intensity and frequency in line with social ideologies.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure53.png}
\caption{Context and conditions arising from constructing the pregnant self that influenced decisions regarding exercise.}
\end{figure}

\textsuperscript{87} In a detailed critique, Dworkin & Wachs (2009) highlighted how the media construct discourse around fitness associating it with ideals of good motherhood and womanhood while having an unfit, or ‘bad,’ body is conflated with being an unfit, or ‘bad,’ citizen.
5.4.3 Cultivating resources

To facilitate their decisions the women cultivated a range of resources that predominantly comprised expanding their knowledge to inform and justify their decisions. It also included drawing on previous experience and developing a supportive environment within which to exercise.

The women sourced information from a range of sources of which the Internet was the most common, followed by advice from fitness instructors, midwives, GPs, pregnancy apps and, occasionally, books. Building on the data presented in the previous section Table 5-5 overleaf contains a selection of quotes that demonstrate the confusing nature of the advice women received. These mixed messages compounded the uncertainty characteristic of pregnancy and left women needing to contextualise the information both in terms of assessing for its accuracy and personalising it in terms of applying it to their individual circumstances.

<table>
<thead>
<tr>
<th>May be taking all those factors into consideration like did you exercise regularly before you are pregnant; it's all that sort of thing that you just don't get told in black and white. (Emma, interview 3)</th>
<th>This class tomorrow I guess will be tailored for doing things that are only advisable for when you're pregnant. (Katherine, interview 2).</th>
<th>With my first pregnancy the midwife didn't really have a clue. She tended to give me quite out of date advice so I don't think I'd listen to them this time. She tended to err on the side of over caution. (Ruby, interview 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The best thing was speaking to people who had actually been there really and done it rather than what you read. (Bethan, interview 1)</td>
<td>I did look a bit online and there were some people who said ‘oh no you shouldn't do Zumba it's far too energetic and oh you could do yourself mischief. (Jane, interview 1)</td>
<td>So if the risk is I'm more likely to hurt myself then I know what I'm capable of lifting and I know how to lift it properly so I can manage that myself so I don’t worry about it. (Pauline, interview 1)</td>
</tr>
<tr>
<td>My midwife doesn't have very much information on that [exercise] she just says if you feel like it do it, that's as much as she's said, just listening to your body is the main thing to do. (Lucy interview 1)</td>
<td>I would really like more information on what I can do, definitely the midwife could give more information. (Darcy, interview 1)</td>
<td>I've seen her twice now but she's kind of like, yes you can do pretty much anything get out there, exercise is good for you. (Claire, interview 1)</td>
</tr>
<tr>
<td>You go to the Internet to get information, but then you qualify that information based on your own personal circumstances and what your mother or your partner say. (Gladys, interview 1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5-5. Examples of how women contextualise information.
While the women acknowledged that interactions with the midwife were constrained by time, there was a general consensus that midwives were not well-informed regarding exercise [5.3.3, Table 5-5].

There isn't really anywhere you can go, even if you asked the midwives. One tells you one thing, one tells you something else so I felt they weren't really quite sure of the information they were giving you. ...They didn't seem very knowledgeable about this kind of stuff. They just say oh yes exercise is good for you but they don't really say what you should be doing and what you shouldn't be doing at what stage of your pregnancy. (Emma, interview 3)

It depends how much physical activity you're already doing. When I run as a non-pregnant person, if I get a stitch, I carry on because I know it will go away if I keep running for long enough. But I think if you are pregnant and you got a stitch that wouldn't be advisable running through the pain barrier would not be great pregnancy advice. I guess if you're in tune with it anyway, say someone who’s already physically fit; it's easier to gauge what is okay. (Faye, interview FE)

Advice (if any) received from midwives was often considered unhelpful, particularly when it wasn’t relevant to their personal situation. Common advice from the midwives was ‘if you are used to it, carry on as you are’ and ‘listen to your body’. This, as highlighted above requires a degree of previous experience to be applicable.

Yes I think women feel quite a sense of relief, ‘Oh, that's okay, women like me can do this, it is fine for me to do this’ and so they actually have a renewed confidence. Two of the ladies and their husbands train in the gym so the fact that they are in the gym exercising and their husbands are there too seems to reinforce what they’re doing. They know that she has trust in me, and so the husband is quite happy for her to be exercising and I think that’s probably one of the biggest things. (Florence, interview FE)

I went to the doctors when I first found out I was pregnant I said ‘I’m meant to be doing a marathon in a couple of months’ time’. I thought he was going to say that was a complete no, but he said no listen to your body and if you feel fine carry on but don’t push yourself. And I thought that was really good advice from a doctor. (Pauline, interview 1)

I also remember talking to one of the obstetricians at work. He said he’d looked after lots of women who had exercised vigorously in their pregnancies and had excellent outcomes he was a real advocate for exercising in pregnancy. (Ruby, interview 3)

Occasionally, women actively sought professional sanction from either a fitness expert or health professional for the exercise they were doing to add further credence to their decisions. Comparing the above quote with the one given for Ruby in Table 5-5, exemplifies a common pattern whereby the women dismissed information that conflicted
with their desire to exercise and actively sought out that which would affirm their beliefs and endorse their chosen behaviour. Through this approach the women were able to gain sanction for their chosen activity that they could then draw on to justify their decisions if challenged by friends or family members.

I think you need to change the way people think about it it's no good pretending, there's nothing dangerous so there is no reason not to. I'm absolutely convinced it's the right thing, to be doing hundred percent confident about the benefits of exercise. If anybody ever said something like you're doing your baby harm I would be able to come back and say, actually no, these are the reasons why ...you just need to know what you're talking about really. I don't care what people think. Anyway they can have their own opinions which people do I'm sure. (Ruby, interview 2)

Ruby however, had published a book and a smart phone app about exercising in pregnancy and was, probably, better informed than most women.

But then they're just guidelines aren't they so it's not like you have to do it, it's just that this is what we are suggesting. We don't always listen to guidelines about food and drink; it's just something to give you an idea. But I don't think it would hurt at all to have a very simple guideline for women because you tend to have these guidelines for exercisers, non-exerciser, athletes don't you and it all seems quite confusing trying to work out where you fit. (Ruby, interview 2)

Throughout her interviews she expressed a clear faith and confidence in what she was doing; despite this, she felt clearer guidelines would help other women feel more confident to exercise. Ruby’s quote also highlights that health information is assimilated by individuals in line with their circumstances and beliefs, prior to decisions regarding how or whether to enact on it. Generally, the women weren’t aware of national guidelines regarding exercising in pregnancy, which suggests that these could benefit from being more widely disseminated.

It's almost like there's a bit of a culture it must be a hang up from Victorian times that when you're pregnant you rest. People are almost surprised if you say you are doing anything. Like I park my car at the bottom of the hill, every day, I quite like walking up the hill. People keep saying 'but you shouldn't have to park at the bottom'. But I can walk up the hill, and it's funny that there is almost an expectation that the minute you're pregnant you just you don't have to do anything and you almost shouldn't its funny. (Pauline, interview 2)

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88 This is described in the literature as selective perception (Rogers & Shoemaker 1971) and discussed in depth in 7.7.2
Both the women and the fitness professionals demonstrated awareness of a cultural lag in lay discourses and sometimes health guidelines that were unnecessarily restrictive and had yet to take account of the research evidence regarding the safety and benefits of exercising in pregnancy. While this provided them with some reassurance it often resulted in them facing a degree of conflict when their decisions to exercise went against the social ideology of pregnancy as a time of rest and caution and ultimately their choices or decisions were constrained.

The societal impact is where it needs to come from its down to the media and widening perceptions of what women can do in pregnancy....the great difference now is the wide demographics of people exercising. When I was in my 20s you never saw people running in the streets over a particular age and in the gym they were all Lycra clad. Whereas now you see everybody every age out running so people are not going to feel so unusual. (Felicity, interview FE)

This suggests that exercising is generally becoming more widely accepted socially and gradually assimilated into social ideologies. However, the current lag in lay advice compared to current research evidence adds to the conflicting information women have to synthesise and further complicates the decision-making process.

Pauline’s quote demonstrates how as highlighted in section [5.4.2] despite the growing evidence of the health benefits of exercise [2.4] the stronger discourse is that women are granted permission to be inactive to ensure healthy outcomes. One way this was expressed by the women was suggesting other women saw pregnancy as an excuse not to exercise. It was also reflected in discussions in the media concerning ‘stork parking spaces’.89

Some women secured confidence in their activities by exercising with friends or seeking supervised pregnancy classes such as yoga where they felt reassured by the perceived competence of the instructors. In contrast, other women were able to regulate their own exercise activity, and continued to exercise independently, which required a level of self-confidence and the capacity to know their body [5.3.3] and assess its capabilities. This builds on earlier descriptions of the reassurance women gained from knowing their bodies well. However it highlights that without this previous experience women may cease activities owing to lack of accurate knowledge.

89 Several examples of this were identified in pregnancy forums and wider media such as Lee (2013)
Having a supportive environment was another contributing factor to how confident women felt with exercising. Several considered the gym to be an unfriendly environment where they felt unwilling to ask for advice on using the equipment. In contrast, clubs and classes tended to offer a more nurturing, fun environment that encouraged a sense of belonging.

You don't see the fitness instructors there very much and I was almost embarrassed to ask how to use a machine so I just did what I thought on it, using it the way I thought it should be used rather than going for help. Whereas the running club the lady is always there to give advice.... she is very good you know at keeping an eye on you and making sure you don't overdo it making sure you only do what you're comfortable with. (Katherine, interview 1)

I think it's because it [Zumba] does just seem a bit more fun and 90% of the people in the class there are right Divvy's like me. I think if a person is nice and friendly and fun then that's really what makes the difference I think in general. I don't feel like I'm there with a bunch of Lycra clad people who are sort of pumping mega iron. (Jane, interview 1)

This was obviously dependent on the gym itself: one leisure facility had a fitness instructor trained in pregnancy whom two of the women reported visiting and being offered comprehensive and encouraging advice that enhanced their experience.

The instructors were quite blasé about it I think they must get a lot of pregnant people particularly in things like body pump, they were fine, quite supportive of me. The lady who does Body Pump has two kids of her own and she exercised well, continued with body pump in pregnancy so she can relate to it. (Lucy, interview 1)

Initially the Internet, and since then, obviously seeing the instructor at the gym, she's talked to me about it she was interested, which is good and the yoga teacher. (Claire, interview 1)

This facilitated Lucy to continue her aerobics classes late into the pregnancy. In contrast to advice received from health professionals the women felt reassured by the perceived competence of the instructors of pregnancy-specific classes such as yoga. This provided an additional means of ‘being sanctioned’ to exercise, whereby attending pregnancy-specific classes endorsed what women were doing as appropriate for pregnancy.

As soon as I found I was pregnant I stopped doing any Ashtanga I wanted to make sure I was doing it properly. I researched what was out there and found the yoga mummas. (Claire, interview 1)
I don’t think it’s a good idea for people to be doing exercise in pregnancy at home on their own, it’s much better to do it under good supervision with a teacher who can show you how to do it properly. I want to go to someone else who is trained in pregnancy I don’t want to go to a normal yoga class I want to go to a proper one. (Darcy, interview 1)

Although Darcy was an experienced dance teacher who prided herself in knowing her body she still sought reassurance by attending classes led by trainers specialising in pregnancy. At times the availability of suitable classes made this difficult which for second time mums was further compounded by the limited availability of crèche facilities.

The gyms don’t have a crèche so it’s been really difficult and the other gym near me only has one person who’s postnatal and antenatal qualified and trying to get a time when I can get there when they are there has been really difficult. Whereas the instructor is always available at the gym but they don’t have the crèche so its lack of trained people really. (Lucy, interview 3)

The location and cost of leisure resources were raised by several of the women and another factor that influenced the choices and decisions to exercise.

In light of the cautious messages they received regarding pregnancy exercise, there was an element of needing to feel sufficiently confident to exercise, which some women addressed by drawing on previous experiences.

When I was first pregnant with ‘Jo’ [1st child], I remember going for a run and literally within a few minutes I just suddenly felt really hot and sweaty. I don’t know whether that was just me being a bit anxious really looking back on it, but I just stopped running and didn’t want to do it again....now I am probably running maybe twice a week last night I went out for a run and did, 20 minutes non-stop. (Bethan, interview 2)

The women used a range of strategies to address this dichotomy as captured in the ensuing section **accommodating the pregnant self** [5.6].

In summary as they progressed through the transition of pregnancy the women drew on a wide range of resources to inform and support their decision-making. When the information they receive supported their chosen activity they enjoyed a degree of reassurance. However, if this reassurance was insufficient to confirm their decision they

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90 This supports the findings of the studies described in section [2.8] that environmental influences can be influential in women’s exercise behaviours in pregnancy.
drew on a number of alternative strategies aimed at reducing their cognitive dissonance. One was purposely to seek information that supported their behaviour. At times, this involved a degree of manipulating the source of information to confirm their initial decision to continue to exercise. Owing to the inherent uncertainty of pregnancy, the information available was often perceived to be vague and for some women didn’t instil sufficient confidence to maintain their desired exercise. To accommodate this, some women sought a more supportive environment in the form of pregnancy classes or friends to exercise with to endorse their behaviour. Social connections with other mothers fostered a sense of endorsement and confidence to continue to exercise. Social support can, therefore, be a significant moderating factor that influences how transition is experienced and decisions made during this time.

This section on identity transition has demonstrated how embedded within the women’s decisions regarding exercise was an underlying desire to maintain elements of their pre-pregnant self, while acknowledging the inevitable change motherhood would bring. The desire to maintain their self-identity as they negotiated the transition through pregnancy was a fundamental factor influencing their decisions to exercise.

In the process of seeking a framework to help render the substantive theory, the concept of rites of passage and specifically the period of liminality provided an illuminating perspective through which to view the women’s transition to motherhood [Reflective memo Box 4-4]. This helped define the context within which decisions to exercise took place. The following diagram [Figure 5-4] uses the concept of liminality to demonstrate how women drew on exercise through the transition of pregnancy to attain continuity between their pre-pregnant and future selves.

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91 Cognitive dissonance refers to the discomfort felt at a discrepancy between what is already known or believed and new information or interpretation.
92 To render is the process by which the researcher’s analysis of what is happening in the substantive area of enquiry is translated or made understandable to the reader (Birks & Mills, 2015)
Figure 5-4 Using exercise to negotiate the pregnancy liminal pathway.

Within the diagram the separation phase signifies when conception and pregnancy began to alter the ‘pre-pregnant exercise self’. As women progressed through pregnancy they entered the temporary unpredictable liminal phase and began constructing the pregnant self. While they recognised that they would inevitably change during this time they drew on exercise to maintain their unique identity and a sense of normality through the transition to motherhood and their future selves [5,7].

For simplicity, the ways women used exercise are divided into three sections highlighting where they were most prominent; in reality these are arbitrary and interwove rather than comprising discrete stages. Type, intensity and frequency of exercise changed with different stages of pregnancy and varied across the women in the study.
While pregnancy made exercising difficult there were numerous factors that motivated the women to continue to maintain their exercise habit. Despite this desire most women reduced their activity levels most commonly initially owing to tiredness and nausea and latterly physical discomfort as the pregnancy developed. An additional reason was concern regarding potential risk of injury to the pregnancy or baby or to themselves. This was frequently attributed to not wanting to sustain an injury that might prevent them exercising. Alongside this, they experienced ongoing changes to their identity as they constructed the pregnant self influenced by varying social ideologies and sources of information they encountered through the transition.

Viewing pregnancy from the standpoint of liminality facilitated an understanding of how the women negotiated not just the physical changes but also their personal and social transition through pregnancy into motherhood. Their decisions regarding exercise in pregnancy were significantly influenced by how they negotiated this transition and its impact on their self-identity. The women’s physical removal from their old life was predominantly illustrated through their descriptions of the gradual but distinctive changes in appearance as pregnancy progressed [Figure 5-1]. The process of passing from the role of a woman to that of a new mother continued through childbirth and the post-natal period as they became absorbed into their new social status as a mother. While the women raised numerous examples of their experiences of this transition this study has purposely focused on how it influenced their decisions to exercise in pregnancy. In summary, self-identity was disrupted by pregnancy and they drew on exercise as a coping strategy to maintain identity consistency.

5.5 Identity conflict

The previous sections on identity transition highlighted the key factors that influenced women’s decisions regarding exercise. This exposed conflict between maintaining the exercising self and constructing the pregnant self that triggered cross-domain identity conflict. In cultivating resources to inform and support their decisions further uncertainty was generated by contradictions in the information and advice they encountered, which further complicated their decision-making. This section discusses the

93 This concept is taken from identity theory but correlates closely to the inter-role conflict described in role theory.
ensuing psychological unease this uncertainty and identity conflict generated. Section 5.4 highlighted various tensions that influenced decisions regarding exercise that are summarised in the following Table 5-6.

<table>
<thead>
<tr>
<th>THE DICHOTOMIES</th>
<th>DATA EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looking pregnant V Fat</td>
<td>I think pregnancy is hard in the beginning because we have an image of how we want to look you don't want to look fat, but early on in pregnancy it's hard to know if someone's pregnant or not. (Katherine, interview 1)</td>
</tr>
<tr>
<td>Desire to exercise V Time constraints</td>
<td>There's a whole load of other issues coming into why people don't exercise probably more to do with time, probably for me. I'm quite good with time management and I think the thought of me losing that fitness keeps me going as well (Bethan, interview 2)</td>
</tr>
<tr>
<td>Exercise benefits V Risks</td>
<td>I wouldn't have wanted to fall over and a friend of mine on my team miscarried earlier this year. I'm not saying it's anything to do with netball at all. But, there is that thing that you don't know when it is safe and when it isn't. (Claire, interview 1)</td>
</tr>
<tr>
<td>Appearing vain V Aspiring to a positive body image</td>
<td>'I don't necessarily think it's to do with not gaining too much weight or anything like that because it certainly isn't for me it's not why I'm continuing to do my fitness and things. (Katherine, interview 1)</td>
</tr>
<tr>
<td>Maintain fitness V Avoiding injury</td>
<td>I can still do things and keep active but without….. having to do it so full on because I think if I was going at it full on I would probably do myself an injury (Jane, interview 1)</td>
</tr>
<tr>
<td>Research V Lay opinion (Conflicting advice)</td>
<td>It's all very confusing. I think a lot of people think exercise is a risk in pregnancy and there's a perception that it's not good for you to exercise which is probably why the NHS have got this thing saying exercise. All the books recommend exercise but there is perception that people should be taking it easy when they're pregnant, which is true you should but you know you're not just pregnant you're human as well. (Darcy, interview 1)</td>
</tr>
</tbody>
</table>

Table 5-6 Examples of the situations that aroused a sense of dissonance.

These examples demonstrate the complexity of factors that influenced the women’s decisions which permeated beyond pregnancy but nevertheless compounded their decisions. As evident from the previous two sections, the physical, social and emotional influences on the women’s changing identities included factors that simultaneously encouraged and discouraged exercise. Fundamental to decisions in pregnancy was the dissonance aroused by the opposing influences generated by the exercising self and the pregnant self illustrated in Figure 5-5 overleaf.
Figure 5-5 A matrix of how the categories ‘Maintaining exercising self’ and ‘Constructing pregnant self’ resulted in experiencing identity conflict or harmony.

When the cumulative effect of these factors complemented each other i.e. either both encouraging or both discouraging exercise, a degree of harmony existed that eased the decision-making process. However when these influences conflicted, with one encouraging and one discouraging exercise varying degrees of dissonance were triggered. The thick circle in Figure 5-5 highlights the category from this matrix that most commonly challenged the women in this study, namely when the pressure to rest, conflicted with their desire to exercise. This dichotomy of being simultaneously encouraged to both exercise and rest is summarised in Figure 5-6, and highlights the key source of tension the women faced.

<table>
<thead>
<tr>
<th>Maintaining exercising self</th>
<th>Constructing pregnant self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourages Exercise</td>
<td>Discourages Exercise</td>
</tr>
<tr>
<td>Positive motivation and encouragement to exercise in</td>
<td>Pressure to rest conflicts with desire to exercise and causes</td>
</tr>
<tr>
<td>HARMONY</td>
<td>CONFLICT</td>
</tr>
<tr>
<td>Discourages Exercise</td>
<td>Negative inclination and discouragement to exercise in</td>
</tr>
<tr>
<td>Pressure to exercise greater than desire and causes</td>
<td>HARMONY</td>
</tr>
<tr>
<td>CONFLICT</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5-6 Opposing influences to exercise between ‘pregnant self’ and ‘exercising self’.

Through the analysis it became increasingly apparent that this was the principal area of concern in the substantive area and was explored in depth through theoretical sampling.
The remainder of this section will present some of the women’s experiences of encountering the gap that evolved between their desire to exercise and social pressures to rest.

I think a couple of times when I went he said I’m not happy with you going running and I said well sorry but I am going and I did. But then I thought I will stop. (Katherine, interview 1)

While some women described challenging their partners’ concerns they recognised the intricacy of the responsibility they held in that it was not just their baby. This highlights the complexity and emotive nature inherent in the decision-making process and builds on the examples of how women’s decisions were influenced by their partners in [5.3.2]. In some ways this could further explain the women’s desire to maintain a sense of control and continuity of self [5.4.1] as they negotiated these conflicting influences.

I probably would have run for a bit longer, but my partner was concerned about me carry on running if he wasn’t happy about it then I wasn't going to keep doing it. I probably would have liked to run for a bit longer though (Katherine, interview 3)

To some extent James discouraged me from carrying on with Brit-Fit I might have carried on for longer maybe at a lower level. (Emma, interview 2)

Several of the women had to negotiate conflict between their desire to exercise and their partner’s reaction to them exercising in pregnancy. While they supported their pregnant partner’s desire to exercise, the tendency was for them to discourage what they perceived to be ‘risky’ activities. In the interviews following the birth, there were several occasions when the women revealed a degree of regret that their partners had restricted their activities, despite saying at the time that they been happy with the decision. Potentially blaming others for compelling them to stop an activity may help to alleviate post decisional dissonance⁹⁴, particularly after the birth when the uncertainty has gone. This suggests that their decisions were constrained by the limitations pregnancy posed on their autonomy and that by defending these decisions they were able to reduce post decisional-dissonance.

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⁹⁴ Post decisional dissonance describes the arousal of anxiety over whether the correct decision has been made
Conflicting information [5.4.3.] was another key challenge the women commonly encountered whereby mixed messages triggered a degree of confusion that further complicated the decision-making process.

I would have liked some solid firm advice from somebody that knows, rather than reading bits here and bits there. I’ve never really had the whole picture, generally a sweeping comment and these misconceptions about stuff. What you can do what you shouldn’t do, and you don’t know whether that advice is right or wrong and there’s never really one clear place where you can look and find out if this is the truth, should I not be doing yoga at, say, four months? (Emma, interview 3)

Emma’s quote further reinforces previous examples of wanting clearer information to inform decisions. The women who researched the subject further identified that, unlike lay messages that exercise was risky, health promotion messages and books generally encouraged exercise in pregnancy. However, the recommendations tended to promote low-impact activities (as identified in [2.5]) that didn’t always fit with the women’s preferred activity, as highlighted in the following text.

Swimming and yoga, they are the main things they recommend because they are low impact, and boring. I really like the adrenaline things and that seems to be something you can’t do when you’re pregnant. (Pauline, interview 2)

As highlighted previously [5.4.2], the risk of miscarriage was a persistent concern for the women and probably the origin of the social discourse of prioritising rest in pregnancy that the women encountered.

I just lurk [in pregnancy internet forum] and read, most ladies didn’t exercise, in fact, when I say most, pretty much everyone didn’t exercise, I was very much a minority unless it was their job there were a few fitness instructors. I think it's because they are pregnant and they want to be cautious everybody is so worried about miscarrying because it's so common. (Bethan, interview 2)

People tend to be scared of hurting the baby. Despite all the evidence I was concerned even though that was irrational but I had an early miscarriage in the cycle before this pregnancy. It took me a while to get the confidence to get back into proper exercising. (Ruby, interview 1)

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95 It is common following miscarriage for women to blame themselves believing it to be as a result of their valued and preferred decisions (Hale, 2007). Furthermore, if they believe it is a result of their behaviour or actions it can make the experience particularly traumatic and impact on their recovery (Adolfsson, et al. 2004).
Despite women suggesting that the evidence of a link between miscarriage and exercise was tenuous, the lack of clear evidence upon which to base their decisions compounded the difficulty in making decisions. With respect to risk perception a dilemma women faced was that the risk of miscarriage was far more tangible to them and others, as opposed to the risks associated with not exercising such as losing the potential mental and physical benefits of exercising. Despite raising these concerns the women consistently expressed the belief that their exercise patterns were more likely to be beneficial than harmful to them or their pregnancy and recognised that the majority of lay knowledge they encountered was erroneous. Nevertheless this contributed to the previously described moderating factor of protecting investments women had made in exercise that involved balancing perceived risk and benefits.

Another challenge woman faced when making choices in pregnancy was that if they went against ‘common advice’ they theoretically took on board a greater degree of accountability if things went wrong.

One thing that probably has influenced me and stopped me doing some things is people judging you. Mostly I don’t care about that except when you know there is a risk, a significant risk, taking that risk and people saying ‘oh you shouldn’t be doing that’. Then if something bad happened not so much what they think but what you think and how you’d feel. (Pauline, interview 2)

I don’t know what I would do if he said don’t run… I think I probably would be running. I think I would win the argument in the end. I think the thing is for me potentially is psychologically I don't mean he would do this on purpose but if he was that adamant that I didn't run there's going to be a large element of guilt if I did run and something happened. (Bethan, interview 2)

While women theoretically have a choice, social influences tended to dictate a default route of resting and reducing activity. When women follow these social ideologies and professional advice they may lessen dissonance by following ‘the rules’ or ‘going with the flow’. The previous quote encapsulates the women’s concerns whereby should they step outside the cultural norm, they were obliged to accept responsibility and consequently risk being blamed if something went wrong. Being theoretically responsible for causing injury to the pregnancy impacted on their possible future self as good versus bad mother. These dilemmas are compounded by the uncertainty around the availability of evidence to inform their decisions [5.4.3]. Two of the women raised similar challenges
with respect to decisions around vaccines\textsuperscript{96} that raised the consequences of going against recommended advice in pregnancy.

\begin{quote}
I was a bit like what do you do? You're caught between a rock and a hard place aren't you? If you don't have it and your baby catches it you'll be kicking yourself and then if you do have it and there could be something wrong with your baby as a result of it (Emma, interview 2)
\end{quote}

Similar to exercising, this highlighted the potential risk in either option alongside a security that should something go wrong women can justify their choices as being recommended by someone else. Decisions regarding exercise are similar to those regarding vaccines in respect to both the lack of clarity in the evidence available regarding the potential negative and positive consequences of each alternative/option. This is as opposed to the decision around smoking or alcohol consumption whereby the risks are more clearly established. That said, women often justify their decisions to smoke or drink alcohol as indispensable stress relievers. The women in this study also drew on this as a justification to exercise. The difference is that, from a health perspective, optimal smoking and alcohol consumption are abstinence whereas exercising from a health perspective is bad in both extremes (excess or abstinence). The challenge women face is defining optimal activity levels.

This section demonstrates the complexity of the various opposing cognitions the women constructed with respect to exercising in pregnancy. These further complicated their decisions and added to the cognitive dissonance they experienced from identity conflict ensuing pressure to rest challenging their desire to exercise. The following section explores how they addressed the pressures arising from the opposing identity domains of the exercising self and the pregnant self on their decision-making.

\section*{5.6 Accommodating the pregnant self}

The earlier section on ‘identity transition’ [5.4] described how women drew on exercise to maintain their unique identity and normalise their transition through pregnancy. This enabled them to maintain a degree of continuity between their ‘\textit{pre-pregnant self}’ and their ‘\textit{possible future self}’ as an exercising mother. Within this process they encountered numerous occasions when their desire to exercise fell in opposition with social ideologies

\textsuperscript{96} Unlike exercise, there is a strong public health message regarding the uptake vaccinations with pressure on midwives to strongly encourage vaccine uptake (RCM, 2011).
of the pregnant self. As highlighted in the previous section this triggered a psychological unease which was compounded by the uncertainty pervading their decisions regarding exercise.

This section explores the women’s reactions to identity conflict when making decisions regarding exercising in pregnancy. In accommodating the pregnant self in their existing identity structure women drew on two key processes weighing the balance and accommodating and assimilating summarised in Table 5-7.

<table>
<thead>
<tr>
<th>Sub Process</th>
<th>Summary of the sub process</th>
</tr>
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<tbody>
<tr>
<td>Weighing the balance</td>
<td>Taking on board the resources available to them and contextualising the information to fit their individual circumstance. This process enabled them to determine a rationale for their chosen actions and begin to resolve any conflict arising from their identity transition on their decisions.</td>
</tr>
<tr>
<td>Accommodating and assimilating</td>
<td>In trying to achieve identity balance the women drew on a variety of strategies which involved a combination of assimilation and accommodation. Assimilation strategies enabled them to verify pre-existing beliefs about themselves and their behaviours. In contrast, accommodation involved adjusting and reorganising their existing identity to accommodate the new ‘pregnant self’.</td>
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Table 5-7 A summary of the decision-making processes.

These processes were supplemented by cultivating resources [5.4.3] whereby the women drew on their previous experiences, gathered information and endorsement to exercise and developed a supportive environment.

5.6.1 Weighing the balance

I guess you just assimilate everything you know, everything you experienced and put your own boundaries in place really it has to feel right for you. Most people's boundaries might be right down there, they don't want to take any risks at all. If you're not previously an exerciser you probably think you’re putting yourself at risk by doing anything really. If you're really into your exercising, you may think you're putting your body more at risk by stopping when it so used to it. It’s a combination of lots of different factors probably that you put together to make your own decision don't you. (Lucy, Interview 2)

This section describes the cognitive/interactive process women engage in when considering the options available to them and the possible consequences of these on their current and future identity. It explores the extent to which women think critically about the information and synthesise it into a decision. As exemplified by the excerpt above
from Lucy it is a complicated and highly individualised process. This section therefore, aims to demonstrate the patterns that emerged through the data analysis.

I did go for a big bike ride, around the forest but it didn't feel very nice at the end my legs hurt and I don't mean the muscles. So I probably think there are things that you just should avoid, I just think it's maybe not a good idea. Not because it will be harmful for the baby, but because you're going to get achy from it. (Bethan, interview 2)

I was about 25-26 weeks and I decided to stop [running] just because I was enjoying the swimming more. I was finding that where I was getting a bit bigger and starting to get odd twinges and things so I just thought that was probably enough. I decided that I would just stick to the yoga and swimming. (Katherine, interview 1)

The women engaged in an ongoing self-regulation process, evaluating their activities and continuously drawing on how they felt by listening to their body, which resulted in decision-making being an iterative process rather than linear. While they modified their activities this was not necessarily directly related to the advice and reveals how women drew on the process of contextualising information to fit their personal circumstances.

If my doctor for some reason said I really don't think you should be doing this and gave me a reason that I could understand, then I would reconsider the amount of activity that I carried out. I would probably just restrict it to walking if I was really struggling with it. But I found it was partly trial and error. (Lucy, interview 1)

I have actually looked up a little bit as well you know not much just on some of the pregnancy websites just checking, almost reconfirming what I think; you know making me feel a bit more secure in the decision that I've made to exercise maybe. (Bethan, interview 2)

In trying to weigh up the risks and benefits of their actions the women actively sought out advice or evidence that endorsed their chosen activities [5.4.3]. Subsequently, drawing on this information, enabled them to moderate their construal of potential risks through selective exposure[^97] which was evident in the data in three key ways.

Firstly, the women challenged the credibility of the evidence upon which the advice from health professionals was based and proposed this was often outdated and designed to avoid blame or litigation. This was evident, when the women wanted to do something that might be considered more vigorous such as horse-riding or running, the midwife and

[^97]: Selective exposure (Rogers, 1983), refers to how individuals tend to expose themselves to information that aligns with their interests, needs or existing beliefs and subsequently distort or downplay conflicting information,
GP erred on the side of caution. Because they weren't given a clear rationale for this advice, the women tended not to afford it respect, filtering out information that disconfirmed their intended exercise and sourcing alternative forms of endorsement [5.4.3]

Secondly, several of the women proposed that the risks posed to them were speculative and viewed the advice to cease certain activities with a degree of scepticism.

A doctor I went to see said ‘oh you should really stop riding now’ and I thought, but they all say that they say it all the way through. I have sort of avoided mentioning horses at all because I thought they have to say that they don't really know my situation. Don't know how comfortable I am I know that better, I don't need them to tell me not to. (Pauline, interview 2)

She [the midwife] thinks we just waft around like fairies, nobody knows what we do, my husband doesn’t know, my brother thinks I just go along and dance to YMCA all day. I don’t ask for their advice I know my body, I’m very in tune with my body. (Darcy, interview 2)

This was compounded by uncertainty in the lack of clear evidence or individually tailored information. This included downplaying the threat to them individually; in this way messages that were in conflict with the women’s inclination to exercise were consciously or unconsciously avoided. The third example was to propose that the benefits of continuing to exercise outweighed the potential risks.

Well yes my perspective is swimming makes you feel good. It has to be good I would imagine. Yes actually thinking about it at 24 weeks I was up in the Midlands with my cousin and I was swimming then may be an hour or half an hour a long swim and for me it was very much a case of in terms of exercise. I enjoy it I like it so that can't be that bad. (Gladys, interview 3)

I think it's all about measuring risk and how much enjoyment you get. I can't sit down and have a couple of glasses of wine but I can go and have a horse ride through the woods and feel really relaxed and energised, happy and calm. If I've had a stressful day at work so I think that's far better for me than sitting there stewing and stressing and working myself in a state. (Lucy, interview 1)

While drawing on reasons such as relieving stress or having a break or reward are plausible they could partially be an unconscious defence mechanism used to justify decisions and their continued desire to exercise. However, risk perception is highly subjective and, as the women highlighted, people take risks everyday such as going out in a car or even not exercising at all. They each assessed risk depending on their own individual circumstance, justifying decisions accordingly.
An additional resource the women drew on was what they conceptualised as **using common sense**.

> It was just knowing what I felt happy doing if I found something hard or didn't feel quite right I had a twinge, then I would stop so I think it was common sense a lot of it for me really. (Lucy, interview 2)

> I know how I'm feeling so I go by how I feel so it's just common sense, you shouldn't backflip shouldn't really cartwheel. I've been cartwheeling recently but I like to know how far I can push my body, I listen to it and if it can't do something then I stop. (Darcy, interview 1)

> There's an element of common sense that helps you decide whether to do it. I think the common sense kicks in that was how it was for me so with the riding I just decided it wasn't for me. I know some people do ride and I've got friends who are still riding that's their choice. (Katherine, interview 1)

What constituted **common sense** varied, resulting in decisions being subjective and justified through various strategies. While Katherine suggested it was common sense not to horse-ride, others thought it was okay; of note Katherine did later say:

> I mentioned about the riding the horse I ride is in my opinion completely safe and I trust him but it didn't fit comfortable with James. (Katherine, interview 1)

The contradiction in reasoning evident in the quotes from Katherine occurred frequently in the women’s interviews and was interpreted as highlighting the complexity and subconscious nature of decision-making. The uncertainty around pregnancy and lack of clarity in the advice the women received confounded the decision-making process. Justifying their decisions as being common sense offered the women an alternative way of rationalising their decisions.

**Protecting investments** they had already made in exercise was a dominant moderating factor requiring a balance between maintaining their ideal fit self and at the same time minimising the risk of potential injury from exercise and potentially being blamed for causing the baby harm.

> But there is that whole sort of guilt thing people thinking there must be a reason why they miscarry. If it's something that they did that could be construed as selfish, they don't want that sort of level of responsibility (Fiona, Interview FE).

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98 Drawing from the reflexive journal that was maintained throughout the analysis this could alternatively have been perceived as a degree of selectivity both in what they remembered and what they chose to reveal in the interviews.
Running outside I didn't feel very safe. I just didn't, I think from that point of view I felt vulnerable and I didn't want to put myself in a position if something happened I'd feel guilty or you know if I fell over you know. (Bethan, interview 2)

It's not about what other people think but the more people that know the worse it would be. If something did happen you probably would feel quite responsible. I did feel a little bit when I stopped riding when I made the decision I felt a tiny bit of a relief almost like phew I made it. (Pauline, interview 2)

In making decisions the women drew on perceptions of their future selves, influenced by the social interactions they had. Pauline’s quote highlights her feared possible self as being reckless and blamed for causing injury to the pregnancy. It is noteworthy that Pauline didn’t admit concern that her riding was potentially a risk prior to this.

The need to resolve dissonance was particularly evident around the point of having an observable pregnancy bump and thereby being more open to public scrutiny. The most common strategy used was endorsing particular beliefs about the circumstances or risks of exercising during pregnancy that supported continuing their chosen activity. Women often compared what other people were doing in pregnancy, using them as role models for acceptable behaviour. This engendered an element of endorsement to exercise, providing a degree of reassurance that it was okay. These examples of pregnant women who had participated in their chosen exercise and subsequently proceeded to have a positive pregnancy outcome further enabled them to justify their decisions.

There was a lady at the gym, who was pregnant and I thought, Oh good for her, so going to the gym falls into the category where I see people still exercising in pregnancy and swimming and yoga. I do know of one other lady in the running group who was pregnant and she ran. (Katherine, interview 1)

As illustrated in 5.4.1.2 some of the women also drew support by exercising with a friend who was pregnant which further endorsed their activity.

They might say don’t push yourself or be careful … mostly people are quite impressed that I’m still running. They couldn’t believe I’d gone for a, 20 min run after the day I had but then again I’m quite boring and sensible. I know not to push myself so maybe that makes others around me know that I'm not going to be silly either. (Bethan, interview 2)
I’m very stubborn I’ll just do what I want, my husband, well it’s his baby too so if he wasn’t happy with it I would stop but he’s really good he’s way better than I would be, because he trusts me. So he’s quite happy that if I’m happy then it’s okay which is really nice. (Pauline, interview 2)

Receiving positive encouragement and support from friends and family, including partners was also influential in making the women feel comfortable to continue with their chosen activity. Where this support wasn’t offered women often challenged the admonishing of what they were doing and looked for support elsewhere.

5.6.2 Assimilating and Accommodating

In order to resolve cross-domain identity conflict between the exercising self and the pregnant self and to attain identity balance, the women drew on the identity regulation processes of assimilation and accommodation. This involved a range of strategies which included passing\(^99\), justifying decisions and adjusting activities. These were all examples of self-identity regulation\(^100\) whereby they managed how they were perceived and portrayed to themselves and to others.

I think it would be really hard if you got mixed advice, particularly if you weren't completely confident in what you are doing. You would definitely err on the side of being more cautious and a bit shy to show people that you’re doing it. So I suppose it's about education making sure women know that it is safe and that it is the best thing to be doing. It's a shame isn't it really if you're embarrassed to show that you're doing something that is the right thing to be doing. (Ruby, interview 2)

As highlighted by Ruby, on occasions being under scrutiny and worrying what other people might think resulted in some women concealing their activities rather than facing disapproval.

When I found out I was pregnant we had two more games left so I played them, I was actually rather sneaky because I’m captain I managed to change my position it was really hot those evenings and it wouldn’t have been sensible so I decreased the amount I was doing sneakily. (Bethan, interview 2).

\(^99\) Passing is a sociological term for strategies to conceal belonging to a group to avoid stigma, in other words, passing as “normal”(Goffman, 1971)

\(^100\) Identity regulation refers to individuals’ efforts to control how they are defined, perceived and portrayed to themselves and to others (Schlenker 1980) this is discussed in more depth in 7.3.3
That's more with riding than with running because I haven't taken any risk with running. Certainly no one knew I was pregnant when I was running the marathon so they couldn't say anything, I'm sure they would have said something if they did know but I did look into that and I asked the doctor about that before I did it and he said ‘go for it’ so yes. (Pauline, interview 2)

Through passing women were able actively to avoid being exposed to conflicting information or advice to discontinue certain activities. This included either concealing their pregnancy or not reporting the full extent of their activities to health professionals. Of note is how Pauline’s quote suggests that she was not taking a risk because people didn’t know she was pregnant, which supports the earlier suggestion that her main fear was being blamed rather than sustaining an injury. While Pauline asked her GP’s advice regarding running a marathon in early pregnancy she later revealed that she had expected the GP to respond positively because she had asked him about similar things previously. In contrast, her midwife was a friend of her mother’s and knew that she rode her horses regularly. Neither Pauline nor the Midwife raised this in their appointments. This suggests people negotiate potential conflict by purposely avoiding discussing it. Similarly, Bethan was able to continue playing netball without facing disapproval, despite later revealing:

I know the English Netball Association don't allow it. After 12 weeks I think because I was captain I felt a bit more pressured to carry on (Bethan, interview 2).

This avoided people commenting on or admonishing their behaviour; clearly this is easier in the earlier stages of pregnancy. Passing or not disclosing pregnancy to friends or family until after 12 weeks was an example of doing pregnancy. This ritual of delayed disclosure meant that the sanctions accompanying pregnancy could be avoided in the early stages, with women feeling able to continue their usual exercise patterns. As in the examples above, once the pregnancy was disclosed or became visible this changed and the women found themselves open to public scrutiny and needing to defend their decisions to exercise. Prior to this they partially justified their behaviour by the fact that they were not going against other people’s advice. This highlights how a key concern was not that exercise was unduly risky but that their choice to engage in exercise might be blamed if a poor outcome ensued. This exposure to public scrutiny makes it increasingly difficult for women to assimilate their changing self-identity and subsequently they often resort to accommodating their ‘pregnant self’ by changing their behaviour.
The strategy of **justifying decisions** was intertwined and recursive with **selective exposure**, described in the previous section.

I always defend my decisions with lots of evidence why it’s important and really want to improve public perception. Hopefully things will change in the future. (Ruby, interview 2)

I think as long as you’re sensible about it and you’re not continuing with exercise in order to lose weight if anyone’s got that in mind in pregnancy. I think that’s just bizarre because you know you are going to put on weight and you need to sort of allow your body to grow to a certain extent. (Katherine, interview 1)

While they didn’t always verbalise **experiencing conflict** between social ideologies and their desire to exercise, the women commonly demonstrated this by **justifying their decisions**. Needing to explain their underlying motivations revealed a degree of defensiveness regarding their motives to exercise which often prompted them to clarify their reasons. This was particularly evident for those women who broke the rules and went against the commonly social ideologies of pregnancy. When this potentially challenged the social constructions of a woman as a **good mother** they felt obliged to establish their maternal morality by disavowing deviance.

While controlling weight gain was frequently cited as a reason to exercise, as evident in the quote from Bethan, (previous page) and Katherine [Table 5-6], the women were careful to justify their motivation. In some cases they initially denied that controlling weight gain was a reason for them to exercise in pregnancy. Comparing these quotes with later excerpts of their interviews often highlighted contradictions in their justifications to exercise. These were interpreted as trying to disassociate themselves from any implication of appearing vain or improperly obsessed with weight gain, while still aspiring to a positive body image and trying to maintain a balance between their ideal and ought self. This reflects some of the tensions women faced in trying to meet social ideologies around pregnancy that are discussed further in [6.4].

Another factor that influenced the women’s decisions was the degree to which they could justify the exercise owing to a long-term commitment. In Pauline’s case this was the

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101 This relates to the concept of self-regulation, whereby ‘actual self is who we are ‘ideal self” is who we would like to be and ‘ought self” the person one considers they should be (Higgins 1987). This proved to be a useful conceptual lever during the data analysis and is discussed in more depth in [6.3.4]
requirement to care for her horses daily and, for Darcy she couldn’t do her job properly as a dance teacher without using demonstration; this gave an element of endorsement to their activities. Likewise, Bethan didn’t want to let down her Netball team, of which she was captain.

In contrast some women were more accepting in accommodating their pregnant self through adjusting activities to align their exercising with activities commonly endorsed by social ideologies of pregnancy such as swimming or pregnancy yoga.

For the swimming I think just because it’s a good all over body exercise really but you’re weightless in the pool so it’s not too strenuous, but you are still working your muscles and that sort of thing really. So it’s just to keep active really try and keep or try and be as healthy as possible really. (Katherine, interview 1)

So after saying I wouldn't do yoga, because I had to stop swimming (due to pelvic pain) all I could do was walking and I came across a website which was, yoga for pregnant women, so I looked into and they said they wouldn't recommend it before 14 weeks but after that it would be good for the baby and it's good for the labour So I felt a bit more comfortable with doing it and that gave more a bit more reassurance and I started that. (Emma, interview 2)

They addressed the potential risk of injury and also the physical demands of pregnancy by continually adjusting activities and finding alternatives that were less demanding or ‘safer’ to replace their previous activities. For some, this meant changing their behaviour and stopping their usual activities.

It changes so much over the course of the pregnancy in the start you can carry on pretty much the same as you were before. But then if you don't adapt it and try to maintain your levels throughout the whole of the pregnancy that's not a very sensible way of approaching it is it. The piece in ‘Prima babies’ was about people trying to carry on too much and not adapting as their body changes. So it’s about changing those limits as you move through and depending on how your pregnancy is (Ruby, interview 2)

These examples suggest they were engaging in the process of accommodating their new identity domain, ‘the pregnant self’, in accordance with the constantly changing combination of personal and external influences. Thus, pregnancy necessitated modifying or relinquishing elements of self-identity and challenged women to examine the compatibility of elements of their previous self and to let go of elements that were incompatible with the new social status that accompanied pregnancy.
It's interesting how they reach a point when their priorities change. It's a different point for everybody they come one week and just seem more relaxed, it's a real turning point for them everything changes including the way they exercise they become a lot surer of themselves. When I say if there's anything we do that is not comfortable, tell me and can do something else.... when they reach this point, they seem much more able to do that so I see that with just about everybody. (Freya, interview FE)

The excerpt from Freya describes an interesting phenomenon she has noticed in the women who attend her classes which suggests that women reach a point in their pregnancy where they become more comfortable with their self. This could be equated to achieving identity balance and highlights how this occurs at different times in each woman’s pregnancy.

The extent to which the women’s activities conflicted with their beliefs varied across the study sample. It was most evident in those women who challenged social ideologies and continued activity, such as running or horse riding. Having prior experience of exercising enabled them either to normalise risk or alternatively take remedial actions to avoid injury. Often it was not possible to overcome entirely the challenges they faced and women’s choices were typically constrained by their circumstances. Ultimately they acted on their decisions by ceasing, modifying or justifying their chosen activity or finding an alternative form of exercise.

5.7 Consequences ‘Possible future selves’

As the women made the transition through pregnancy they continually contemplated their selves over time describing their past self, current pregnant self and possible future selves. Examples of possible future selves were interspersed throughout the preceding sections and therefore not repeated here but summarised in Table 5-8 below.

<table>
<thead>
<tr>
<th>Possible selves</th>
<th>Desired self</th>
<th>Ought self</th>
<th>Reference</th>
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<tr>
<td>Feared self</td>
<td>Regaining pre-pregnant self/back to normal</td>
<td>‘Good’ mother, what’s best for baby</td>
<td>Katherine pp.127</td>
</tr>
<tr>
<td>Feared fat self</td>
<td>Various [5.4.1.1]</td>
<td>Darcy pp.112</td>
<td></td>
</tr>
<tr>
<td>Bad mother (being blamed)</td>
<td>Pauline pp.161</td>
<td>Maintaining unique normality</td>
<td>Table 5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conforming to social pressures to lose weight postnatally</td>
<td>Lucy pp.116</td>
</tr>
</tbody>
</table>

Table 5-8 Examples of women's possible future selves
The feared self was evident in the data in two prominent examples: the feared fat self and the fear of being a bad mother. These demonstrate how women’s behaviour is influenced by perceptions of their future selves as well as the present. Not putting on too much weight was a significant motivator to exercise and characterised by how the women conceived exercise as an investment not only in relation to wanting not to lose the benefits they had gained to date but also in expectation for those it might bring in the future. However countering this was concern to appear not overly vain whereby they might be seen to put their wishes before the babies’. The concept of good or bad mother was evident in future desired and feared selves respectively which reflected women’s construction of doing pregnancy and their ought selves as drawn from social ideologies of pregnancy.

In terms of exercising, the women often referred to images of a desired future self which was predominantly focused on regaining elements of their former self.

I think we'll do baby yoga and any other exercise that I can do with him, I'll do what I can. But when I go back to work maybe I'll cycle to work, I'll fit it in around work and maybe swim in my lunch break. (Gladys, interview 3)

Yes you feel proud of yourself don't you even just being able to fit in. God knows if I'll be able to fit in exercise with two children though, but we'll see, maybe I'll have to get up in the middle of the night to fit it all in (Ruby, interview 3)

I know that I will always be someone who exercises for me, that's not really an issue. Long-term I'd never stop being active and being healthy (Lucy, interview 1)

They rarely discussed being a mother, which was not followed through theoretical sampling because the focus of this study was pregnancy. Nevertheless, it was evident that pregnancy was accompanied by varying degrees of uncertainty associated with the substantial changes about to take place in the women’s lives.

Owing to the nature of the research, this predominantly focused on exercising, whereby the women mainly expressed concern regarding the practicality of being able to continue to exercise while caring for a small child. They addressed this uncertainty by contemplating their future selves and how they might integrate exercise into their role as a mother. Furthermore, maintaining an exercise identity in pregnancy was motivated by
their desire to maintain exercising in the future, for which some had already set some long-term goals.

5.8 Moderating factors

The women’s capacity to address identity conflict was dependent on the presence or absence of a range of moderating factors. These influenced the decision-making process, and ultimately shaped their future selves. Examples of these have been included throughout the preceding sections and help explain the variation evident in the data when comparing women’s experiences and behaviours. These are divided into two groups of variables, Individual (personality) and Environmental (social context), as detailed in Tables 5-9 and 5-10.

<table>
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<th>Individual (personal)</th>
<th>Section</th>
</tr>
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<tbody>
<tr>
<td>Self-esteem</td>
<td>5.4.1.2</td>
</tr>
<tr>
<td>A strong sense of self-worth was demonstrated in how the women prioritised exercise and made ‘me time’. This was a reciprocal relationship through which women used exercise to feel good about themselves.</td>
<td></td>
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<tr>
<td>Body image</td>
<td>5.4.1.1</td>
</tr>
<tr>
<td>This interrelates with maintaining a unique normality and entailed maintaining important physical elements of their self-identity.</td>
<td></td>
</tr>
<tr>
<td>Salience of exercise identity</td>
<td>5.3.1</td>
</tr>
<tr>
<td>Strength and centrality of having an exercise identity included believing they had the competence and ability to exercise.</td>
<td></td>
</tr>
<tr>
<td>Previous experience</td>
<td>5.3.3</td>
</tr>
<tr>
<td>Instilled a confidence in decisions and was enhanced by previous exercise experiences (includes knowing your body). This enabled the women to assess and define personal limits and also develop strategies for dealing with change and conflict.</td>
<td></td>
</tr>
<tr>
<td>Protecting investments</td>
<td>5.4.1.2</td>
</tr>
<tr>
<td>Included maintaining fitness and avoiding injury. Perceived vulnerability to risk of injury included a perception of certain exercises as risky and also whether they had any specific pregnancy related contraindications to exercise.</td>
<td></td>
</tr>
<tr>
<td>Physical changes of pregnancy</td>
<td>5.4.1</td>
</tr>
<tr>
<td>The varied way these were experienced by the women was reflected in their influence on decisions and exercise behaviours. Managing the common symptoms of pregnancy was one way the women maintained a sense of control.</td>
<td></td>
</tr>
</tbody>
</table>

Table 5-9 The individual (personality) moderating factors
Table 5-10 The environmental (social context) moderating factors

Figure 5-7 overleaf illustrates the relationship between the main categories of the substantive theory it builds on Figure 4-7 (pp. 98) which demonstrated how women used exercise to negotiate their transition through pregnancy.

This chapter has illustrated the numerous ways in which women addressed the challenges to their desire to exercise through the process of Accommodating the pregnant self. The next chapter abstracts the substantive theory presented in this chapter and compares it with the existing literature, highlighting previously unexplored insights arising from these findings.
Figure 5-7 Explanatory model ‘Accommodating the pregnant self’
Chapter 6: Discussion

6.1 Introduction

The aim of this study was to develop a theoretical model demonstrating the factors that influence women’s decisions regarding exercise in pregnancy and how they process the influences and multiple alternatives they encounter. The resultant substantive theory of ‘Accommodating the pregnant self’ was presented in the preceding chapter, and summarised in a conceptual framework [Figure 5-7].

This chapter will theoretically compare and contrast the generated theory in the context of theoretical and empirical literature. It begins with an overview of the substantive theory and then theoretically situates the findings in the context of extant formal theories and existing literature. This builds on the orientation to the literature on exercising in pregnancy presented in chapter 2, that established what research had been done to date and provided a broad context within which to situate the study. As described in chapter 4, using the literature to develop theoretical sensitivity and as a third point of comparison was an integral and ongoing part of the data analysis. The literature sampled was guided by an enhanced theoretical sensitivity and the emerging theory which has resulted in this chapter engaging the substantive theory with extant theories of role transition and self-identity. This aims to provide a conceptual bridge between identity transition and decision-making, demonstrating how self-identity influences behaviour. Subsequently, it will explore how the women negotiated the conflicting identities of the exercising self and the pregnant self through the process of self-identity regulation and re-construction. Drawing on existing literature this chapter renders the emerging substantive theory in the context of existing knowledge that potentially strengthens its value (Urquhart, 2013). Simultaneously, this aims to make the unique contribution of the generated theory to current understanding more explicit (Charmaz, 2014).

For clarity, key categories and concepts are highlighted in bold and cross referenced to relevant sections in chapter 5 of corresponding data evidence defined by ‘[ ]’ brackets.
6.2 The substantive theory ‘Accommodating the pregnant self’

In the context of this study pregnancy is conceptualised as a transitional period during which women’s self-identity is modified and, concurrently, partially steers the decision-making process. It is the transitional nature of pregnancy itself and its impact on self-identity as opposed to the transition to parenthood that fundamentally influences decisions regarding exercise. Therefore, the focus of this thesis is on how women accommodate their pregnant self into their pre-existing self-identity and subsequently how this influences their decisions regarding exercise.

‘The exercising self’ was a salient and valued facet of the women’s self-identity, and identified as a key moderating factor. The women were highly motivated to protect investments they had made in their pre-pregnant self through exercise as they negotiated the physical, emotional and social transition imposed by pregnancy. Continuing to exercise enabled them to maintain a degree of continuity and control by enacting bodily agency that was integral to their sense of maintaining and, to a degree, regaining their past valued selves. The decision-making process was thereby concentrated on attempting to maintain some continuity between past and possible future selves while constructing and performing ‘the pregnant self’.

They also drew on exercise to normalise their childbearing experience including alleviating many of the common physical symptoms of pregnancy such as backache and nausea and to enhance their chance of having a positive birth experience. In this way they maintained elements of both their body image and body functionality which were integrally linked to their self-identity as an exerciser.

As women navigated the ‘in between-ness’ of pregnancy, their ability to exercise and consequently their exercise identity was threatened, arousing varying degrees of identity conflict. Firstly, the physical changes of pregnancy progressively necessitated modification of previous exercise behaviours and, secondly, social norms regarding behaviour in pregnancy predominantly discouraged exercise and promoted rest.

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102 The use of the term normalise in this thesis is clarified in section 5.4.1.2 and is used to describe the women’s desire to avoid being seen as behaving in a deviant way and fitting in with their pregnant peers it also incorporates having an uncomplicated pregnancy and birth and maintaining a sense of regularity in their life and self-identity.
Decisions were influenced by a complex interplay of contextual factors that included both individual (personal) and environmental (social context) moderating factors. A fundamental element of the environmental moderators was social ideologies or norms regarding exercise in pregnancy which had an overriding impact and influence on the other factors. The interplay of opposing influences embedded within the moderating factors emerged from the data as identity conflict between the two domains of self-identity, ‘the exercising self’ and ‘the pregnant self’.

Because pregnancy exposed women to public scrutiny and unsolicited advice regarding their behaviour, they faced disapproval if they challenged these ideologies which heightened identity conflict. Subsequently, women experienced a loss of autonomy regarding their decisions as pregnancy necessitated assuming responsibility for their future child's well-being as well as their own, further compounding their conflicting identities. In making decisions regarding exercise women drew on a range of strategies to deal with identity conflict. Embedded within this process was the universal desire to achieve a balance in the different domains of their self-identity including maintaining their individuality or distinctive self-identity while at the same time fostering a sense of similarity to other pregnant women and ultimately maintaining their unique normality. This theory highlights a duality in the factors that influence women’s decisions postulating that their identity characteristics result in a propensity towards their behaviour being steered by either internal (personal) or external (relational and environmental) influences.

Decisions regarding exercise were driven by the way women interpreted their environment, the meanings they attributed to their experiences of the transition process and its impact on their self-identity. They reacted to the personal and social challenges to their identity through the process of self-identity regulation accordingly determining the content and value of the multiple facets of their past, present and possible future self-identities. Through this process women gradually re-construct their self-identity accommodating their pregnant self and contemplating possible future selves against various self and social normative standards.

Ultimately, they acted on their decisions by ceasing, modifying or justifying their chosen activity or finding an alternative form of exercise. The extent to which they were able to
enact their desired behaviour and maintain their desired identity depended on the resources (individual and environmental) available to them. At times women’s choices to exercise were constrained by their circumstances typically resulting in them ceasing an activity owing to lack of information or support to continue. Women’s decisions were further complicated by the lack of clarity and consistency in the information they received, resulting in decision-making under uncertainty, both in respect to the credibility of the evidence available and the potential outcome of their chosen behaviour.

Accommodating the pregnant self has a strong dimension of time influenced by a constantly changing combination of personal and social influences. While the model [Figure 5.7] presents a linear process, in reality the steps are less clearly defined and often interacted and merged into each other. Therefore, the decisions women made were not necessarily final; as new events arose during pregnancy they needed to be taken into account and the decision-making cycle repeated. Furthermore, drawing on conceptions of past, present and possible future selves highlights the temporal context of self-regulation and motivators of behaviour. Subsequently, it is not only current self but possible past and future selves that steer decisions and act as motives to exercising and realising goals.

6.3 Theoretical underpinning of the substantive theory

The research was guided by two overarching questions identified from the literature review [chapter 2]. This subsequently resulted in the substantive theory drawing from two extant theories. Various theories of life transitions were used as conceptual levers to illuminate ‘how pregnancy\(^{103}\) influences women’s decisions and behaviour regarding exercise’. Role transition theory (Allen & van de Vliert, 1984) was subsequently used as a framework to define the context of the substantive theory ‘Accommodating the pregnant self’. Identity theories of self-regulation and identity construction were integrated within this framework to explain, ‘how women process the influences and multiple alternatives they encounter to choose a course of action regarding exercise in pregnancy’.

\(^{103}\) In this context this was looking at pregnancy as a period of transition and identity change.
The resulting theoretical model, therefore, draws from various streams of theories\textsuperscript{104} and research emerging from the divergent disciplines and methodological allegiances of sociology psychology and anthropology. The benefits of converging these understandings have only recently begun to be recognised (Deaux and Burke, 2010; Vignoles, 2011). However, there has been much theoretical debate regarding the validity of combining theories in this way (Hogg et al. 1995). Therefore, this section incorporates an exploration of the context within which role transition theory and identity theories are situated and critically analyses their congruence and compatibility.

\subsection*{6.3.1 Towards an understanding of self-identity}

The substantive theory is based on the premise that embedded within women’s decisions regarding exercise is a desire to maintain elements of their pre-pregnant selves as they develop their new pregnant identities and contemplate their possible future selves. The concept of self-identity is, therefore, a central tenet of this theory; this section commences with an overview of the multiple perspectives and meanings given to this concept and defines how this has been interpreted within this thesis.

Current understanding of self-identity construction is buttressed by numerous theories that specify how the various features of self-systems develop, interact and influence behaviour. Self-identity research has traditionally been divided across subject disciplines resulting in the emergence of two distinctive theories: sociology's identity theory and psychology's social identity theory. Much of this work has been criticised for being concerned with piecemeal theorising and the production of middle range theory rather than integrative holistic theoretical frameworks that incorporate multiple layers of analysis (Jaspal, 2014). Drawing on the salutogenic paradigm for health research this study has tried to avoid a reductionist approach and instead endeavoured to accommodate the complexity and multifactorial nature of women’s decision regarding exercise.

The symbolic interactionist perspective that guided this research [3.3.2] defines the self as fundamentally social in nature due to its being developed and maintained through social relations (Charmaz, 2014). The dynamic nature of social influences on women’s self-identity as they progress through the various transitions of the life cycle, results in

\textsuperscript{104} As evident in some of the reference dates used in this chapter this draws on some older seminal works which have been revisited in light of these contemporary findings.
this socialization being a lifelong process. While the model represents just one life event, it incorporates the past, transitioning and potential future self thereby highlighting the temporality of this process within the wider context of the life cycle. This builds on the notion of possible selves (Markus and Nurius, 1986) that represent women’s hopes and fears regarding who they might become, would like to become, should become, or are afraid of becoming in the future, thereby expanding identity to include future potential. These fluctuating identities are continually negotiated and coexist within a self that has a degree of continuity across time and place (Baumeister, 1998), and a fundamental need to maintain a coherent and consistent sense of self (Stryker & Burke, 2000; Swann, 1987).

Subsequently, self-identity consists of multiple identities that diverge across various dimensions including their centrality or importance, the extent to which they reflect actual or potential achievement, and their temporal orientation (past, present, or future selves) (Ibarra & Petriglieri, 2010). This is illustrated by the metaphor of a multidimensional ‘crystallized self’ that reflects the potential for new facets of self that may not be immediately apparent but is ready to be polished, cleaved, or transformed (Tracy & Tretheway, 2005). This fluid and multifaceted nature of self-identity, together with the desire for a degree of consistency, is illustrated in this study by the women’s descriptions of striving to maintain their unique normality [5.4.2]. This study has predominantly focused on two domains (facets) of self-identity: the exercising self and the pregnant self. However, it acknowledges that numerous domains are impacted upon by pregnancy and in reality many of these are inextricably linked.

The term unique normality captures the essence of the duality of women’s self-identity and is illustrated in the following quote:

‘an individual's reflexive sense of her or his own particular identity, constituted vis à vis others in terms of similarity and difference, without which we would not know who we are and hence would not be able to act.’ (Jenkins, 1996, pp. 29-30)

This highlights the role of self-identity on behaviour and specifically as a significant motivator for the women to exercise, a key tenet of the substantive theory. Furthermore, this quote proposes that self-identity is developed by individuals identifying ways in that they conceive that they are different from as well as similar to others. This duality was
expressed by the women in the study who sought reassurance that their pregnancies were progressing normally while simultaneously seeking recognition that they and their pregnancies were individual or unique. This need to maintain a sense of uniqueness and similarity to other pregnant women was demonstrated by Earle (2000), who highlighted the importance of the midwife woman relationship in enabling women to preserve a satisfactory self-identity by balancing these two elements. In this study exercise was used to maintain both features of the women’s self-identity [5.4.2]. Achieving a balance between these emerged as a key influence on their decisions regarding exercise.

The desire to be unique is well-established in self-identity literature, ‘individuals strive to maintain a moderate sense of difference relative to other people’ (Synder & Fromkin, 1980, pp. xiv). Seeing themselves as ‘exercisers’ was one way the women confirmed their uniqueness. They expressed a strong desire to maintain this unique element of their self and not let pregnancy overwhelm this. In resisting the assumed changes associated with pregnancy the women demonstrated some of the characteristics that comprise what Raphael Leff (2009) classified as ‘regulators’, characterised by their actions being aimed at retaining strong links with the pre-pregnant independent self. Raphael-Leff (2009) proposed that someone with an orientation towards being a regulator prefers to carry on as usual through pregnancy, owing to a reluctance to surrender their valued identity that is grounded in the competent functioning in the adult world. Maintaining this sense of autonomy and capability was an important motivating factor in the women’s decisions regarding exercise. The opposite of this orientation is a ‘facilitator’ characterised by women’s belief that their identity is enhanced by pregnancy and their forthcoming motherhood. While the women were keen to retain a degree of consistency in their identity in constructing their pregnant self they also exhibited characteristics of being a facilitator in doing what they deemed as ‘best for the baby’. Like many theories, maternal orientation is rarely so extreme as to fall at one end of the continuum and, as evident in this study, in reality women portrayed a combination of the traits. Nevertheless, this theory further highlights the impact of pregnancy on women’s identity and the varied perspectives they may take on this. Understanding how women navigate this transition has important implications for women’s longer term wellbeing and successful transition to parenthood (Roncolato & McMahon, 2011)
It was evident that a consistent motivator for the women to exercise through pregnancy was the overriding desire to retain a consistent sense of self by maintaining their unique normality [5.4.1]. The motive to attain self-identity continuity is evident throughout the wider literature (Breakwell, 1986; Brewer, 1991; Snyder & Fromkin, 1980; Vignoles, 2011) and also studies of pregnancy. A phenomenological study into the transition of pregnancy proposed that women retained and constructed a degree of order by emphasising the degree to which they remained constant despite the change imposed by pregnancy (Smith, 1999). The desire to maintain a sense of continuity is evident in Bailey’s (1999) work on identity change in the transition to motherhood. In her study the women varied in how much they valued continuity as opposed to change. Some were determined not to be ‘sucked into traditional notions of motherhood’ and thereby favoured assimilation, whereas others saw pregnancy as a watershed offering opportunity for change and had a greater propensity to accommodate their new pregnant identity. These examples could be considered to fall respectively into the orientations of regulator (favour assimilation) or facilitator (favour accommodation) described by Raphael Leff (2009).

In describing their reasons to exercise the women often described how they valued getting their old self back, suggesting that pregnancy had unanchored their self-identity necessitating them to engage in the processes of self-identity regulation. In the broad sense the term self-identity regulation incorporates the processes through which individuals moderate their appearance, affiliations and behaviours (Schlenker, 1980). The ultimate purpose is to achieve or maintain an overarching identity with respect to how, ‘they define and perceive themselves as well as how they wish to be defined and perceived by others’ (Shepperd et al. 2011, pp. 408). The women drew on a range of strategies [5.6.2] to attain the goal of aligning their pregnant self against tentative images of their ideal or desired future selves. These were directed towards either modifying their beliefs and behaviours or a combination of both.

While self-identity regulation is generally considered to be a lifelong process it is most apparent when someone experiences a threat to their self-identity (Breakwell, 1986). Research has demonstrated that this occurs in a variety of circumstances, the most common being when there is a shift in social circumstance such as life transition (Allen
& van de Vliert, 1984; Meleis et al. 2000). Other studies have focused on how changes
to the physical self can destabilise identity (Charmaz, 1991; Leventhal et al. 2003), and
more recently the impact of post-traumatic stress on self-identity has been recognised
(Bernard et al. 2015). Pregnancy potentially combines all three of these influences (social,
physical and psychological change) and thereby destabilise various elements of self-
identity, which highlights the importance of contextualising women’s decisions within
the temporary condition of pregnancy.

6.3.2 Pregnancy as a life transition
The process of identity change, passing from pre-pregnant self to future self as a mother,
manifest throughout pregnancy and continued through childbirth and the post-natal period
as the women became absorbed into their new social status. While they raised numerous
examples of their experiences of this transition this study has purposely focused on how
it influenced their decisions to exercise in pregnancy. It draws on theories of life
transitions to illuminate how constructing the pregnant self\textsuperscript{105} modified the women’s
relationship with exercise and how their decisions were influenced as a consequence of
their role/identity change.

Historically, much of the research into life transition processes has focused on social role
transition. This could partially be due to the fact that this element of identity is more
readily visible and available to study (Josselson, 1987). The research has traditionally
been divided across three key disciplines: social psychology, sociology and anthropology.
Psychologists have predominantly focused on the therapeutic implications of life event
transitions concentrating on the individual case and largely disregarding the impact of
social structures. Sociological theories of role transition have emerged from within a
variety of classic perspectives on social roles (role theory), the relationships between
social position and personal well-being (social stress theory), and the processes by which
social contexts shape individual lives (life course sociology) (George, 1993).
Anthropology in turn has focused on cultural meanings and practices (rites of passage).
While important to consider epistemological compatibility, the benefits of developing a
discourse between and within these subject disciplines provide an opportunity to

\textsuperscript{105} In this study the concept ‘constructing the pregnant self’ incorporates accommodating the physical,
psychological and social changes that arise through the transition period of pregnancy
strengthen the overall understanding of theories pertaining to role and identity from all vantage points (Deaux & Burke, 2010). This theory has drawn from several of these perspectives particularly role transition (Allen & van de Vliert, 1984) and the anthropological concept of liminality (Turner, 1979). Cognisant of the structure/agency debate within these disciplines and driven by the emerging substantive theory, this theory accommodates both the structural and individual influences on behaviour. Subsequently, the duality and interrelations of these two perspectives are an integral part of the substantive theory. While pregnancy impacts on the women's control and autonomy when making decisions regarding exercise rather than positioning the women as passive recipients, this theory demonstrates the ways in which the women demonstrated a degree of agency within the transition process.

Critiques of traditional theories of the transition of pregnancy highlight that most (e.g. Rubin, 1976 and Mercer, 1986) suggest a prescribed role and normative path often focusing on pathology at the expense of normal (Smith, 1999) and depicting transition as a series of tasks woman must master (Parratt & Fahy, 2011). These have tended to adopt narrow reductionist foci that neglect the full range of women's possible experiences. This is analogous to the dominant discourse of the medical model of care and much of the research exploring exercise in pregnancy. These generally view pregnancy as a physiological state evidenced by the predominant focus on physical outcomes and morbidity rates (Jette, 2011). This fails to acknowledge the enormous impact pregnancy has on women's self-concept, relationships and position in society and the accommodations they are required to make in the transformation from a woman into a mother. Parratt and Fahy (2011) suggest this model is inconsistent with contemporary midwifery philosophy in that it suggests women are passive recipients of social influences and health professional’s advice.

An alternative perspective is evident in Anne Oakley’s (1979, 1980) seminal work exploring the experience of pregnancy and transition to motherhood which highlights the social and emotional impact of pregnancy. This has served as a template for much of the contemporary feminist sociological research regarding the transition through pregnancy to date (Bailey, 1999; Deave et al. 2008; Earle, 2003; Lupton & Han, 2003; Nash, 2012; Warren & Brewis, 2004; Young, 1990). These subsequent studies offer a more holistic
picture of women’s experiences of pregnancy today and were a useful point of comparison with some of the experiences described by the women in the study.

The theoretical model [Figure 5-7] demonstrating women’s decision-making processes in relation to exercising in pregnancy is adapted from the ‘Model of Role Transition’ developed by social psychologists Allen and van de Vliert (1984) [Figure 4-7]. This assimilates a social interactionist perspective of role transition that accommodates the interplay of social positions, expectations and behaviours. The interdisciplinary nature of role theory is a key strength that has resulted in the term encompassing several aspects of self, enabling it to act as a conceptual bridge between the socio-cultural system and the individual (Biddle, 2013). However, while the model offered an accommodating framework upon which to develop the theory some modifications were required. The central tenet of role transition theory is positional status (Allen & van de Vliert, 1984) which only partially captured the experiences described by the women in this study. The model has, therefore, been adapted to accommodate more explicitly the physical changes inherent in the transition through pregnancy that impacted on body image and functionality as well as the social and psychological adaptations. Fundamentally, this has been achieved by expanding the concept of role to the wider concept of self-identity and redefining the sequential components of the role transition process accordingly, as illustrated in Table 4-18.

In addition, to illustrate the role of self-identity on the decision-making process, elements of identity theory have been integrated within the substantive theory. The resulting model enables an exploration of the various dimensions of the women's experiences of decisions to exercise in pregnancy. It adopts a systems-based approach that views behaviour as a product of multiple interacting variables by simultaneously integrating the influence of individual and environmental moderating factors alongside an evaluative feedback mechanism.

6.3.3 Self-identity transition and its influence on decisions to exercise
A key strength of drawing on role transition theory was that it illuminated the principal social and individual moderating factors that influenced women’s decisions and subsequent behaviours during pregnancy. In addition to these, Allen and van de Vliert
(1984) proposed three common characteristics that influence reactions to transitions and further helped to elaborate this substantive theory:

- Anticipation of the change
- Discontinuity between past and future role/self-identity,
- Extent to which the change is normatively governed.

Each of these were evident to varying degrees in the women’s descriptions of their experiences and how transition impacted on their self-identity. As highlighted in the findings [5.3.4], considering women’s anticipation of the change highlighted the extent to which pregnancy was anticipated or planned and the control women had in this process. This was an important consideration because unrealistic expectations about early pregnancy have been identified as an aspect of maternal care that requires greater attention and can impede women’s passage through the phases of transition (Darvil, 2010). Such unmet expectations have been implicated in postnatal depression (Beck, 2002) which highlights the long-term significance of self-identity transition on women’s wellbeing.

In explaining their decisions regarding exercise, the women commonly described pre-conceived ideas regarding their intended pregnancy behaviours that contributed towards their pre-pregnancy expectations. After the birth, comparing these with what they had done in reality highlighted that generally they had been surprised by how much they had been able to do. This highlights common perceptions regarding a degree of incongruity between pregnancy and exercise and the current cultural lag between lay public beliefs, social norms and research evidence.

The second factor that can influence behavioural change is the degree of discontinuity between past and future identities e.g. the extent to which previous exercise behaviours can be continued during the transition. During pregnancy the women experienced substantial physical changes that impacted on their ability to exercise and ultimately imposed a break in their usual exercise routines. Alongside this, their autonomy was compromised by the additional burden of being responsible for the well-being of the baby and the social expectations of pregnancy. The complexity of women’s decisions was compounded by the uncertainty that pervades pregnancy itself and the **conflicting advice**
and information they received. As highlighted in chapter 2 [2.5, 2.6] the challenge of determining a definitive answer to what constitute beneficial or conversely unsafe quantities or types of exercise in pregnancy has yet to be clearly addressed. The resultant uncertainty in the current evidence base regarding exercise in pregnancy further compounds the decision-making process for women and the clarity of advice health and fitness professionals are able to give them.

The self-identity transition emerging from the women’s experiences resonates with Charmaz’s grounded theory (1991) on chronic illness and ‘Losing a valued self’. Her theory identifies the inherent uncertainty in the process of experiencing a disrupted self through illness and the process of regaining a valued self. Although the women in this study were healthy, through the transition of pregnancy they described a similar need to retain elements of their valued self. This was particularly evident in relation to their identity as an exerciser and their desire to both maintain and regain the physical and mental benefits they achieved through exercise. While they perceived various immediate benefits from exercising in pregnancy much of this identity work was focused on their possible future selves. This was commonly referred to in association with regaining their body or getting their life back to normal in the post-pregnancy future [5.4.1]. This illuminates a new perspective from which to develop current understanding regarding decisions about exercise in pregnancy. To date no other studies have been identified that have taken this approach with respect to pregnancy, although some interesting insights have been demonstrated by exploring the impact of ageing and injury on exercise identity (discussed further in section 6.7).

In describing how they used exercise to maintain a sense of continued self, the women drew heavily on the importance of body image and controlling weight gain. The women’s physical extraction from their pre-pregnant self was illustrated within this study through their descriptions of the gradual but distinctive changes in appearance as pregnancy progressed [5.3.1]. This generated a range of new behaviours, both on an individual basis as they modified their activities and externally as other people changed their behaviour toward them. They drew on exercise during this period to maintain a degree of control and normality in their lives and specifically to maintain their self-identity. It was apparent that they conceptualised exercise as an investment that would enable them to ‘get back to
normal’ after the temporary phase of pregnancy. Thereby decisions were influenced by a desire to **protect investments** made in ‘self’ through exercise until the ‘pre-pregnant self’ could be regained or their future self constructed.

Embedded within their perception of pregnancy changes being temporary the women often mentioned their clothes, referring to the things they had worn prior to the pregnancy and the significance of being able to wear those again [5.2.2]. This is consistent with the literature on self-identity, Davis (1992) argues that dress forms a visible envelope for the self and serves as a visual metaphor for self-identity. Similarly Ogle et al. (2013) highlight how women use maternity dress to shape their self-identity during the complex liminal transition of pregnancy. Inherent in these references to **my clothes** is the sense of continued self and affirmation of their unique sense of style their clothes provided. Clothes also constituted part of the **self-regulation** mechanism through which women evaluated their changing body shape, both as they expanded in pregnancy and subsequently reduced post-partum. When pregnancy-specific exercising clothes were available, women considered these helped mark exercise as an appropriate activity for ‘the pregnant self’ [5.4.2.3] whereby clothes were used to endorse exercising in pregnancy.

In many ways pregnancy appears to provide a naturally imposed disruption to self as part of the transition to motherhood. While some of these changes are extreme, particularly the physical changes, the women recognised that these were relatively short term. This was inherent in how they often spoke about getting their old self back again and getting **back to normal** [5.4.1]. This makes pregnancy a unique transition process in that unlike most role transitions the required changes are temporary and predominantly reversible.

In some ways the women’s experiences mimicked the period of flux and self-identity plasticity known as the liminal phase of rites of passage (Turner, 1979). While they did not refer to themselves as liminal beings106 or ‘being in limbo’, the women conveyed several experiences that equated to the theoretical concept of liminality. In the early stages of pregnancy fear of looking fat rather than properly pregnant [5.5] was a common example of this ‘in between-ness’ whereby the transitory nature of pregnancy was

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106 Turner uses the term liminal being to describe a person who is in a liminal state (Turner 1979).
experienced as a state of liminality. **Uncertainty** was a common concern raised by the women in relation to both their pregnancy and birth, including the outcome of their pregnancy, the timing and nature of their birth, and the potential risk of developing complications in the pregnancy and birth. For women expecting their first baby, pregnancy was new territory surrounded by **uncertainty** compounded by the conflicting **advice** and information they received, which permeated the decision-making process. Those who were already mothers still experienced a degree of transition and **uncertainty** but were able to draw on previous experience that instilled self-assurance to exercise [5.3.3].

Uncertainty is an inherent component within Turner's theory of liminality, resolving uncertainty is also considered a fundamental goal of life transition processes (Selder, 1989). Several studies have drawn on the transitional concept of liminality\(^{107}\) in relation to pregnancy and motherhood to demonstrate the multidimensional nature of transitions, emphasising how each is characterized by its own uniqueness and complexity (Côté-Arsenault et al. 2009; Davis-Floyd, 1992; Hogan, 2008; Layne, 2003; Madge & O’Connor, 2005; Watson, 2011). These highlight how understanding the properties and conditions inherent in a transition process can enhance the support offered to women and their families, ensuring that this is congruent with their unique circumstances, and facilitates healthy responses to transitions.

Women realised that they would not return to exactly how they were before but wanted to retain the elements of their past self that they have attained through exercise. This is exemplified by how they used exercise to control weight gain in pregnancy and subsequently facilitate regaining their pre-birth weight. Being fat was a common feared self shared by all the women in this study to varying degrees [5.7]. This is reflected in many of the sociological studies looking at women’s body image in pregnancy and postpartum which highlight the moral culpability linked with negative social discourses about fatness (Earle, 2003; Hodgkinson et al. 2014; Lupton and Han, 2003). These studies

\(^{107}\)The concept of liminality which originates from early role transition theory contributes to the theoretical framework for the substantive theory but with its focus on ritual and rites of passage proved to be too limiting to fully explain the relationships within the data and subsequently the role transition model was identified as more applicable.
also highlight the significance to women of getting their bodies back both in respect to body image and ownership.

The focus on weight gain and body image may well be impacted by the demographics of this study's sample and the salience of their exercise identity, some research has found that body image in pregnancy is of variable concern. Earle (2003) supports the finding that women are apprehensive about bodily changes during pregnancy, but suggests conceptualising pregnancy as a temporary state increases acceptance of the physical changes. Seeing pregnancy as the only time that large body size is acceptable gives rise to the concept of pregnancy as an excuse to relax some of their usual self-regulatory standards. This was a common occurrence in this study which conforms with the sociological pregnancy studies highlighted above and Clark et al. (2009). These portray socially constructed ideals of the pregnant body viewed through constantly shifting interpretive frameworks (Lupton & Han 2003; Nash 2012) whereby the resulting mixed messages further complicated decision-making [5.4.2, 5.5] (explored further later in this section).

Reactions to the transition process are also influenced by the availability of a formal structure for defining the role and transition process and the extent to which the change is normatively governed. Early work on role transitions was based on the premise that these life events are normatively governed and predictable in both occurrence and timing. Consequently, socialisation provides the skills needed to master the transition and perform the new role effectively (George, 1993). Drawing from the women's experience [5.4.3] demonstrates a far greater heterogeneity with respect to the timing of motherhood and norms governing the transition period. This challenges these earlier assumptions and is supported by recent research on role transitions demonstrating that large proportions of individuals do not fit previous assumptions that transitions are patterned in predictable ways (Umberson et al. 2010). Key demographic changes with respect to pregnancy are the variability and rising average in maternal age for 1st pregnancies (ONS, 2014) and the rise in childlessness. Of note, the women in this study had a wide age range although the average of this equated to current UK statistics [5.2]. It has been suggested that uncertainties that accompany pregnancy are deepened by the values associated with having healthy children and may be intensified by women tending to have fewer children.
and waiting until later in life to become mothers (Miller, 2005). This value burden compounds the decision-making process for women, particularly when information regarding risks and benefits of exercise is both ambiguous and contradictory [5.5, 5.6.1, 5.6.2]. As a single 46 year old first time mum, Gladys’s narrative illustrated both this value burden and the heterogeneity described above [5.7].

An impact of this growing heterogeneity was that the women had less structured frameworks and supporting mechanism for the transition process. With respect to exercise this was compounded by the existence of a cultural lag [5.4.3] whereby public opinion and pregnant women’s exercise behaviours generally fall some way short of evidence-based recommendations. Numbers of women participating in sport and exercise for leisure are increasing (Rossing et al. 2014) and simultaneously health guidelines have progressively increased the recommended levels for exercising in pregnancy [2.3]. However, seeing pregnant women engage in moderate or vigorous exercise is still considered something of a novelty and potentially bordering on deviance (Wright, 2012); subsequently support frameworks are in their infancy.

As highlighted above, contrary to traditional life transition theories, the women did not have formal structured frameworks to guide their exercise behaviour. Instead they were theoretically free to decide what exercise they would do in pregnancy. However, the findings highlighted how social ideologies regarding pregnancy behaviours shaped the woman's construction of self [5.4.2] and subsequently influenced their decisions regarding exercise. In reality, to protect the integrity of their self-identity their decisions were often constrained by the social norms despite these not being based on current research evidence or recommended exercise guidelines. There is a dearth of current literature regarding how these normative frameworks influence exercising in pregnancy. While dated and methodologically vulnerable to critique\textsuperscript{108}, Baric and MacArthur’s study (1977) exploring health norms in pregnancy raised some interesting and innovative perceptions regarding social norms. Notably they specifically chose to look at pregnancy because they considered it a highly ‘formalised state in society’ (Baric & MacArthur, 1977, pp. 30). While the study occurred in the late 70s it is evident that pregnant women

\textsuperscript{108} The study aimed to determine common social norms and measure conformity to them during one-off interviews in pregnancy. The research methods used are not clearly explained and appear overly reliant on the accuracy of self-reported data.
are still subject to a degree of ritual and control (Nash, 2015; Snowden et al. 2011). However, this study’s findings and current literature suggest women have less structured frameworks particularly for supporting current recommendations to exercise in pregnancy (Jette, 2011).

Baric and MacArthur (1977) defined norms as outlining the behaviour of a person occupying a certain status or position in society and suggested that norms represent a social expectation that encompass a degree of sanction or repercussion for nonconformity. They identified three innovative aspects of a norm that might influence its coercive power: its historicity, social support and legitimacy. Historicity was defined as norms, whose origins are not known to people and are, therefore, part of their objective reality. The women often referred to using common sense to inform their decisions, which reflects this interpretation [5.4.3], and is supported by the argument that common sense embodies social norms (Ledwig, 2007). As will be argued in the next section, common sense is highly subjective in nature whereby women can draw on various constructions of knowledge to justify their actions. Social support, related to the degree of space or time the norm was given by the mass media, and also as a source of information directed at their study participants from close family and friends. Scrutinising popular media highlighted numerous examples of how social ideologies regarding exercising in pregnancy are portrayed and how they influenced the women in this current study was presented in the findings [5.4.2.3]. Ultimately these were based on the premise that the baby needs should be foremost and perpetuated lay opinion that exercise was risky. Finally, they deemed a norm to be legitimate if it was given direct support by a health professional. The women in their study generally conformed to this professional advice. However, this was less apparent with the women in this research who commonly questioned advice that was in opposition to their chosen behaviour [5.4.3]. While this could be explained by the differences in their sample group compared to this study it may be a reflection of the general growth of consumerism in health care (Klein, 2001) since the 1970s when that research took place.

Alongside facing ideologies of ‘good motherhood’ the women’s decisions were influenced by a desire to maintain their ‘normal’ or socially desirable appearance as represented by historical and cultural ideals (Longhurst, 2008). The women actively
sought to maintain their self-identity within the context of the varied perceptions of a **good mother**, while at the same time merging this within the complex web of the different roles and relational identities they endeavoured to accomplish. The literature (Nash, 2012) and social media (Crowder, 2012) both highlight how the images portrayed in the media exist outside of the lived reality of the ‘everyday’ women and fail to acknowledge the constraints and contradictions the women face when striving to attain these unrealistic ideals. While recognising her research draws predominantly from an affluent Melbourne population, Nash (2012) argues that it reflects how women’s bodies are increasingly subject to the ‘tyranny of slenderness’ particularly in the light of moral panic surrounding obesity in the West. This concern regarding fatness was evident in the women’s accounts and a significant motivator to exercise and return to their pre-pregnant self. The pressure to conform to this ideal required the women to engage in a degree of self-surveillance and **self-regulation** exemplified by how they judged their changing appearance [Figure 5-1].

This was complicated by the mixed messages they received, which is highlighted in current literature, whereby discourses of ‘taking care of your self during pregnancy’ are merged with ‘keeping sexy for a male partner’ (Dworkin & Wachs, 2009). This highlights how women were aware of the operating norms for physical appearance and behaviour and envisaged the gaze of others directed at any deviations from this. This dichotomy further complicates the transition to pregnancy and was evident in the categories of **exercising for body image** [5.4.4.1] and **being under scrutiny** [5.4.2.3].

The **uncertainty** engendered by the lack of a formal structured framework and the conflicting influences on their decisions resulted in the women drawing on a range of discourses when structuring their identity and contemplating decisions regarding exercise. The discourses were context specific and the extent to which they could be seen as empowering or repressive is the subject of much debate (Lupton & Han, 2003). Nevertheless, while the women expressed frustration in the lack of definitive information the contrasting interface between these discourses offered them a degree of creativity in constructing their **desired** (ideal) self. They demonstrated this in how they drew on certain discourses and dismissed others, the data suggests this occurred both consciously and unconsciously.
The model adapted from role transition theory facilitates an insight into the multiple interacting variables that influence women’s decisions; but not how they process these influencing factors. The evaluative feedback loop (depicted by dotted lines in the model Figure 5-7) offers a potential information processing mechanism that is evident in the original model proposed by Allen and van de Vliert (1984). However they do not describe this in significant detail and nor do subsequent applications and adaptations (Bredeson, 1993; Petty et al. 2011; Scholes, 2006). It is surmised that in adopting a systems model these assume that the consequence of reactions to role strain or learning contradictions go back into the system and influence subsequent transitions. The substantive theory draws on self-identity literature to help illuminate the processes of self-identity regulation evident in the women’s descriptions of their decision-making.

### 6.3.4 Regulating self-identity

Reflecting on the dynamic nature of decisions regarding exercise highlights how women’s decision-making entailed numerous iterations during the course of pregnancy. Decisions were based on the consequences of previous decisions and women’s shifting circumstances; as new events arose during pregnancy these needed to be taken into account and decisions adjusted or revisited accordingly. This is illustrated in the model by the two way arrows between the stages of identity change and the feedback loops Figure 5.7). These feedback the consequences of the reactions to identity transition and contribute to the moderating factors and contemplations of future selves. Consequently, drawing on the concept of self-identity regulation and integrating the process with role transition has facilitated the development of a conceptual model that facilitates a deeper exploration of the context, influencing factors and process of decision-making. The ensuing section will demonstrate how this has provided a conceptual bridge between self-identity transition and decision-making processes regarding exercise in pregnancy.

Role transitions have been highlighted as a useful context for exploring the dynamics and moderators of possible selves and self-identity regulation (Ibarra & Petriglieri, 2010). This is because they require re-aligning self-identity with future expectations of self (Hall, 1971), requiring individuals to ‘take stock, re-evaluate, revise, re-see, and re-judge’ (Strauss, 1997, 102). The first steps in this cycle were evident in how the women engaged in the continual process of information gathering and evaluation. This ranged from
evaluating how their bodies were changing through pregnancy [Figure 5-1], to **sourcing information** to determine pregnancy norms. This included drawing on **role models** [5.4.3] and considering ‘others’ opinions [5.6.1] through the various discourses available to them. Through this process they were able to determine self-standards or guides for behaviour against which to evaluate their identity change and subsequently inform their decisions regarding exercise. Decisions were often made tentatively and based on a ‘see how it goes’ premise, subsequently this was an iterative process through which continual re-evaluation informed future decisions.

Through this process the women contemplated and defined identity goals, assessing the potential consequences of their behaviour against two standards, normative and personal. Normative standards included the women’s perceptions of what most people would consider appropriate in pregnancy, e.g. yoga and swimming but not weightlifting or horse riding. In contrast personal standards were influenced by a combination of their individual characteristics and personal expectations drawing on issues of self-identity and self-esteem. This included setting goals for number of lengths swam or distance run in a set time.

Goal-setting tended to be focused on maintaining their body image and fitness through targeted weekly activity or monitoring weight gain. It has been suggested that exercise goals often change in pregnancy with a shift in focus towards health rather than fitness (Petrov Fieril et al. 2014). While trying to maintain a degree of fitness the women's decisions supported this, with goals shifting toward enhancing both their own and the babies’ general well-being [5.5]. Furthermore it was evident in this study that goals tended to be relatively short term, e.g. enhancing the birth experience and post-natal recovery as opposed to long term health goals. This highlights the incongruence of public health messages that promote exercise for longer term health gain and may explain why such efforts have failed to address current inactivity levels.

The substantive theory builds on the symbolic interactionist perspective that each individual comprises multiple selves (multifaceted self), whereby self-identity is largely defined as the various meanings attached to oneself (Stryker, 1980). These multiple identities vary across several dimensions including their centrality or importance, the extent to which they reflect the actual, ideal or ought self, and their temporal orientation.
The findings highlighted how the women evaluated their self-identity across several of these dimensions which further added to the complexity of their decisions. This is represented in the model below [Figure 6-1] that builds on the concept of a multidimensional ‘crystallized self’ to highlight how self is comprised of numerous facets or domains. The identity transition process commences with the multifaceted self being refracted by the prism of pregnancy and focuses on two of the refracted domains\(^{109}\), the existing exercising self and the emerging pregnant self.

![Figure 6-1 Model of identity transition and different self-identity domains](image)

**Figure 6-1 Model of identity transition and different self-identity domains**

The varied self-identity representations can be viewed from multiple domains such as the ideal, actual and ought self, and various standpoints that differentiate between whose perspectives are being considered (Higgins, 1987). This distinguishes between the women’s personal standpoint and her perception of significant others’ views such as partner, parents or close friend. The women evaluated their actual self, particularly in terms of the physical changes of pregnancy against desired or ideal selves as fit, toned

\(^{109}\) As previously highlighted [5.3.1] while the women identified numerous identity domains impacted by pregnancy (e.g. professional/working and numerous relational identity domains), this study has predominantly focused on two domains their exercise identity and the pregnant self.
and physically competent\textsuperscript{110}, both in respect to their past, present and possible future selves. Examples of considering others’ standpoints was evident in how social influences dictated an ought self (e.g. ‘good selfless mother’) that added another domain by which their identity was judged. In the course of accommodating their pregnant self, examples of self-identity regulation were clearly evident in how the women adjusted their behaviour to regulate how their pregnant exercising self was perceived by others. The women differed as to which standards they were motivated to meet; this has been offered as a potential explanation for the differences in individuals’ responses and behaviours in apparently similar circumstances (Baumeister, 1998).

This perspective also highlights how decision-making involves intrapersonal comparison between potential pre- and post-pregnant selves as well as interpersonal, such as drawing on role models. It has been suggested that the concept of possible selves and future goal setting demonstrates how self-regulation enables a link between the future and current behaviour (Baumeister, 1998). This study’s findings support that view and highlight the value of lifestyle interventions incorporating women’s future desires for their self-identity particularly in their anticipated short-term future.

How moderating factors influenced the different women varied across several combinations of their identity domains. The varied interpretations of their circumstances ranged from decisions focused on being fit slim, healthy and promoting self-esteem to those who were more heavily influenced by risk avoidance. Two distinct self-regulatory foci were evident in the data as illustrated in Table 6-1.

<table>
<thead>
<tr>
<th>Goal focused</th>
<th>Prevention focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting back into ‘old’ clothes (Ruby)</td>
<td>Avoiding excess weight gain/fatness (Gladys)</td>
</tr>
<tr>
<td>Running a marathon (Pauline)</td>
<td>Avoiding diabetes complications (Jane)</td>
</tr>
<tr>
<td>Having a normal birth (Emma)</td>
<td>Concealing activity to avoid being seen as deviant (Bethan)</td>
</tr>
</tbody>
</table>

Table 6-1 Comparing self-regulatory foci

\textsuperscript{110} This draws on how the women demonstrated a pride not just in the prowess they demonstrated through exercise but also in how this contributed to their ability to perform labour well and ‘achieve a normal birth’. This perspective is reflective of many maternity policy documents which highlight midwives’ role in helping women achieve a normal birth (RCM, 2014, ICM, 2014)
For some women, behaviour was goal focused and motivated by positive achievements. These women strove to align their self-identity with their ideal selves. In contrast, when prevention focused, the focus was more on security needs driven by avoiding feared possible selves. This foci perspective has been shown to explain how some individuals are more likely to adopt a prevention focus guided by the presence or absence of negative outcomes. In contrast others are more likely to have a promotion focus and be influenced by the presence or absence of positive outcomes (Brockner & Higgins, 2001; Lee et al. 2000). This suggests that determining women’s individual motivating foci prior to offering advice regarding exercise could enhance their engagement with the information given.

A fundamental criticism of the original formulations of the self-regulation construct was that it placed disproportionate emphasis on the individual while neglecting the social and environmental context (Contrada & Ashmore, 1999). More recent applications have taken a wider perspective highlighting the important consequences for a wide variety of health outcomes (Shepperd et al. 2011) and developed a deep understanding of the reciprocal relationship between self-regulation, self-identity and behaviour (Manzi et al. 2010; Oyserman, 2007; Strachan et al. 2015). With respect to exercise these have recognised how numerous factors might restrict a person’s ability to self-regulate. The findings presented a variety of practical factors that limited the women’s ability to self-regulate successfully with respect to health-promoting behaviours and, more specifically, exercise, including insufficient time, support, knowledge, or access to health-promoting resources [5.6.1]. This is reinforced by the studies summarised in section [2.8] whose findings highlighted similar barriers for exercise in pregnancy (Cramp & Bray, 2009; Evenson et al. 2009; Hegaard et al. 2010; Petrov Fieril et al. 2014).

There are also some parallels between the substantive theory and Cioffi et al’s research (2010) described in section 2.8. This further highlights how uncertainty and social expectations pervade this period and influence exercise behaviours and suggests that while women have been shown to self-manage exercise there is opportunity for this to be better supported. In contrast to this study, Cioffi et al. do not consider self-identity as an influencing factor and takes quite a different perspective, focusing on stages of engagement with exercise. While their study offers an interesting conceptual model of
the engagement process they do not describe how this was generated nor is any theoretical underpinning offered. Similar to the substantive theory they identified that women made compromises in their chosen activities to avoid injury to themselves and their babies. This is compounded by the perpetuation of myths and misconceptions resulting in decision-making often being based on conflicting and inaccurate advice. Their study highlights the need for women to have access to reliable information and support which strengthen each individual woman’s approach to exercise to ensure this is safe and effective (Cioffi et al. 2010).

6.4 Identity conflict

In focusing on women’s experience of the transitional process of pregnancy this study underscores the vulnerability of self-identity across this period of adaptation that is clearly highlighted in role transition theory (Meleis et al. 2000). The state of ‘in-betweenness’ enforced by pregnancy resulted in the women experiencing a disconnection between their past and future identities. They predominantly expressed this unanchored identity by describing their desire to regain their former self e.g. ‘get my old self back’, ‘be me again’ and ‘get back to normal’ [5.4.1].

While maintaining their exercise identity was one way that women were able to accomplish this desire, this further compounded identity conflict because of the conflict it generated with the pregnant self. In the process of regulating their self-identity the women described numerous conflicting influences [5.5] particularly between the exercising self and the pregnant self. Examples of the complexity of these various dichotomies were presented in the findings [Table 5-6] and are summarised overleaf [Table 6-2].
Table 6-2 Opposing influences on self-identity regulation and decisions regarding exercise.

This highlights the complexity of the various opposing cognitions the women constructed and subsequently negotiated with respect to exercising in pregnancy and regulating their self-identity. While this suggests a clear divide, in reality this was more complex, e.g. for both identity domains avoiding injury was important. The pregnant self modified exercise to prevent miscarriage while the exercising self was concerned not to sustain an injury that may prevent continuing to exercise. These conflicting identities further complicated their decisions with the most common dichotomy being the pressure to rest imposed by the pregnant self, conflicting with the exercising self’s motivation to exercise. This emerged as a degree of psychological unease or cognitive dissonance that was compounded by the uncertainty inherent in pregnancy.

Considering the options available to them and the possible consequences of these, the women drew on a variety of cognitive processes as captured by the sub-category weighing the balance. This highlighted numerous disjunctions within the women’s knowledge, beliefs and decision-making regarding exercising in pregnancy. Resolving dissonance caused by these conflicting influences and the uncertainty permeating pregnancy was an integral component of the decision-making process. Drawing on the theory of cognitive dissonance helped explicate these multifaceted cognitive processes. The principles of self-regulation evolved from early work on dissonance theory and consequently the two perspectives share several fundamental assumptions, such as the process of discrepancy detection, the arousal and reduction of negative emotions, and the motivation to change beliefs to reduce discrepancies (Aronson et al. 1999; Carver, 2004).
These two theories have been applied in numerous health related studies and subsequently contributed to a clearer understanding of determinants of attitudes and beliefs, the internalization of values, and the consequences of decisions (Harmon-Jones & Mills, 1999; Stone and Focella, 2011). In this study it was particularly useful for illuminating the strategies women drew on to address identity conflict and accommodate their pregnant self.

In contextualising the decision-making process within the transition of pregnancy the substantive theory has highlighted how self-identity is unanchored during this time and furthermore suggests that the dissonance is predominantly evoked by conflict between conflicting self-identity domains. The vulnerability of women’s self-identity through pregnancy transition is not a novel concept but builds on previous work in pregnancy whereby the analogy of a rollercoaster has been used to reflect the changes women experience in their self-identity (Darvil, 2010). The process of integrating maternity into a sense of self has also been conceptualised as women negotiating a ‘matrix of tensions’ (Oberman & Josselson, 1996). Similar analogies with respect to decision-making in pregnancy in general were previously highlighted [2.9].

On occasions, when identity is threatened by normative or personal views that oppose current behaviour, the integrity of self-identity needs to be affirmed (Steele, 1988). When women assess their behaviour against normative standards, behaviour is judged against commonly and consensually agreed benchmarks or social norms that determine the acceptability of behaviour. If the resulting outcome is adverse, behaviour can be justified as reasonable because it conformed to normative standards (Stone and Cooper, 2001). Personal standards of assessment are used less commonly; subsequently if the outcome is adverse, the conflict generated is more complicated to address and commonly results in decision rationalisation. This was a risk women took if they assimilated new information and pregnancy changes rather than accommodating normative behavioural expectations. If they exercise outside social norms and subsequently sustain an injury or experience a poor pregnancy outcome it is harder to justify decisions. Consequently they

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111 Chapter two highlighted how informed choices during pregnancy have been compared to: walking a tightrope (Levy 1999) or a double edged sword (Shelton & Johnson, 2006).
need to be prepared to take responsibility and possibly blame for their behaviour and may try to rationalise their behaviour accordingly. This was expressed as a feared possible self as being reckless and blamed for causing injury to the pregnancy, the **bad mother** [5.7].

In their self-standards model of dissonance, Stone & Cooper (2001) suggest that during periods of change and uncertainty, the ‘self’ influences decisions by drawing on these self-standards or guides for behaviour to determine the appropriateness of behaviours and thereby maintain a coherent self-identity. Within the substantive theory having an exercise identity was identified as both a key moderating factor and antecedent condition, the value placed on this domain of women’s self-identity strongly influenced exercise behaviours in pregnancy. It was evident that women with a strong exercise identity were more likely to have the confidence to set personal standards. In contrast, other women were more strongly influenced by normative standards. Regardless of this propensity, while their exercising self was challenged by pregnancy exercise offered each of them a degree of continuity and control over their changing self-identity [5.4.1].

To date no research has been identified that specifically explores how identity conflict in pregnancy impacts on decisions regarding exercise. Several studies have explored how elite athletes manage the multiple identities of athlete and mother but these predominantly focus on motherhood rather than pregnancy (McGannon et al. 2012; McGannon & Schinke, 2013; Palmer & Leberman, 2009; Pedersen, 2001). While drawn from an extreme subgroup of elite athletes these women’s experiences accentuate those from this study particularly with respect to the conflict arising between their identity as an exerciser and social expectations of the ‘good selfless mother’. They also highlight how public perceptions are changing as the gendered nature of elite sport and family life are subject to challenge through various gender equality discourses (Hollway, 2015; McGannon & Schinke, 2013). In addressing the challenges to continue to exercise, the studies unanimously positioned women as active agents who resisted social norms and accepted conventions that women and particularly mothers have less access to sporting leisure activities. Instead the women prioritised and compromised to achieve their desired activities and justified this by highlighting the benefits to themselves and their families. In this study the women demonstrated this in how they described and prioritised ‘me time’.
Commonalities with respect to identity conflict are apparent in other subject fields which this study has the potential to build upon and develop further insights in pregnancy. The most notable of these is a grounded theory study\textsuperscript{112} by Ladge et al. (2012) that explored cross-domain identity transitions and the role of possible future identity structures in restructuring identity. Taking a grounded theory approach, Ladge et al. (2012) explored how women experienced the identity transition process from childless professional to working mother. In order to recognise the complexity of cross-domain identity transitions their work builds on an adapted definition of identity transition drawn from identity change literature and the theory of liminality. This highlights the complexity of cross-domain transition compared to sequential identity transitions upon which much traditional theory is based. The uncertainty regarding what ‘unforeseen changes the new identities may wreck on one another’ (Ladge et al. 2012, pp. 1451) highlights how the relationship between identity domains is intertwined and recursive. While they do not refer to Allen and van Vliert’s theory of role transition upon which this substantive theory is constructed, their model bears some striking similarities. In particular in that it includes how pregnancy triggers identity uncertainties and reactions to identity changes as well as personal and organisational contextual influences (comparable to moderating factors).

The key finding was the identification of three distinct reactions to the uncertainties women experienced: rejection of identity change (17%), delaying working through identity changes (27%), and actualisation of identity changes (57%).\textsuperscript{113} This highlights how women draw on images of possible future selves to resolve the uncertainties they faced. Furthermore, their work supports the substantive theory in underscoring how contextual influences shape women's sense of self and impact on reactions to identity transition.

Ultimately, the most adaptive response to identity conflict is considered to be a state of identity balance, conceptualised as a dynamic balance between identity accommodation

\textsuperscript{112} This study is from business and management science.

\textsuperscript{113} Although the % figures do not bear any statistical significance they give an overview of the spread across the sample 30 women in this study, however, how these were determined is not clearly demonstrated. To accommodate how experiences may differ depending on the stage of pregnancy. The sample were stratified into three trimesters taking a longitudinal approach may have been more meaningful.
and assimilation (Breakwell, 1986). The following section explores how the women strove to achieve this.

6.5 Strategies for ‘Accommodating the pregnant self’

Social psychological theories postulate that self-identity changes are regulated by the universal psychological processes of accommodation and assimilation (Breakwell, 1986; Piaget & Inhelder, 2007; Whitbourne, 2002). These were evident in the women’s reactions to identity-discrepant experiences that commenced with identity assimilation whereby they sought to verify pre-existing beliefs about themselves, prior to making changes in the self. When this was not achievable they engaged in varying degrees of identity accommodation. According to identity theories this is generally only used when identity assimilation fails, because modifying information is easier than modifying self (Block, 1982). In all cases a degree of identity accommodation was unavoidable and necessitated adjusting and reorganising their existing identity to accommodate the new ‘pregnant self’. Pregnancy necessitated modifying or relinquishing elements of self-identity and challenged the women to examine the compatibility of elements of their previous self with their new social status of impending motherhood.

This was characterised by how women processed their ‘pregnant self’ identity which engendered numerous physical, social and relational changes to their existing identity contents [5.4.2]. In some circumstances they accommodated change by adjusting their behaviour to resolve identity conflict, this was chiefly apparent on the occasions when their partners expressed disapproval and suggested their exercise poses unwarranted risk to the pregnancy [5.4.2.1]. Despite expressing a desire to continue to exercise it was relatively common for the women to modify their activities to accommodate external influences rather than it being necessitated purely by the physical challenge of pregnancy. Examples of individuals conforming to social norms even when they go against their belief system have been explained by their wish to meet others’ expectations, to avoid sanctions or punishment for deviance, or to create a sense of belonging (Asch, 1956).

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114 It is recognised that this was probably a more complex identity conflict which involved not just the exercising self and the pregnant self but also drew on the women’s relational identity as wife or partner. However it is beyond the perimeter of this theory and, therefore, will not be pursued further. Nevertheless, I have remained cognisant of the potential implications of the over simplification of the process resulting from looking at just 2 identity domains.
Women’s decisions regarding exercise were clearly influenced by the pressure to conform to social ideologies and meet ‘normal’ expectations maintaining the integrity of their ‘pregnant self’ identity.

Behavioural change in accordance with new information might be considered the most rational approach to resolving dissonance arising from identity conflict. However, conversely cognitive dissonance theory is based on the premise that the adjustment of beliefs to fit behaviour is more apparent in reality (Festinger, 1957). This explains how the need to alleviate irreconcilable ideas commonly stimulates the development of internal justifications and subsequent adjustment of beliefs to resolve the dissonance. The women demonstrated several forms of identity assimilation that protected their positive self-attribute and helped them to maintain a sense of self-consistency. These included self-justification, selective exposure and perception and rationalising. This was evident in the numerous strategies used to source information regarding exercise in pregnancy, enabling them to modify their beliefs rather than their behaviour [5.6.2]. Information gathering in this way is considered a characteristic reaction to cognitive dissonance that enables a personal standpoint and subsequent actions to be determined (van de Vliert, 1984). It is important to recognise that this was not an isolated process but built on the antecedent knowledge and resources the women had developed and was ongoing throughout the transition period.

As previously highlighted, [6.3.3] the lack of a formal structured framework and conflicting information enabled women to draw on a range of discourses, thereby presenting a degree of creativity in constructing evidence to inform decisions. This enables certain risks or benefits to be purposely ‘selected’ to support a specific argument; whilst others are overlooked. This form of self-justification (Douglas & Wildavsky, 1982) was evident in the data for some but not all the women. This suggests that a conscious decision was taken to focus on specifically selected criteria to underpin decision-making. In reality the decisions regarding exercise were more complex than this, informed by ongoing impressions and understandings that merged to form a sense of risk. In addition to selectively seeking information to support their behaviour, perceptual distortions appeared to influence judgment in such a way that advice or information that aligned to
the women’s own attitudes was more likely to be evaluated positively while, in contrast, if relatively distant from their attitudes, evaluated negatively or dismissed.

**Selective exposure** or **passing** was evident on the occasions when the women and health professionals avoided discussing exercising rather than raise an issue that could be contentious and highlight a discrepancy of opinion [5.6.2]. Similarly, not disclosing their pregnancy enabled women deliberately to avoid advice that might go against their desired behaviour. This suggests women act in ways that control others’ impressions of them, which is consistent with Goffman's dramaturgical theory (1971) and was evident in the women’s desire to portray a ‘normal’ identity rather than be seen as deviant or labelled a **bad mother**.

The tendency to draw on ‘common sense’ as their rationale for decisions [5.6.2] further supports the notion that women are not immediately aware of the source of their beliefs, feelings and expectations. While the process of rationalising decisions is widely recognised as common behaviour (Tsang, 2002) it highlights significant concerns when applied in the context of this study. It suggests that in some ways women could be deluding themselves about the fidelity of their decisions. If these are unconsciously influenced by cognitive, perceptual and motivational biases this could potentially result in regret should an injury subsequently occur.

One way to tolerate the unsettling uncertainty of pregnancy and birth is to strive to find and follow the right set of “musts” and “mustn’ts,” so that all will be well (Lyerley et al. 2009). However, one of the challenges women and the professional who advise them face is the lack of definitive evidence regarding safe exercise limits in pregnancy [2.6]. While such a prescription is unattainable much advice seems to be based on this premise, and was apparent in the advice women received whereby the boundary of ‘dangerous v safe’ and ‘reckless v responsible’ were shaped in capricious and unyielding terms. Pregnancy and birth carry significant litigation and reputational risks for professionals which is evident in the ‘litigation based practice’ within society. It has been suggested that these risks are managed through adherence to (and encouraging women’s compliance with) protocols and guidelines to reduce professional and organisational exposure to costly medico-legal risk (Dahlen & Homer, 2013). This is highlighted in Hollins Martin et al. (2004), theoretical model of ‘social influence in a midwifery context’ that highlights how
midwives find choice provision for childbearing women challenging owing to the imposition of trust protocols and the hierarchical culture of maternity care. When reflecting on resources to inform their decisions the women in this study drew on this premise that professionals err on the side of caution, this enabled them to downplay advice received from professionals when it went against their desire to exercise. Despite this approach they were often left with a degree of unresolved ambiguity that compounded the decision-making process.

While this might be inevitable to a certain degree it does suggest that if women were able to access more trustworthy information that was individualised to their personal circumstances they could be empowered to make better informed decisions. Likewise if health professional and fitness staff felt more empowered they could engage in more open discussions rather than being inhibited by concerns of litigation [5.4.3]. According to Lyerley et al. (2009) rather than advice in pregnancy being based on a balanced consideration of risks and benefits, constraints are founded on an imagined or theoretical risk. This fails to give due consideration to data supporting safety and possible benefits. The findings demonstrate that women often drew on this assumption to justify their decisions. Rather than accepting such nebulous advice the women sought alternative evidence to enable them to make a judgement that fitted their individual circumstances. The women also highlighted that health professionals were in their opinion not well informed and lacked time to give comprehensive advice. This was evident in the Royal College of Physician’s report (2012) which concluded that the current lack of knowledge and practical skills to deliver exercise-related advice should be addressed through medical education. Current research and policy highlight growing recognition of the midwives role in improving the health of mothers and babies and the need for midwifery managers, educationalists and the public health team to collaborate to address this (Crabbe & Hemingway 2014).

The challenges to women’s autonomy in making decisions is comparable to other aspects of pregnancy when selecting options that deviate from the normal pathway in pregnancy such as having a home birth (Coxen et al, 2014) or a vaginal breech delivery have led to suggestions that they are acting selfishly (Wiseman, 2013). In self-regulating their unique normality women strike a balance in their desire to be different from others but to do this
in a socially acceptable way to avoid being ostracised for extreme deviance. They, therefore, need to walk a line between adopting behaviours that define distinguishing characteristics while conforming to social norms imposed by social groups to avoid rejection.

In suggesting that the women drew on rationalising and self-justification strategies it is not the intention of this thesis to imply that the women deliberately ignored risks associated with their chosen activities. Instead they took measures to reduce risk and while they acknowledged that an element of risk was involved they considered this comparable to other risks people take such as the risk of a car accident or falling down stairs. The concern it raises is that in striving to resolve cognitive dissonance there is the potential to unconsciously ignore or dismiss a potentially serious risk particularly when advice is conflicting, unclear or not individualised to their personal circumstances. Subsequently, what this thesis highlights is the importance of ensuring that women are empowered with accurate information.

An alternative strategy women used to deal with identity conflict was drawing on social support networks and role models to help steer them through the transition of pregnancy. It was apparent that the women were able to gain validation for their activities, hopes and fears by sharing experiences and drawing on others’ advice [5.2.3]. There were also multiple examples of empowering relationships ranging from those within the running club and internet forums to walking with a friend that fostered a sense of belonging and congruency with others. Through these networks the women gained general companionship through exercising with others that also validated their exercise behaviours.

One function of communication among women is considered to be to establish the pregnant woman as "socially pregnant." (Bird, 1994) How the women engaged with this was captured in the category doing pregnancy whereby through these networks they attained this “social pregnancy” as people responded and related to them as a pregnant person and/or future mother. Through these communal connections the women acquired a sense of how ‘to be’ in society and how ‘to do’ pregnancy that helped them to deal with a wide range of new experiences including disconcerting situations, such as when strangers subjected them to scrutiny regarding their exercise behaviours. An example of
the solidarity shared amongst women as they pass into motherhood was the feeling of kinship with other women whom they encountered at yoga and antenatal classes. Internet forums were also commonly used as a way to express anxieties and share concerns and beliefs with other like-minded women. The supporting social experience offered by these networks can facilitate a psychologically healthy approach to dealing with the uncertainty and fears surrounding the transition of pregnancy (Côté-Arsenault et al. 2009).

These strategies reflect one of the principles of the theory of liminality, ‘communitas’ through which individuals in an unstructured egalitarian social world undergoing rites of passage share an intense solidarity (Turner, 1974). This community of support reflects the needs of those in the liminal state and may represent issues that are not always obvious or visible. Consistent with Turner's definition of Communitas being ‘anti-structure’ these networks can also generate support for women to engage in activities outside of societal norms; women looking for guidance find these communities supportive and instructive. Such networks could be virtual such as the internet-based baby forums the women accessed, as well as the structured antenatal classes they attended, and current pregnant friends. These networks offered women another opportunity to address disparities between their desire to engage in certain activities and the advice they were given.

By attaining a state of equilibrium, women are able to facilitate changes when their self-identity is challenged while simultaneously maintaining a consistent sense of self. While recognising that women’s self-identity is composed of numerous potential competing domains, including her role as partner, daughter and professional identity this theory focuses on the two domains that emerged from the data analysis as the most influential on their decisions to exercise. This resulted in focusing on the conflict between the exercising self and the pregnant self alongside the women’s tentative images of their possible future selves. Through this theoretical lens three potential future selves became apparent ranging from the mother (who may retain elements of the exercising self) to the exerciser (who happens to be a mother) and resting between these the exercising mother. Building on the earlier figure [6-1] this concept is illustrated overleaf [Figure 6-2] and suggests that an ideal balance would be ‘the exercising mother’ achieved by the two domains being in harmony. In reality it is likely that the women would move along a continuum between these two extremes influenced by the way they interpreted their
environment, its impact on their self-identity and the constantly changing combination of personal and social influences.

How each woman managed identity conflict varied depending on the salience of their interrelating identity domains of exerciser and mother. They maintained a balance between the two identities by negotiating the conflicting influences they faced.

6.6 Exploring the duality of personal versus social influences

Certain facets of self-identity may render other influences such as social norms as more or less influential on intentions. Throughout this chapter reference has been made to various characteristics that influence self-identity re-construction and regulation, and subsequently decisions regarding exercise in pregnancy. While these constructs are derived from a variety of theoretical streams each can be roughly classified into either personal/individual or social/environmental motives. The resulting ‘character’ types are purely conceptual, offering extreme ends of a potential spectrum within which women
might be located. Nevertheless this offers a useful framework within which to explore the various dualities that influenced women's decision-making.

The following two examples are drawn from the study interviews to exemplify these contrasting identity types. The classification is merely theoretical relating to elements derived from the substantive theory and is not suggestive of the women’s overall personalities. These may well vary depending on which identity domains are drawn on.

‘Accommodator’

Jane had a tendency to be influenced by social/environmentally derived motives, her pregnant self was easily accommodated into her self-identity partly because her exercise self was comparatively weak. Health was the key reason for Jane to exercise having been sanctioned by her GP to lose weight because of her diabetes and abnormal liver function. All of her exercise was in a supervised class situation and she happily followed advice to give up Zumba and took up pregnancy-specific classes instead. Her feared self was her past fat self and she worked towards avoiding this, particularly the concern that people might mistakenly think she was fat rather than pregnant.

Having a tendency towards identity accommodation can result in women being overly responsive to external influences, seeking guidance from others as sources of self-definition and thereby being more readily influenced and shaped by pregnancy. This manifests in two ways; external influences and social norms led to some women giving up usual exercise activities and in contrast encouraged other women who did not normally exercise to take up activities such as aqua-natal and pregnancy yoga. Drawing on her work on self-identity change and ageing Whitbourne (1986) suggests that when extreme the resulting lack of internal constancy can lead to being plagued by self-doubt and low self-esteem. Within the sample none of the women was on the extremes of this

115 All the women in the sample had exercised previously but they spoke of women they knew who took up activities in pregnancy [5.4.2]
accommodation-assimilation continuum. Instead decisions were informed by specific situations and the value assigned to the specific element of their identity being challenged.

‘Assimilator’

In contrast to Jane, Pauline was strongly influenced by personal/individually derived motives, her motivation to exercise was predominantly intrinsic and directed towards achieving goals. She did all her exercise alone and found it challenging to accommodate her pregnant self alongside her exercise self drawing more on assimilation and strategies to avoid advice or information to give up running or horse-riding. Her feared self was being blamed; if something went wrong that could be attributed to her exercising. One way that she addressed this was by not disclosing her pregnancy or later the specific details of her activities. Nevertheless she did modify her activities to a degree to accommodate the physical changes of pregnancy and to reduce potential risks.

Women with a propensity to assimilate changes rather than modify their behaviour were less likely to radically change their exercise behaviours because of social norms. They tended to approach pregnancy by seeking out information that was consistent with their current identity schemas. As evident in the data this stance was motivated by a desire to maintain their *unique normality* and to avoid negative stereotypes such as being labelled ‘mumsy’ or ‘frumpy’, a status that is associated in Western society with pregnancy (Earle, 2003; Nash, 2012). This was exemplified by how they were selective in where they sought information and their exercise environments. This included seeking out endorsement to exercise from professionals who they felt, would be like minded, and avoiding disclosing their activities to others who they felt might disapprove or reprimand them [6.5].

Subsequently, identity assimilation can involve women twisting (distorting) their perceptions so as not to have to change their view of self. Whitbourne (1986) suggests that self-justification is a common assimilation process for addressing *identity conflict* when body function becomes compromised and highlights both the pros and cons of excessive use of identity assimilation. While pride in their accomplishments may contribute to high self-esteem, overuse may result in social isolation, failure to compensate adequately for physical changes and subsequently undertaking potentially
harmful physical activities alongside exhaustion from the strategies used to deal with identity conflict. Conceptualizing the accommodation-assimilation process as a memory system reveals a propensity for it to be subject to bias in both retention and recall. Furthermore, Breakwell (1986) suggests these information-processing systems are biased towards self-interest rather than accuracy. This highlights the importance of tailoring advice to women’s specific circumstances whereby they are more likely to give the information careful consideration as opposed to dismissing it as not relevant to their situation.

Table 6-3 summarises the various characteristics arising from the data that influenced self-identity re-construction and regulation, and subsequently decisions regarding exercise in pregnancy. These are classified into either personal/individual or social/environmental motives. While there is a tendency for personal or social attributes to correspond, as evident in the data, in reality women demonstrate greater heterogeneity drawing on different combinations of these characteristics.

<table>
<thead>
<tr>
<th>SOCIAL/ENVIRONMENTAL MOTIVE</th>
<th>CHARACTERISTIC</th>
<th>PERSONAL/INDIVIDUAL MOTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOMMODATOR</td>
<td>Reaction to identity change</td>
<td>ASSIMILATOR</td>
</tr>
<tr>
<td>Pregnant self</td>
<td>Self-identity salience</td>
<td>Exercising self</td>
</tr>
<tr>
<td>Environmental (social context)</td>
<td>Moderating factors</td>
<td>Individual (personal)</td>
</tr>
<tr>
<td>Health</td>
<td>Reason to exercise</td>
<td>Personal achievement</td>
</tr>
<tr>
<td>Normal/similarity</td>
<td>Unique normality</td>
<td>Unique/different</td>
</tr>
<tr>
<td>Normative standards</td>
<td>Self-standards</td>
<td>Personal standards</td>
</tr>
<tr>
<td>Avoiding feared/ought possible selves</td>
<td>Align identity with</td>
<td>Achieving desirable/ideal possible selves</td>
</tr>
<tr>
<td>Prevention focused</td>
<td>Self-regulatory foci</td>
<td>Goal focused</td>
</tr>
<tr>
<td>Security needs</td>
<td>Motivated by</td>
<td>Growth and development Internal, intrinsic incentives</td>
</tr>
<tr>
<td>External, extrinsic sanctions, incentives or regulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seek endorsement and social support</td>
<td>Strategies to address identity conflict</td>
<td>Selective exposure and selective perception</td>
</tr>
<tr>
<td>Modify or cease usual activity</td>
<td>Consequence of pregnancy on exercise behaviour</td>
<td>Continue to exercise</td>
</tr>
<tr>
<td>Controlled</td>
<td>Nature of decisions</td>
<td>Autonomous, take responsibility</td>
</tr>
<tr>
<td>Compliant, good selfless mother</td>
<td>Social discourse</td>
<td>Deviant, irresponsible mother</td>
</tr>
<tr>
<td>Mother</td>
<td>Future identity</td>
<td>Exerciser</td>
</tr>
<tr>
<td>who may exercise</td>
<td></td>
<td>who is a mother</td>
</tr>
</tbody>
</table>

Table 6-3 A comparison of identity characteristics and individual affinities.
There was a tendency for women with a strong self-identity as an exerciser to continue exercise regardless of the perceived level of alignment with social norms. While in contrast, women with a weaker exercise identity reduced their activity to align with perceived social ideologies that prioritise rest. One potential explanation for this is that women who consider themselves as exercisers are predominantly influenced by their positive attitudes to exercise and personal goals rather than being due to their peers’ exercise behaviour or other’s approval of their exercise. In some circumstances, women with a weak exercise-identity might be prompted to exercise if they perceive this to be a socially desirable behaviour in pregnancy (Yun and Silk, 2011).

This explains the examples given by the women and fitness professionals of other women who took up exercise such as yoga or aqua-natal classes in the process of ‘doing pregnancy’ [5.4.2.3]. Drawing on these varying combinations of motives and influences on decisions further highlights the importance of ensuring women have access to information that meets their individual circumstances.

Many theories of identity are based on categorising personal and social identities; however the value of this distinction is subject to debate. Brewer (1991) and Turner (1987) support the temporal trade-off, and differentiate between feeling different from others (personal identity) and sharing group characteristics (social identity). Others have suggested that the two are ultimately not cleanly separable but fundamentally interrelated (Deaux, 1993). While Breakwell (1986), despite defining personal and social characteristics in identity process theory (IPT), proposes this dichotomy is simply a temporal artefact. Interestingly this is one of the most clearly articulated criticisms of IPT whereby Pehrson and Rieker (2014) argue that by not distinguishing between social and personal identities the theory has resulted in an approach that inadequately theorises social structural influences. How identities are defined also varies, for example Hogg (2005) takes a more relational approach and classifies social identity as that drawn from group memberships and personal identity encompassing more individual relationships.

While the essential interrelation of the two is acknowledged, this study demonstrated a marked distinction between social and personal identities. This is depicted by the metaphor of a refracted pregnant self (Bailey, 1999), whereby rather than experiencing a fundamentally altered self, pregnancy reveals aspects of self that were previously hidden
or compounded. A similar process has been highlighted as the product of illness, whereby self-identity gains salience and becomes more visible through crisis (Kelly & Millward, 2004). This builds on the earlier description of self-identity structure as a multidimensional ‘crystallized self’ with multiple domains of self that may not be immediately apparent. The amplification of the social and personal duality of self-identity in pregnancy is evident in both the moderating factors [5.8] and the consequences of reactions to identity change [5.7].

Kirkpatrick and Ellis (2004) support the proposition that individuals have a varying propensity for whether their personal or social identities are the stronger constituent of their self-identity, and that achieving a balance between is strongly linked to self-esteem. Likewise achieving a balance between a positive social identity and optimal distinctiveness is considered to contribute to an individual’s social identity (Cantwell & Martiny, 2010) and is being increasingly recognised as making a significant contribution to developing a better understanding of how this influences health behaviours (Strachen et al. 2015). This further embeds the substantive theory and suggests that it has the potential to be developed further to enhance understanding of how self-identity influences decisions regarding exercise in pregnancy as explored in section [7.5].

The theory highlights three key points to consider when offering women advice or planning lifestyle interventions. Firstly, drawing on exercise, as they accommodated their pregnant self enabled the women to maintain both a sense of uniqueness and similarity to other pregnant women and thus preserve their unique normality and continuity of self. This has been shown to have important implications for women’s wellness both in terms of physical and psychosocial health (Beck 2002; Côté-Arsenault et al. 2009; Jaspal & Breakwell, 2014). An integral part of this was maintaining what they conceptualised as an investment in exercise that underscores the importance of ensuring women receive effective support and advice towards achieving their goals.

Secondly, how women responded to identity conflict fell on a continuum between two extreme categories. This highlights the importance of accounting for their individual identity motives and tailoring individual advice and support to meet these needs. ‘Assimilators’ tend to have a dominant ‘exercising self’ and prefer to self-manage their participation in exercise. They specifically want accurate and detailed information
regarding the interplay between exercise and pregnancy, particularly the potential impact of exercise on their pregnancy. Addressing this need with high quality evidence and consistent objective advice could enhance their ability to make informed choices and confidence to maintain optimal exercise levels. Furthermore, enhancing their trust in the information they receive will result in a more open dialogue regarding their chosen activities and reduce the risk of them either not receiving pertinent information or dismissing it as not relevant to their individual situation.

In contrast, ‘accommodators’ tend to have a more dominant ‘pregnant self’ and are more readily influenced by external influences and behaviours that align with their perception of social ideologies of pregnancy. These women also benefit from clear and consistent information regarding exercise in pregnancy. Furthermore they are more likely to engage in exercise if the benefits to them and their baby are explicitly clarified and align with their perceptions of the good mother. Having a supportive environment to exercise in, particularly pregnancy-specific classes, further enhances their participation in exercise in pregnancy.

While posing extreme ends of a continuum the categories are not intended to be mutually exclusive. Women may display traits from both depending on their changing circumstances and therefore suggestions for enhancing support are progressive rather than diametrically opposite.

The third point to consider is the dominant social ideology that pregnant women should prioritise rest over exercise, which has a significant influence on the emerging pregnant self. Despite women’s level of motivation this challenges their desire to exercise and in striving to achieve the desired future self as a good mother they often modify their activities to align with social ideologies. This study also highlighted the ‘cultural lag’ between current evidence that supports regular exercise in pregnancy, and the persisting myths and misconceptions pervading social ideologies of pregnancy. The outcome of this is that women are often left to negotiate inaccurate, unreliable and conflicting lay advice.

6.7 Broadening the theory

To date no published literature has been identified that explores the influence of identity on decisions regarding exercise in pregnancy or how pregnant women resolve conflict
with respect to competing roles and identities related to exercise. However, there is growing interest in this concept across other subject areas which offer a deeper understanding upon which this theory can build. The influence of self-identity is increasingly being recognised with respect to the ageing physically active body (Evans & Crust, 2015; Hardcastle & Taylor, 2005; Perras et al. 2015; Spini & Jopp, 2014; Westerhof et al. 2012) and for exercisers during illness (Adamsen et al. 2009). These have highlighted the physical and emotional benefits that can be engendered through developing or re-establishing and maintaining an exercise identity. Furthermore, they demonstrate how this can help individuals affirm and re-establish their self-identity following identity conflict and offer some interesting parallels with the findings from this study. This is exemplified in a study of young athletes diagnosed with cancer (Adamsen et al. 2009) that highlighted how they were able to regain body control and identity through exercise. These endorse this study finding that when women have a robust exercise identity they are motivated to maintain consistency between their identity and related behaviour.

Comparing the transition of pregnancy with characteristics of ageing raises interesting similarities. The substantive theory has highlighted how exercise engenders an opportunity to take some control over the physical changes of pregnancy which also parallel findings in studies on ageing (Evans & Crust, 2015). This underscores how health-related self-perceptions are particularly salient for both populations. Corresponding with this study’s findings ageing is also viewed as an opportunity to renegotiate the sense of self and reflect on changing physicality while contemplating possible future selves (Perras et al. 2015). Furthermore, similar to pregnancy, decisions regarding exercise in the ageing population (Evans & Crust, 2015) and people rehabilitating from major illness or surgery (Missel, 2015) are influenced by social norms that commonly conflict with the exercising self.

In their research exploring the strategies adults used when their identity is threatened by the challenge of ageing, Spinney and Jopp (2014) highlight the importance of maintaining a sense of distinctiveness and continuity. The literature also suggests that older adults use exercise as a buffer against becoming old both from the perspective of avoiding being ascribed to the ‘old’ subculture and maintaining their identity within the ‘achiever’
exercise subculture (Fournier & Fine, 1990). This mirrors how women used exercise to regain their physical prowess and avoid what they considered to be negative stereotypes of pregnancy.

Other similarities in the ageing population, particularly women, are social barriers arising from ageism and sexism (Hardcastle & Taylor, 2005) whereby social norms are imbued with past notions of sport as a male preserve relegated to younger cohorts (Vertinsky, 1995). These internalised beliefs about one's ability to be active and potential risks of vigorous exercise may lead to the avoidance of activity for fear of injury in both the pregnant and ageing population. The parallels between these fields of research not only add support to these study findings but suggest potential for the substantive theory to be generalised and elevated to a higher conceptual level.

All of the studies described in this section have highlighted the benefits of socialising through exercise and the value placed on having a supportive peer network within the environment. However, alongside these similarities it is important to consider the key differences between these populations. For the older person ‘in reality physical activity can be painful and exerciser can be perceived as someone far younger than they’ (Whaley & Ebbeck, 2002, pp. 258). This highlights two key points: firstly, the language used for describing exercise does not resonate with the majority of the older adult population who tend to describe themselves as physically active rather than an exerciser (Hardcastle & Taylor, 2005). Secondly, the motivation to exercise is predominantly to forestall the negative effects of ageing as opposed to it being an inherently pleasing activity. This latter point is debatable with numerous examples of retired individuals attaining huge enjoyment from exercise (Crowley and Lodge 2006). This, therefore, varies across individuals similar to a pregnant population.

6.8 Conclusion

This theory has built on existing research on pregnancy as a transition and is supported by previous research findings that pregnancy destabilises women’s identity and that the advice and support women require during this transition extend beyond the impact on physical health. This builds on the premise in current literature that achieving identity balance through realistic self-reflection and evaluation has important consequences for
short and long-term health (Jaspal & Breakwell, 2014). The conceptual model presented in chapter 5 provides a framework for understanding women's experiences of pregnancy transition and offers a guide for areas of focus when supporting women’s decision-making. It also highlights the importance of addressing emotional and social influences as well as the physical.

Women’s changing relationship with exercise was just one of the many accommodations and adaptations they made in their transition through pregnancy. They drew on exercise to help address **identity conflict**. This entailed maintaining a degree of identity consistency while concurrently normalising their pregnancy experience.

Describing the strategies women use to deal with **identity conflict** has highlighted several areas for concern. These pertain to women potentially unconsciously manipulating their beliefs through selective perception and self-justification. This could result in them dismissing information or advice as not appropriate to them and subsequently not making fully informed decisions. Furthermore, women often ceased activities due to social norms to rest and lack of clear information to support continuing to exercise. This highlights the importance of addressing issues of conflicting, subjective advice and ensuring that women receive clear evidence-based information that they consider credible and individualised to their personal circumstances.

The substantive theory ‘Accommodating the pregnant self’ highlights for the first time the influence of self-identity on women’s decisions regarding exercise in pregnancy. Furthermore, drawing on conceptions of past, present and possible future selves emphasises the temporal context of these decisions. In including valued aspects of their past self the decision-making process is conceptualised as attempting to bridge the gap between past and possible future selves. Consequently, it is not only current self but possible past and future selves that steer decisions regarding exercise in pregnancy. Therefore, interventions and health care aimed at enhancing activity levels in the pregnant population could benefit from taking account of the potential influences of these multiple domains of self.

Integrating the substantive theory with current literature highlighted two broad typologies that women fell under, which highlighted their propensity to be influenced by
personal/individual or social/environmental motives. This offers further insight into how self-identity can influence decisions and potentially how this might be developed in the future to inform interventions to increase activity levels in the sedentary population.

The next chapter concludes this thesis and highlights its contribution to knowledge and the consequent implications for practice, management, education and further research. It includes a final reflection on the research journey and the limitations of the study.
Chapter 7: Reflections and implications

7.1 Introduction

This chapter concludes the thesis by examining and critiquing the study and its constructed theory. This includes a discussion of its contribution to knowledge and the consequent implications for further research, midwifery practice and education. This is followed by a reflection on the limitations of the study. The thesis concludes with a summary of the contribution this research has made to theoretical understanding of decisions regarding exercise in pregnancy.

7.2 Evaluating trustworthiness

One of the tenets of grounded theory is to produce a theory that will ultimately inform practice in a given discipline (Birks & Mills, 2015). However, before exploring how the substantive theory might be applied in practice, credibility of the theory needs to be established. Chapter 3 included an overview of the evaluative criteria that were adopted to guide this study towards achieving trustworthiness. This section revisits these and offers a critical exploration of the extent to which credibility, originality, resonance and usefulness have been achieved.

7.2.1 Credibility

Paramount to the constructivist-interpretivist approach adopted in this study was the generation of rich data through the process of co-construction with the women and the representation of this data and the women’s accounts fairly (Charmaz 2014). This went beyond capturing the explicit content of the interviews to developing an insight into how the women constructed their stories and the impact of the researcher-woman relationship on the data. The steps taken to establish rapport and credibility with the women helped provide a safe environment in which they could freely share their experiences. These were enhanced by the longitudinal study design which enabled prolonged engagement with the women and the opportunity to share the emerging concepts with them. Co-construction of meaning was thus further facilitated by enabling them to comment on the analytical inferences drawn from the data. To further enhance credibility considerable attention was paid to the transcription process and context within which excerpts from these were taken
to ensure the analysis and resultant conclusions were just representations of the dialogue with the women.

These processes were facilitated by developing and maintaining a reflexive approach through continual memo writing. This critical reflexivity enhanced the transparency of the audit trail by making explicit the integrity of the research process and emerging theory to facilitate their evaluation. This has been addressed by establishing a forensic examination of the analytical process and ensuring logical links are evident between the data presented and ensuing argument and analysis. Sufficient evidence in the forms of quotes and comparison to the broader literature has been provided to allow the reader to form an independent assessment of the claims made in this thesis.

7.2.2 Originality
Achieving originality was guided by exploring a research problem initially shaped by the evidence presented in Chapter 2 and the gaps identified within the current knowledge base. Drawing on a grounded theory approach has subsequently enabled this problem to be embedded in the women’s experiences of exercising in pregnancy.

As highlighted in chapter 2, previous studies in this field have predominantly focused on exercise barriers and facilitators [2.8]. With respect to the factors that influence decisions to exercise, these corroborate with the findings of this study particularly the physical changes of pregnancy and social moderating factors. Of note, only one of these studies mentions having an exercise identity as an influencing factor on decisions (Leiferman et al. 2011). Subsequently to date no published research has presented a comparable theoretical model demonstrating women’s decision-making processes in relation to exercising in pregnancy. An exception to this could be argued to be the ‘three phases of women’s process of engagement in physical activity during pregnancy (Cioffi et al. 2010) [2.8, 6.3]. However, despite some similarities this focuses on stages of engagement with exercise rather than how women process the influencing factors on their decisions.

While no research has been found that explores the impact of self-identity or the psychosocial transition of pregnancy on decisions to exercise, in other subject fields self-identity is increasingly being recognised as an integral component of health-related decisions (Shepperd et al. 2011). As highlighted previously [6.7] several of these studies include exercise but not pregnancy. Comparable to this substantive theory several
researchers have drawn on Markus and Nurius’s (1986) concept of possible selves to explore how conceptions of future selves influence the restructuring of existing self-identity. Furthermore, these portray the role of possible selves as a significant influence on behaviour (Manzi et al. 2010). This suggests that the findings from this study could theoretically be applied to other types of health and lifestyle decisions.

The resulting substantive theory ‘Accommodating the pregnant self’ was constructed through conceptual development of the empirical data and builds on existing research to make the following original contribution to the understanding of women’s decisions regarding exercise:

- Has developed a research-based model explaining women’s decisions regarding exercise in pregnancy that contributes new insights into the physical and contextual factors that influence their decisions.

- Offers an alternative perspective to the subject area by highlighting the centrality of self-identity transition and identity conflict in the decision-making process.

- Demonstrates how drawing on exercise, as they accommodate the pregnant self, enables women to maintain both a sense of uniqueness and similarity to other pregnant women and thus preserve their unique normality and continuity of self.

- Highlights how the dominant social ideology that pregnant women should prioritise rest over exercise had a significant influence on the emerging pregnant self and for many women resulted in them reducing their exercise levels.

- Identifies two contrasting categories with respect to how women respond to identity conflict. This enables identification of the different support needs of ‘accommodators’ and ‘assimilators’ and potential strategies for addressing inactivity in the pregnant population.

- Highlights how the findings from this study could theoretically be applied to other types of health and lifestyle decisions and potentially make a significant contribution to these subject areas.
7.2.3 Resonance
The study aimed for procedural precision through the rigorous application of the defining characteristics of grounded theory [Table 3-1], particularly the iterative inductive deductive approach to data collection and analysis. In this way, the generated theory has aimed to build ‘resonance’ for the women who contributed data and people who share their circumstances. The extent to which this has been achieved has been evaluated throughout the research process in parallel with constant comparison of the data. In addition to exploring emerging concepts with the women, towards the end of data collection the interview schedule included introducing the emerging theory to the women. This was to discover the extent to which they could locate themselves within it which further enriched the data analysis. On these occasions the women readily connected with the conceptualisation offering further insight to help refine the theory.

Nevertheless, a balance was sought between fostering the co-construction process and recognising that providing an accurate representation of each woman’s experience is not the intention of a grounded theory. In contrast this approach aims for a highly conceptualised theorisation of the process being studied that renders member checking or verification redundant (Charmaz, 2006). This is supported by, Glaser's assertion that the aim of the grounded theory is to explain how participants are ‘resolving their main concern that they may not be aware of conceptually, if at all’ (Glaser, 2002, pp. 5).

Charmaz (2014) highlights how it is inherent in a grounded theory approach for the theory to emerge through the writing, which can then act as a catalyst for future research. While ‘theoretical saturation’ might be considered the pinnacle for a grounded theory, a degree of pragmatism was required and the validity of this study has instead assumed theoretical sufficiency [4.2.4]. In light of this the aim has been to demonstrate an adequate degree of sufficiency to support the claimed scope of the substantive theory presented.

On the occasions when the emerging theory has been presented to peers and through professional conferences the feedback has been resoundingly confirmatory. Although the resultant theory is an interpretation, it is grounded in the data and accounts for individual variations in processing the influences on decisions. In the later stages of writing up the theory a summary of the findings was disseminated to the women and the advisory group
members through the study website\textsuperscript{117}. The women responded positively towards the findings confirming its recognisability as reflected in the following comment from Claire:

\begin{quote}
‘You got it just right from my point of view. It wasn't something I was conscious of at the time but it is actually how I felt and definitely resonated with me. It was about getting back to my exercising self and my self-image, back to my pre-pregnant self. But it's also importance to be fit and healthy during pregnancy with regards to coping with the demands of pregnancy, the birth and the health benefits to the baby.’
\end{quote}

(Feedback on study findings, Claire)

The fourth criteria against which to evaluate the study is ‘usefulness’ and will therefore, be addressed by exploring the implications of the theory ‘Accommodating the pregnant self’, for midwifery practice, education and potential future research.

\section*{7.3 Implications for practice}

The primary aim of this study was to generate a theoretical model demonstrating women’s decision-making processes in relation to exercising in pregnancy; this was presented in chapter 6. Considering how this model could be applied in practice moves towards the secondary study aim which was to use this understanding of women’s experiences and decision-making processes to inform health professionals and fitness specialists who advise women about their lifestyle choices. Pregnancy has previously been described as a window of opportunity for changing women’s health behaviours (Phelan, 2010). This could be explained by how belief systems are partially reconstructed during transitional phases exposing them particularly open to new learning and the development of new knowledge (Turner, 1979). This is supported by this study's findings that highlight the importance of ensuring that women receive accurate information that they consider credible and applicable to their personal circumstances.

The theory highlights two key points to address when considering women information needs or planning lifestyle interventions. Firstly women have different information and support requirements depending on where their individual identities fall on the assimilator-accommodator continuum. With respect to information needs, women that prefer clear direction need access to clear, consistent information and advice that aligns,

\textsuperscript{117} The website can be viewed at http://exerciseinpregnancy.me.uk/
with their construction of their pregnant self. In addition to this, women who want more autonomy need access to further in-depth evidence to enable them to make fully informed decisions. Secondly for both categories of women decision making is strongly influenced by the dominant social ideology that they should prioritise rest over exercise that, for many women resulted in them reducing their exercise levels.

This implies that a multi-pronged approach is required that addresses the complexity of factors that influence women’s decisions; subsequently the key implications for practice are to consider:

- How the latest information regarding exercise and pregnancy could be disseminated to women and health and fitness professionals to help inform women’s decisions.
- How the availability of pregnancy-specific classes could be enhanced and information regarding local provision disseminated more effectively.
- How to address the ‘cultural lag’ in current social ideologies regarding exercise in pregnancy.

The most effective and realistic strategy for the dissemination of information is probably the development of a credible web-based resource. This would enable women and health/fitness professional to access reliable advice, current research and policy documents pertaining to exercise in pregnancy. To enhance dissemination and credibility this could be in collaboration with a large professional body such as Royal College of Midwives or National Childbirth Trust\(^\text{118}\). The website could be complemented by a mobile web app offering cross-platform compatibility that would enable tablet and smartphone access, allowing it to reach the broadest audience.

This study highlighted how the women received inconsistent and inaccurate information from their care providers that was commonly based on subjective lay knowledge rather than current evidence. Their experiences are supported by previous research [2, 7] and suggest that midwives and doctors are not well informed regarding exercise and often do not have sufficient time in antenatal appointments to address exercise adequately. This further highlights the need for wider dissemination of current research and physical

\(^{118}\) (The Baby Friendly Initiative offers an exemplar with their breastfeeding research site of how this might work UNICEF, 2016)
activity guidelines for pregnancy (presently ACOG\textsuperscript{119}, 2015) to healthcare and fitness staff who provide antenatal care. However, it is essential to recognise the complexities of practice in the current NHS climate and the limitations of health professionals’ roles due to competing demands on their time. Therefore, the potential for developing a national exercise in pregnancy website as described previously is probably the most realistic and efficient means to disseminate this information. The educational implications from this study are explored further in section 7.4.

The findings also highlighted how women seeking to have their pregnancy activities endorsed would benefit from enhanced access to supportive exercise environments. In addition to the website/app described previously, this could be addressed through the dissemination of pregnancy classes via local leisure centres, GP surgeries and collaboration with parenting networks such as mumsnet.com, and National Childbirth Trust networks. Furthermore feedback to leisure centres and gyms could highlight how making their facilities more explicitly inclusive of pregnant women could potentially enhance uptake in this population.

It is evident from the literature that despite substantial investment in trying to address inactivity levels and health in the general population, lifestyle interventions have often been ineffective and had limited long-term effects (Poston et al. 2015). This may be compounded by the growing shift in society whereby healthiness is considered to be an individual’s responsibility (Rossing et al. 2014). These findings would support an alternative strategy whereby, rather than targeting women with recommendations to exercise the cultural lag between social ideologies and evidence regarding exercising in pregnancy should be addressed. This would further enhance the previous proposal to develop more supportive exercising environments for pregnant women. Developing strategies that promote exercise as a desirable and normal activity in pregnancy that resonates with women’s emerging pregnant selves is one way this might be addressed.

\textsuperscript{119} Personal communication has highlighted that the ACOG are currently updating the exercise guidance leaflet for women which is due to be released in April 2016. (Scogna, K. Director Patient Education. ACOG. personal email 4/3/16).
Therefore, in addition to the suggested strategies above implications extend beyond midwifery practice, towards addressing the ‘cultural lag’ in current social ideologies regarding exercise in pregnancy. Some ways this might be addressed include:

- Portraying exercise as a ‘normal’ activity for pregnancy by incorporating images of pregnant women exercising within gyms and leisure centres and their marketing materials,

- Having purposely designed fitness pregnancy clothes more widely available to further endorse exercise as a ‘normal’ activity for pregnancy.

- Equipping women and professionals with current evidence to enable them to challenge current ‘expert’ advice in gyms, professional websites and literature that is based on risk aversion rather than sound evidence. The proposed website offers the most realistic approach to addressing this possibly through a ‘frequently asked questions’ section.

It was apparent from the findings that long-term health gains were not a key motivator to exercise, women were far more likely to be motivated by self-identity related benefits. These include clear benefits to the baby (desirable self as a good mother), reduction in pregnancy and birth complications (maintaining normal self) and controlling weight gain post-partum (avoiding the feared fat self). Therefore how this might be incorporated within health promotion materials and strategies aimed at addressing the current inactivity levels warrants further consideration. Permeating throughout this thesis has been the recognition of the conflicting social ideologies women face. Cognisant of these varied and conflicting pressures on women and the multiple identities they currently juggle it is essential to consider how these strategies might foster a supportive approach rather than trying to add another social pressure against which women might feel scrutinised.

7.4 Implications for education

Like practice any educational suggestions need to be realistic in terms of time available within midwifery curricula. Hence the key implication from this study is to consider the development of an information resource that health and fitness professionals could access for information and direct mothers towards.
Nevertheless current literature (O’Donoghue et al. 2014; Phillips et al. 2015; Weiler et al. 2012) highlights the need to address the current dearth of physical activity and exercise promotion in health professional undergraduate curricula. Furthermore, the role of the midwife in public health is evident in various policy documents such as Midwifery 2020 (Masterson 2010), The Marmot report (Marmot 2010), NICE guidelines (2010) and the current Maternity Review (NHS England, 2015) and has been recognised as warranting careful consideration in future curricula planning (Crabbe & Hemingway 2014).

Enhancing exercise levels in the pregnant population has the potential to contribute towards two key maternity policy drivers, promoting normal birth and reducing obesity-related complications. Addressing both of these has significant financial implications for maternity services and it is, therefore, timely to explore how the study’s findings might be developed through education and further research to contribute to this wider agenda.

As highlighted earlier, this study’s findings suggest that concerns raised by previous studies regarding healthcare professionals’ lack of awareness of current exercise guidelines (Bauer et al.; 2010; Clarke & Gross, 2004; Evenson & Pompeii, 2010) persist. Therefore, in addition to developing a central information website this could be addressed through undergraduate and postgraduate midwifery education to enhance awareness and understanding of the current exercise in pregnancy guidelines and the evidence underpinning these. This might include both the risks and benefits of exercising alongside further endorsing the importance of listening to women and tailoring advice to meet their individual exercise needs.

7.5 Implications for further research

The substantive theory provides a theoretical insight into the influences on decisions to exercise in pregnancy. In particular it underscores the significance of self-identity, which is a novel concept in this subject area that warrants further investigation.

The study’s findings have been constructed from a sample of women who, while having varying relationships with exercise, all exercised regularly. By developing a deeper understanding of the factors that influence their decisions the theory now has the potential to be tested with a wider demographic range of women. Further research is needed to include women not represented by this study, which could help establish the extent to
which the theory can ‘reach’ a wider and more diverse socio-cultural population. This might also include targeting a more sedentary population. Likewise, to date the moderating factors have been drawn from quite a small sample, these could be refined further by drawing on health behaviour literature, further exploration with a wider demographic and subsequent testing in the substantive field.

There is an increasing awareness that generic health messages aimed at increasing activity levels are unproductive and subsequently interventions are often ineffective; this suggests that a more tailored approach is required. There is a growing recognition of the importance of using person centred models in health promotion (Olander et al, 2015). Drawing on goal setting and moderating factors that reflect variations in individual’s identity characteristics could build on this to make engagements with health and fitness professionals more effective.

Thus the model of ‘Accommodating the pregnant self’ [Figure 5-7] has the potential to illuminate how self-identity transition and varying moderating factors might inform future interventions aimed at enhancing activity levels in a sedentary population. From a practical perspective this may be limited to midwives with specialist roles such as obesity specialist midwives or parent education specialists. It is envisaged that such a tool would build on the current model to determine the key influences on women’s decisions by identifying pre-pregnant experiences of exercise, availability of supportive networks, tentative images of future selves to identify exercise motivators etc. This draws on the concept illustrated in Table 6-3 whereby identifying an individual’s characteristics and affinity towards social or personal influences would facilitate health and fitness professionals to tailor information regarding exercise to meet the individual needs of women. This could inform future interventions by drawing on personas120 similar to those presented on pp. 207-8 to explore how to make interventions more effective by taking a more person centred approach.

120 Personas have been identified as a method through which designers can identify and communicate user needs efficiently and effectively (Calabria, 2005). The approach has been developed from a method for IT system development to being used in many other contexts, including development of products, marketing, planning of communication, and service design and more recently in health promotion materials (Wärnestål, 2014).
Through further validity testing the model could thus be refined and potentially developed to go beyond determining individual needs to include those of a targeted population. Furthermore, it could also be applied as a tool to explore how non-exercisers might be offered more tailored support that targets the key factors that influence their exercise behaviours. Similarly the framework offered by the model has the potential to explore other decisions and choices women make in pregnancy. Examples might include health decisions regarding smoking cessation and infant feeding but also how women accommodate the pregnant self into their professional identity.

The theory could be further enriched by including the voice of the women’s partners, particularly with respect to developing strategies to enhance exercise in pregnancy. The study findings that partner’s involvement appeared influential in the decision-making process aligns with other research regarding choice of place of birth (Bedwell et al, 2011; Coxon et al, 2014) and breastfeeding (Sherriff et al, 2009). In particular, the research on breastfeeding which underscores the importance of engaging meaningfully with fathers, highlighting they are a primary source of support and significant influence on decision-making regarding initiating and sustaining health behaviours (Mannion et al, 2013; Sherriff et al, 2009). Likewise, this study has drawn on the women’s perceptions of health professionals’ knowledge and attitude, while this corroborates with current literature a deeper theoretical insight could be developed by theoretically sampling health professionals in the future.

Beyond the substantive field the theory offers the potential for further refinement by exploring experiences of a wider range of life events that lead to identity conflict and impact on an individual’s decisions regarding exercise. This could include ageing and injury or chronic disease, each of which could be substituted into the model instead of pregnancy. This warrants further exploration, data interrogation and testing in the field to establish theoretical fit with the findings of this thesis.
7.6 Study limitations

A reflexive approach was adopted throughout the study which aimed to address potential limitations as they arose and thereby enhance the overall rigour of the study. Nevertheless there are several study limitations that warrant further explanation.

Recruitment proved more challenging and time-consuming than anticipated and comparing the sample demographics against studies that have analysed predictors for women to exercise in pregnancy suggest the sample reflects the population of higher exercise participants (Gaston & Cramp 2011). The analysis took account of the relatively privileged sample of women which was complemented by drawing from internet forums and countered by extensively comparing and contrasting the generated theory with extant empirical and theoretical literature. While the lack of diversity in the sample is a potential limitation, this was offset by the ability to generate immensely rich data from which to draw out emergent concepts and categories. Congruent with the qualitative nature of this study the findings inherently provide an interpretation of these women’s descriptions of their experiences. However they are intended to natural generalizability whereby they are recognisable to pregnant women. Furthermore, drawing on other studies highlighted many parallels and suggest the substantive theory ‘Accommodating the pregnant self’ has the potential to be raised to a higher conceptual level, which constitutes an important implication for future research.

In discussing the implications of the findings the importance of not being overzealous in respect to making exercise in pregnancy common place has been highlighted. In addressing the needs of the women in this study and exploring how identity conflict issues might be alleviated for them by normalising exercise in pregnancy there is a danger that this might ultimately add to the tyranny of demands on women. In particular for those for whom exercise is not integral to their identity who may savour pregnancy as a time when they are excused many of the overt pressures to conform to the idealistic feminine form. Nash (2012) captures this as exercise adding a third shift of work to their negotiations of work at home and paid employment.

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121 Appendix 14 contains a short reflection of the research journey
As the theory developed, it became apparent that the main concern for the women was resolving self-identity conflict of which they were not necessarily conceptually aware which compounded the notoriously challenging nature of researching self-identity transition (Josselson, 1987). In examining the process of re-construction of self in motherhood, Smith (1994) highlighted how it is common for women retrospectively to construct self-enhancing personal accounts glossing over difficulties and emphasising personal growth. It was, therefore, important to consider the extent to which women might mask identity conflict due to socialised responses and the desire to be appearing to be coping with life's challenges. Despite these challenges numerous patterns were identified in the data which eventually enabled the key reactions to identity conflict to be determined and theoretical sufficiency to be recognised.

7.7 Concluding remarks

The purpose of this study was to develop a theoretical insight into the factors that influence women’s decisions regarding exercise in pregnancy and how they process the influences and multiple alternatives they encounter. In building on the concepts of identity transition and cross domain identity conflict the substantive theory underscores the significance of self-identity in the decision-making process. This reveals how reactions to identity conflict fall on a continuum between two extreme categories and highlights the importance of accounting for women’s individual identity motives and circumstances. A significant influence on all the women was the the perpetuation of myths and misconceptions resulting in decision-making often being based on conflicting and inaccurate advice. The findings provide an insight into how women might be better supported to make informed and assured decisions regarding lifestyle choices by tailoring individual advice and support to meet these needs.

A key strength of the model is that it explicitly includes theorising of the influence of social structure on decisions. This addresses a common criticism that work on identity fails to address the agency structure question by predominantly focusing on the human agent and giving social systems a residue or background status rather than integral part of the process. Thus, the theory highlights that while women demonstrated a degree of agency, it was common for their behaviour to be fundamentally constrained by social influences.
With respect to the worth and usefulness of the substantive theory, it offers an original, modifiable and potentially useful interpretation that goes beyond exercising in pregnancy and might be applicable to other types of health and lifestyle decisions.

I've just read the summary and can confirm that it completely fits with how I felt in my first pregnancy, and resonates even more deeply now as I am currently pregnant for the second time, and exercising regularly. . . .

....so many fitness professionals are handing out long-discredited advice which, as a pregnant woman, can make you feel that you are taking unnecessary risks with your unborn child and you’d better going home to put your feet up.

(Feedback on study findings, Pauline)


Bandura, A. (2000). Health promotion from the perspective of social cognitive theory. In P. Norman, C. Abraham, & M. Conner (Eds.), *Understanding and changing health behaviour* (pp. 299-339). Reading: Harwood.


Department of Health. (2011). *Start Active, Stay Active: A report on physical activity from the four home countries ’*. Online retrieved 19th August, 2011 from


Evans, A. B. & Crust, L. (2015). ‘Some of these people aren’t as fit as us’: experiencing the ageing, physically active body in cardiac rehabilitation *Qualitative Research in Sport, Exercise and Health* 7(1), 13-36.


retrieved 6th July, 2013 from http://dx.doi.org/10.1155/2013/165617


Appendix 1 Definition of terms

A critique of the literature highlighted that the common and professional use of the terms ‘physical activity,’ ‘exercise’ and ‘sport’ are often used indiscriminately and therefore, need clarification. For the purpose of this study the following definitions will be adopted.

**Physical activity**: is defined as any bodily movement produced by skeletal muscles that results in energy expenditure above resting level. This might include occupational, sports, conditioning, household or other activities (Caspersen et al. 1985\textsuperscript{122}).

**Exercise**: is a form of physical activity that is planned, structured, and repetitive with a final or an intermediate objective; the improvement or maintenance of physical fitness (Caspersen et al. 1985).

**Sport**: is a physical activity, governed by a set of rules or customs that is often engaged in competitively. This is a form of physical activity that could be classified as a form of exercise if it meets the above definition.

In order to promote and maintain health the British Association of Sport and Exercise Sciences (BASES) recommend that, all healthy adults need to take part in at least 150 min of moderate-intensity aerobic physical activity each week or 75mins of vigorous-intensity aerobic physical activity (O'Donovan et al. 2010\textsuperscript{123}). Combinations of moderate and vigorous-intensity activity can be performed to meet this recommendation. Activity should be taken in bouts of 10 minutes, and ideally performed on five or more days a week; this should also be supplemented by muscle strengthening activities on two days or more per week. (O’Donovan et al. 2010\textsuperscript{124}).

**Moderate-intensity aerobic activity**: is exemplified by a brisk walk that noticeably accelerates the heart rate.

**Vigorous-intensity activity**: is exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate.

For the purpose of this study ‘exercise’ will be defined as any physical activity that contributes towards the BASES minimum recommendations to produce health benefits (O’Donovan et al. 2010). This may include any purposeful physical activity beyond that done in routine day to day activity. Should further clarity be required then activity codes and MET intensities as defined by Ainsworth et al. (2011\textsuperscript{125}) will be used, whereby to be


\textsuperscript{124} As above

considered moderate an activity should have a MET of 3-6 Metabolic Equivalent of Task (MET), is a physiological concept used to express the energy cost of physical activities as multiples of, resting metabolic rate (when MET= 1) It is widely used as a practical means of expressing the intensity and energy expenditure of physical activities in a way comparable among persons of different weight. It does however, have limitations as the physical activities used to establish MET values do not account for pregnancy (Ainsworth et al. 2011).

Categories emerging from the data
A number of different exercise levels emerged from the data both through interviews and deeper exploration of the literature [Table A1].

<table>
<thead>
<tr>
<th>Exercise level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme (Professional athlete)</td>
<td>Theoretical category may include women with exercise addiction or elite athletes</td>
</tr>
<tr>
<td>Vigorous</td>
<td>Exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate. (O’Donovan et al. 2010).</td>
</tr>
<tr>
<td>Moderate outside RCOG pregnancy guidelines</td>
<td>Exemplified by a brisk walk that noticeably accelerates the heart rate. (O’Donovan et al. 2010). Over 30 mins moderate activity 4-7 days/week Including horseback riding, downhill skiing, ice hockey, gymnastics and cycling during pregnancy (RCOG, 2006).</td>
</tr>
<tr>
<td>Moderate within RCOG pregnancy guidelines</td>
<td>Exemplified by a brisk walk that noticeably accelerates the heart rate. (O’Donovan et al. 2010). Up to 30 mins moderate activity 4-7 days/week Excluding horseback riding, downhill skiing, ice hockey, gymnastics and cycling during pregnancy (RCOG, 2006).</td>
</tr>
<tr>
<td>Within social norms</td>
<td>This is a theoretical category defined from the interview data by what the women considered the public considered ‘acceptable in pregnancy’</td>
</tr>
<tr>
<td>Sedentary</td>
<td>Normal, healthy individuals not engaged in regular, structured physical activity (Tremblay et al. 2010)</td>
</tr>
</tbody>
</table>

Table A1 - Illustrating exercise levels

Appendix 2 Summary of key risk assessment issues

From ethical approval application to University of Brighton’s Faculty of Health and Social Science Research Ethics and Governance Committee (FREGC) approved November, 2011 Approval number. FREGC-11-058.

All participants could be considered at potential risk attributable to their involvement in the study. While it is difficult to specifically quantify and compare risks and benefits of the proposed study that through careful planning risks can be minimised and dealt with appropriately as circumstances arise. This will rely on the researcher’s previous experiences as a midwife and lecturer while recognising her limitations, and advice from her research and midwifery supervisors. The specific risk assessment issues that will need to be addressed are as detailed below.

1. Lone working
   This is particularly when conducting interviews in participants’ homes. Advice was obtained from the University Safety Adviser, A Knight in the development of this strategy (Appendix in main proposal document detailed how this issue would be addressed).

2. Dealing with disclosure
   To determine whether there is a duty or right to breach confidentiality the researcher will need to consider the following issues both in her capacity as a citizen and a professional:
   - Ensure all participants are fully informed about the limits of confidentiality and types’ of confidences the researcher would have to disclose prior to obtaining informed consent.
   - Does the public good override the right to privacy of the participant?
   - In deciding to disclose a confidence to an appropriate authority the researcher will keep the breach of privacy to a minimum to limit the damage of the disclosure to the participant.
   - The researcher will consider to whom she should make the disclosure to and whether harm to the participant a likely consequence of the researcher’s breach of privacy?
   - Should this issue arise, advice will be sought from the research supervisors prior to action

3. Handling distress
   The interview process may arouse emotions in women, whose feelings are often quite labile in pregnancy, leading them to become distressed. It will be the interviewer’s responsibility to assess the woman’s physical and emotional well-being throughout the interview and research process. The woman’s emotional status will be assessed, throughout her involvement and interviews interrupted or terminated as guided by her wishes. As appropriate, the woman will be advised of the potential advantages of discussing issues raised with her midwife or GP and given a sheet of support services (appendix 6).

4. Ensuring continued informed consent and maintaining confidentiality
   - Details of how this will be addressed are detailed within the participant information sheet and Table 1 ‘Data Storage’ overleaf.
   - Throughout the research process, it will be made clear to the woman that she is free to withdraw from the study at any time.
It is considered that an element of reciprocity between researcher and participant exists, with each gaining something from the experience. For the woman the benefits maybe purely altruistic while for wider society they comprise professional knowledge development. It is therefore, imperative that the researcher maintains an explicit engagement with ethical issues throughout the research process from the planning stage through to accurate and wide dissemination of the research findings.

University of Brighton is insured by Zurich Municipal providing indemnity cover for the research once FREGC approval has been obtained. This provides Public and Products Liability: £30,000,000 for any one occurrence, Employers' Liability: £30,000,000 for any one claim inclusive of costs, and Professional Indemnity: £5,000,000 for any one claim or in any one period of insurance, with an excess of £2,500. In addition as a member of the RCM I have access to legal advice and representation.

**Data storage privacy and data protection.**

The following measures will be taken to ensure protection of the integrity anonymity and confidentiality of records and data generated by the research and to comply with The Data Protection Act (1998) and University of Brighton (2011) guidelines for the handling of personal data.

<table>
<thead>
<tr>
<th>Data</th>
<th>Where stored</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule anonymising participant identities and consent forms</td>
<td>Locked filing cabinet in the researcher’s office</td>
<td>Shredded once data analysis completed</td>
</tr>
<tr>
<td>Audio recordings of interviews</td>
<td>Transferred from recorder on day of interview onto dedicated memory stick (A) protected by a password.</td>
<td>Permanently deleted and rendered irretrievable from recorder once transferred to memory stick</td>
</tr>
<tr>
<td>Interview transcripts</td>
<td>Dedicated memory stick (A) protected by a password stored in a locked desk at the researcher’s home address. If research supervisors require to examine the transcripts, these will be in the form of anonymised paper versions taken to supervisory meetings.</td>
<td>These will be securely stored for 7 years after completion of the study and then permanently deleted and rendered irretrievable from memory stick. These will be shredded after use, and not stored to prevent unnecessary duplication of records.</td>
</tr>
<tr>
<td>Analysis material for the research</td>
<td>Researcher’s password protected personal laptop, kept in a locked desk at researcher’s home address</td>
<td>These will be securely stored for 7 years after completion of the study and then permanently deleted and rendered irretrievable from memory stick.</td>
</tr>
<tr>
<td>Back up of analysis data and draft of thesis</td>
<td>Dedicated memory stick (B) will be used to back up this data that will also be password protected kept in a locked desk at researcher’s home address</td>
<td>On completion of the study these will be permanently deleted and rendered irretrievable from memory stick.</td>
</tr>
</tbody>
</table>
Appendix 3 Initial plan for participant recruitment and consent

To ensure informed, uncoerced consent and continued participation an ‘opt in’ approach to study recruitment was adopted. The process of recruitment is demonstrated in the following flow diagram:

Advertise for study participants
Advert/Flyer (Appendix 2), in local papers, leisure centres, gyms sporting clubs, children’s centres and shops.

Interested women contact researcher
Through research dedicated mobile phone or e-mail.

Researcher explains the study to women
A verbal explanation of the study will be given see Appendix 3, for a summary of the information this will include. Women will be given an opportunity to ask questions and find out further information about the study. At this point women will be screened for contraindications to exercise.

Interested women given/sent written information and consent form
Women’s initial demonstration of interest and their agreement to contact the researcher will not be perceived as consent to participate, but merely a desire for more information. Participant information sheet and consent form (Appendix 5) will be posted to women to including stamped addressed envelope for return. This will ensure women have a minimum of 24 hours to consider this information and choose whether they would like to participate.

Women return consent form to researcher
Consent form stored in a locked filing cabinet

Arrange interview date
Researcher first confirms the woman is happy to continue with the study. Interview date arranged at mutually agreeable time and location. Location will be chosen that is convenient for the woman and offers sufficient privacy. If appropriate, this may be the woman’s home.

Interview 1
At beginning of trimester 2, see Appendix 4, for interview schedule.

Interview 2
In trimester 3,

Interview 3
Scheduled 6-10 weeks postnatally

Arrange focus group
Researcher first confirms the woman is happy to continue with the study. Choice of dates offered for focus group.

Focus groups
The content of the focus group schedule will be developed from the themes emerging from the on-going data analysis.

Part of the preparatory routine was to send the research participant a reminder the day before the interview to go ensure this was still convenient for them and confirm the date and time, location. On a few occasions this did result in the women requesting to change the interview to a more convenient time. To date all women who have expressed an interest have been invited to take part in the interview process.
Appendix 4 Recruitment poster

You are invited to help with a Research Project

Decisions about Exercising in Pregnancy

If you are pregnant I would really like to talk to you.

As a participant, you would be invited to engage in 3 interviews about your beliefs regarding exercise in pregnancy.

For more information or to volunteer to take part contact Jenny
Phone 0774455667 or Email exerciseinpregnancy@brighton.ac.uk

Feel free to distribute details to anyone you think may be interested. Further information is available at reception and on the website www.exerciseinpregnancy.com.

Thank you
Jenny Hassall
Research degree student

NB: The flyer used followed a similar format and layout but contained more of the information within the PIS
Appendix 5 Participant information sheet and consent form

Title of Study – Decisions about Exercising in Pregnancy

Participant information sheet

You are invited to take part in a research study exploring women’s decision-making in relation to exercising in pregnancy. Before deciding if you would like to take part, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully discuss it with others if you wish, and ask questions to clarify any queries you may have. Please contact me at any time if you would like any more information.

Who is carrying out the research?

Jenny is a research degree student at the University of Brighton. The study will be supervised by a Professor of Nursing and a Senior Lecturer in Sport and Exercise science both from the University of Brighton.

What is the purpose of the study?

The study aims to develop a better understanding of how women decide whether or not to exercise in pregnancy. It is hoped that this will help health professionals and fitness specialists to provide effective information to pregnant women.

Who is being invited to take part?

Any healthy pregnant woman who usually exercises regularly, this includes before or during their current pregnancy.

Exercise is defined as any physical activity that makes your body use more energy than it would normally, so that it makes you breathe a bit harder and makes your heart beat faster. This might include; a walk, jog or bike ride, swimming, dancing, physical household chores or gardening.

You need to be over the age of 16 and not have any serious medical conditions or pregnancy complications.

If I want to take part, what will happen next?

If you decide you would like to take part in this study, you can contact me, Jenny by text or phone, 07532091784, or by Email: exerciseinpregnancy@brighton.ac.uk.

I will explain what the research is about and what will be involved in the interview process. I can also answer any questions you might have. You can then decide if you want to go ahead. You can find out more information on: http://exerciseinpregnancy.me.uk

What will I have to do?

The second stage will involve up to 3 interviews with me. Ideally interviews will take place at around 4 and 8 months in your pregnancy. The final interview will be planned for 6-8 weeks after the birth. The interviews will be at a time and place convenient for you, and will last approximately 45-60 minutes. You will be under no obligation to take part in the interviews and can withdraw at any time. I will be able to reimburse reasonable travel expenses please ask me for more details.

During the interview you will be asked to describe your experiences and views regarding exercise in pregnancy. There are no right or wrong answers to the questions I will be asking, I am interested in your individual opinion and experience. The interviews will be recorded using a small Dictaphone. This is to enable me to keep an accurate record of the interview findings. After each interview you will be given the chance to read through the written record of your interview. You can ask for any parts of it you are not happy with to be removed. These will then not be used in the study.

YOU WILL NOT BE REQUIRED TO DO ANY EXERCISE AS PART OF THE RESEARCH STUDY.

Should the study over recruit anyone not invited to take part in the interviews will have the opportunity to participate in a focus group interview if they would like to. The focus groups will be led by a researcher and will involve approximately 8-10 women in a group discussion about how women make decisions.
regarding exercise in pregnancy. The focus group session will last approximately one hour and be audiotaped to allow for later analysis.

**What happens if I don’t want to carry on in the study anymore?**
Your participation in the study is totally voluntary. You are free to withdraw from the research at any time, for any reason without prejudice. You can either inform me, Jenny Hassall or Val Hall both contact details are at the end of this sheet.

**What are the possible risks and benefits of taking part?**
Previous studies have found that women enjoy the opportunity to discuss their pregnancy experiences. Your involvement in the study may give you satisfaction that you have contributed to the research. I hope this will help to improve the care offered to pregnant women in the future.

It is hoped that taking part in the interview will not prove stressful to you. It is up to you exactly what you share in the interview. However, if you feel upset by what you have shared, the interview can be stopped straight away. Should you reveal that you are doing anything that could potentially be harmful to your pregnancy or experiencing any concerning symptoms you will be advised to seek immediate support from your midwife. The interviewer will not be able to give you individualised advice but you will be offered an information leaflet about exercise in pregnancy at your first interview. Should you have any further questions regarding your pregnancy you will be advised to discuss these with your midwife.

**Will my taking part in this study be kept confidential?**
Any information that is collected about you during the course of the research will be kept strictly confidential. All interview recordings will be destroyed at the end of the research. Your name or contact details will not be recorded on the interview transcripts. In addition, any details that potentially could identify you will also be removed or changed. My research supervisors will have access to some of the written records of your interview. Jenny Hassall will be the only person to have access to your consent form and any of your contact details. All material will be kept on a computer and password protected, or in a locked filing cabinet.

As a practising midwife Jenny has a professional duty to inform someone if you were to say something that potentially indicated that you or someone else was at risk of harm. If you decide to take part in the research Jenny will remind you of this before starting the interview. If you were to reveal something that concerned Jenny she would stop the research interview and explore with you the options available. This could include contacting your midwife, health visitor, social worker or GP as appropriate.

**What will happen to the study results?**
The purpose of the study is to develop a better understanding of women’s decision-making regarding exercise in pregnancy and inform health professionals and fitness specialists who advise pregnant women. It is therefore, hoped that the material will be presented at academic and professional conferences and in academic journals. The finished dissertation from the study will be publicly available on the university web site. Anonymity and confidentiality will be maintained in all cases. Your name will not appear anywhere nor will anyone be able to link specific parts of the findings to you. However, to demonstrate women’s thoughts clearly, anonymous direct quotes may be used. You will be given the opportunity to nominate a false name to be used for this purpose.

This study has been approved by the Faculty of Health and Social Sciences Research and Ethics Committee, University of Brighton.

**Contact details**
Please feel free to contact Jenny at any time throughout the research should you wish to discuss anything about the study or if you would like to withdraw from the study.
Jenny Hassall 07532091784 or Email: exerciseinpregnancy@brighton.ac.uk

If you are unhappy about any part of the research study and would like to make a complaint to an independent party please contact Val Hall 0127364 V.Hall@brighton.ac.uk

Thank you for taking the time to read this.
Further information to be given to women prior to requesting consent

Explanation will follow that on the participant information sheets and include:

- The purpose of the study
- Estimated time that might be involved to complete the interviews
- That interviews will be digitally recorded
- How the data and results of the study will be used.
- They will be reassured that they can terminate their participation at any time if they change their minds.
- The requirement for disclosure will be clarified should the women say something that potentially indicated that they or someone else was at risk of harm.
- Women will not be required to do any exercise as part of the research study

Interested participants will then be given an opportunity to ask questions and find out further information about the study

Contraindications to Exercise in Pregnancy

Women will be screened prior to gaining consent for any contraindications to exercise using the following criteria\(^\text{127}\).

1. History of premature labour
2. Persistent second or third trimester bleeding/placenta praevia
3. Pregnancy-induced hypertension or pre-eclampsia
4. Evidence of intrauterine growth restriction
5. Multiple pregnancy
6. Uncontrolled Type I diabetes, hypertension, epilepsy or thyroid disease, other serious cardiovascular, respiratory or systemic disorder
7. History of recurrent miscarriage in previous pregnancies, cervical weakness
8. Anaemia or iron deficiency? (Hb < 100 g/L)
9. Malnutrition or eating disorder (anorexia, bulimia)
10. Premature ruptured membranes
11. Morbid obesity (body mass index greater than 40)
12. Other significant medical condition

\(^{127}\) Modified from:
CONSENT FORM

Title of Study – Decisions about Exercising in Pregnancy

Researcher: Jenny Hassall, Research Student, School of Nursing and Midwifery, University of Brighton, Robert Dodd Building, 49 Darley Road, Eastbourne, BN20 7UR. exerciseinpregnancy@brighton.ac.uk

Please initial each box

1. I confirm that I have read and understand the participant information sheet for the above study. I have had the opportunity to consider the information and have received satisfactory answers to my questions.

2. I understand that my participation is voluntary, and that I am free to withdraw at any time, without giving any reason and without prejudice.

3. I consent to participate in the research interviews.

4. I agree for my interview to be recorded and transcribed for the research study.

5. I agree to take part in the above research.

6. Data Protection:
   I agree to the University processing personal data that I have supplied.
   I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant
(Print) ___________________________ Signed ___________________________ Date __________

Name of person taking consent
(Print) ___________________________ Signed ___________________________ Date __________

N.B. This Consent form will be stored separately from the responses you provide. The interview transcripts and recordings will be destroyed at the end of the study.
Appendix 6 Support service details to be offered as appropriate after interview

If participating in the research has brought up issues for you and you would like to talk to somebody there are a number of options available. Your GP, midwife and your Health visitor will all be happy to help you however, should you require more help there are several services available:

Listening services
Many maternity units offer women the opportunity to talk about their experience through ‘birth stories’/listening services. These services usually give women the opportunity to talk about their pregnancy and birth to someone in a supportive environment. They are often run by a midwife with a special interest in this area. They may not have counselling skills but will be able to signpost you to additional services or people you could talk to. If you think this would be helpful for you please contact your local maternity service to see if they offer this service.

PALS
The Patient Advice and Liaison Service (PALS), ensures that the NHS listens to patients, their relatives, carers and friends, answers their questions and resolves their concerns as quickly as possible. PALS also helps the NHS to improve services by listening to what matters to patients and their loved ones and making changes, when appropriate. You can contact the national PALS website to find details of your local services at http://www.pals.nhs.uk/
If you are considering making a formal complaint about your care the PALS department will talk through concerns that you may have and inform you about local arrangements for formal complaint.

Supervisor of Midwives
Supervisors of midwives give guidance and support to both midwives and women. They support the practice of midwives and ensure that the care offered is right for you. Supervisors of Midwives can discuss and debrief with you if you are unhappy with your birth outcome or treatment. A supervisor can go through your notes and discuss your experiences with you if you are unable to do this with your midwife.
You can contact a Supervisor of Midwives by telephoning your local maternity unit. Alternatively you can access the contact details of Local Supervising Authority Midwifery Officers (LSAMO) who give advice on the supervision of midwives via the NMC website at http://www.nmc-uk.org/Nurses-and-midwives/Midwifery/Supervisor-of-midwives/Contact-a-LSAMO/

Birth Trauma Association
This organisation is run by mothers who wish to support other women who have suffered difficult births; they aim to offer advice and support to all women who are finding it hard to cope with their childbirth experience. More information is available through their website http://www.birthtraumaassociation.org.uk/policy.htm
Appendix 7 Thematic interview schedule

This is the guide prepared for FREGC approval.

Introduction and Consent
1. Check that the participant has read and understood the Participant Information Sheet and completed the consent form.
2. Thank the participant for their involvement with the project.
3. Remind her that:
   - There are no right or wrong answers to the questions being asked, I am simply interested in her opinions.
   - She can terminate the interview at any time without needing to provide a reason.
   - She does not have to answer any questions that she feels uncomfortable with.
4. Ensure that:
   - She is aware that the interview will be audio recorded and last approximately one hour.
   a. I am obliged to inform someone if she were to say something that potentially indicated that she or someone else was at risk of harm.
5. Ask if the participant has any questions before the interview begins.

RECORDER ON
Examples of interview concepts to introduce if the woman doesn’t raise them herself.

Interview one
- Past experiences of exercise.
- Exercise participation in this pregnancy.
- Sources of information.
- How exercise behaviour has been affected by pregnancy.
- Influences on decisions regarding exercise.
- Barriers to exercise.
- Motivators/enablers to exercise.

Interview two and three
- Exercise participation in this pregnancy.
- Influences on decision regarding exercise.
- Barriers to exercise.
- Motivators to exercise.
- Sources of information.
- How exercise behaviour has been affected by pregnancy.

RECORDER OFF
Thank woman for her contribution and confirm arrangements for reviewing the transcript and planning next interview.

As anticipated the guide was modified as the categories emerged and further questions developed to enable the amplification and clarification of the theoretical constructs generated by the data. Some questions were developed to maintain the ‘relationship’ with the woman such as remembering things she had mentioned as important to her before. Or to test a perception developed about them ‘Would it be accurate to say that you are quite an active person, but structured exercise is limited to social engagement with partner or friend.’
### Appendix 8 Evolving interview schedule

<table>
<thead>
<tr>
<th>Example of developing interview schedule</th>
<th>Developing category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Following Information/Advice</strong></td>
<td></td>
</tr>
<tr>
<td>What advice would you give other mums about exercising in pregnancy?</td>
<td>Overcoming barriers</td>
</tr>
<tr>
<td>Do you think pregnancy is a trigger for some women to be healthier? Has that been the case for you?</td>
<td>Doing pregnancy</td>
</tr>
<tr>
<td><strong>Why Exercise</strong></td>
<td></td>
</tr>
<tr>
<td>What were your motivators to exercise pre-pregnancy?</td>
<td>Investing in exercise</td>
</tr>
<tr>
<td>Is it mainly about short term goals? How much is it an investment for the future?</td>
<td>Investing in exercise</td>
</tr>
<tr>
<td>How much is the exercising about labour? Have you always been naturally slim; do you think you would have exercise more if overweight?</td>
<td>Investing in exercise ‘Good’ reasons to exercise</td>
</tr>
<tr>
<td>What element of exercise do you most miss?</td>
<td>Exercise deprivation</td>
</tr>
<tr>
<td><strong>Setting Limits</strong></td>
<td></td>
</tr>
<tr>
<td>Have you set limits wrt Exercise i.e. min or max you will do?</td>
<td>Adjusting activities</td>
</tr>
<tr>
<td>How do you decide what’s OK?</td>
<td>- Listening to body Conceptualising information</td>
</tr>
<tr>
<td>What would make it easier for you to exercise/What would you say are the main barriers to exercising?</td>
<td>Overcoming barriers</td>
</tr>
<tr>
<td>Have you done what you expected/hoped to?</td>
<td>Fitting exercise in being selfish</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td></td>
</tr>
<tr>
<td>What have been the major concern/challenges in this pregnancy?</td>
<td>Calculating risk</td>
</tr>
<tr>
<td>What was it about pregnancy that made you slow down?</td>
<td>Accepting and Adjusting Being on safe side Facing disapproval</td>
</tr>
<tr>
<td><strong>Social Influences</strong></td>
<td></td>
</tr>
<tr>
<td>Have you been influenced by other people’s perceptions/comments?</td>
<td>Identifying social expectations Pregnancy as an excuse Being under scrutiny Facing disapproval</td>
</tr>
<tr>
<td><strong>Self-identity/Esteem/Image</strong></td>
<td></td>
</tr>
<tr>
<td>Can describe how feel about changing body shape What about before obviously pregnant?</td>
<td>Exercising for body image Exercising for self-esteem</td>
</tr>
<tr>
<td>How have you felt about other people’s response to your pregnancy?</td>
<td>Doing pregnancy</td>
</tr>
<tr>
<td>How does exercise affect baby? / How does baby benefit?</td>
<td>Self-regulation ‘Good’ reasons to exercise</td>
</tr>
<tr>
<td>Does being an ´exerciser make you feel ´proud’ in any way?</td>
<td>Exercise as attainment</td>
</tr>
<tr>
<td>How would you describe yourself with respect to health and exercise?</td>
<td>Being an exerciser Being perceived differently</td>
</tr>
</tbody>
</table>
Appendix 9 Thank you email

Dear

I would sincerely like to thank you for taking part in this study and sharing your thoughts on your decision-making regarding exercising in pregnancy.

As we discussed I have attached a copy of the transcript of the interview and would be grateful if you could read this in your own time. In the future I hope to present the study findings at professional conferences and in academic journals. The finished dissertation will be publicly available on the university web site. To demonstrate your thoughts clearly, anonymous direct quotes may be used however anonymity and confidentiality will be maintained in all cases using the pseudonym you chose, therefore your name will not appear anywhere nor will anyone be able to link specific parts of the findings to you.

Please let me know if:
There are any inaccuracies in the text or anything you would like me to remove
There are any additional comments you would like to add

Further to our conversation, should anything else come to mind, please do not hesitate to contact me by phone or email and I will be more than happy to meet you again.

Thanks again your help is very much appreciated.

Jenny

Jenny Hassall
Research Student
School of Nursing and Midwifery
University of Brighton
Robert Dodd Building
49 Darley Road
Eastbourne, BN20 7UR
Telephone 07532091784
exerciseinpregnancy@brighton.ac.uk
### Appendix 10 Concepts and categories arising from data analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Focused Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAINTAINING THE EXERCISING SELF</strong></td>
<td><strong>PRE – PREGNANT SELF Antecedent conditions</strong></td>
<td>Regaining pre-pregnant self, an exercise identity, knowing your body, having a supportive partner</td>
</tr>
<tr>
<td></td>
<td><strong>Exercising for body image (Body as Object)</strong></td>
<td>Wanting to look good, managing weight gain, pregnant not fat, getting body back</td>
</tr>
<tr>
<td></td>
<td><strong>Exercising for self-esteem (Body functionality)</strong></td>
<td>Unanchored identity, maintaining self through exercise, socialising through exercise, having me time, exercise as an accomplishment, investing in exercise</td>
</tr>
<tr>
<td><strong>CONSTRUCTING THE PREGNANT SELF</strong></td>
<td><strong>My pregnant self</strong></td>
<td>Maintaining unique normality, accepting and adjusting, doing pregnancy, my clothes</td>
</tr>
<tr>
<td></td>
<td><strong>Facing social expectations</strong></td>
<td>Identifying social ideologies, pregnancy as an excuse, media and public opinion, family and friends influence</td>
</tr>
<tr>
<td><strong>IDENTITY CONFLICT</strong></td>
<td><strong>Exercising self versus the pregnant self</strong></td>
<td>Being under scrutiny, facing disapproval, challenging v conforming social ideologies, conflicting advice/uncertainty, rest v activity</td>
</tr>
<tr>
<td><strong>ACCOMMODATING THE PREGNANT SELF</strong></td>
<td><strong>Cultivating resources</strong></td>
<td>Sourcing information, being sanctioned, role models, having a supportive environment, drawing on previous experience, knowing your body</td>
</tr>
<tr>
<td></td>
<td><strong>Weighing the balance</strong></td>
<td>Contextualising information, protecting investments, listening to body, using common sense, selective exposure</td>
</tr>
<tr>
<td></td>
<td><strong>Accommodating and assimilating</strong></td>
<td>Justify decisions, passing, adjusting activities, self-regulation</td>
</tr>
<tr>
<td><strong>POSSIBLE FUTURE SELVES</strong></td>
<td><strong>Desired self</strong></td>
<td>Regaining pre-pregnant self / unique normality, back to normal</td>
</tr>
<tr>
<td></td>
<td><strong>Ought self</strong></td>
<td>‘Good’ mother (doing pregnancy)</td>
</tr>
<tr>
<td></td>
<td><strong>Feared self</strong></td>
<td>Feared fat self, ‘Bad’ mother</td>
</tr>
</tbody>
</table>
Appendix 11 Example of clustering diagram

[Figure 4-4 pp. 86] Red circles denote early examples of sub categories exercising for body image and exercising for self-esteem
### Appendix 12 Example of media headlines during study period

<table>
<thead>
<tr>
<th>Date</th>
<th>Media headline</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>April, 2010</td>
<td>Pregnancy exercise ‘slims babies’ (BBC, 2010).</td>
<td>Exercise during pregnancy could have long-term health benefits for health of mother and child</td>
</tr>
<tr>
<td>May, 2012</td>
<td>You Selfish cow (Wright, 2012).</td>
<td>Six-month pregnant Jenny was called a ‘selfish cow’ while out for a run followed by ‘You should be ashamed of yourself,’ from a woman, smoking a cigarette, while pushing her own child along</td>
</tr>
<tr>
<td>May, 2012</td>
<td>Now dieting in pregnancy is good for you (Cassidy, 2012).</td>
<td>Eating for two should be a thing of the past dieting during pregnancy could reduce complications for women and lead to healthier babies. Women are not being encouraged to lose weight during pregnancy; this is about managing excessive weight or weight gain.</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JUNE, 2012 FIRST INTERVIEW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July, 2012</td>
<td>London Olympic Games</td>
<td>Kerri Walsh Jennings was five weeks’ pregnant when she won third gold medal at London Olympics (Abraham, 2012). NBC’s chief medical editor, says ‘The risk that she put to herself and fetus was zero to none,’</td>
</tr>
<tr>
<td></td>
<td>Heavily pregnant Malaysian shooter Nur Suryani Mohamed Taibi fails to deliver in 10m air rifle. (Telegraph Sport, 2012).</td>
<td>‘Most people said I was crazy and selfish because they think I am jeopardising my baby’s health,’ she said. ‘My husband said grab it as this is a rare chance I am the mother. I know what I can do’</td>
</tr>
<tr>
<td>Nov, 2012</td>
<td>Kate Middleton Swats at Pregnancy Rumour with a Field Hockey Stick. (Finn, 2012)</td>
<td>The future mother of Prince William’s children probably would be taking it a bit easier if she were carrying an heir to the throne. Then again, moms-to-be are certainly entitled to their exercise!</td>
</tr>
<tr>
<td>Feb, 2013</td>
<td>Pregnant and pumping iron! (McAndrew, 2013).</td>
<td>Former model Nell McAndrew defies critics by exercising while expecting – and medics say she’s right</td>
</tr>
</tbody>
</table>

Table A2 Media headlines during study period (continued overleaf)

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131 Flam, L. (2012). Beach volleyball gold medalist Kerri Walsh Jennings: I was pregnant at the Olympics Online retrieved 14th Oct 2012 from http://www.today.com/health/beach-volleyball-gold-medalist-kerri-walsh-jennings-i-was-pregnant-1B6065971

132 McAndrew, N. (2013). Former model Nell McAndrew defies critics by exercising while expecting – and medics say she’s right

---

278
<table>
<thead>
<tr>
<th>Date</th>
<th>Headline</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July, 2013</td>
<td>Kate Middleton's 'Mummy Tummy' Helps Normalize Pregnancy (Richmond, 2013)</td>
<td>The duchess glowed as she debuted her little prince and moms around the world noticed that post-baby bump she proudly showed off. I think that was shocking for some people to see, but it was wonderful because that’s what moms really look like after they’ve given birth.</td>
</tr>
<tr>
<td>Aug, 2013</td>
<td>Pregnant Zara Phillips carries on riding ignoring NHS guidelines (Mendick, 2013)</td>
<td>Zara Phillips went out riding, proudly displaying a baby bump and steadfastly ignoring NHS guidelines that suggest horses and pregnancy don’t go.</td>
</tr>
<tr>
<td>Sept, 2013</td>
<td>Pregnant woman two weeks from giving birth posts pictures of herself WEIGHTLIFTING (Le Marie, 2013)</td>
<td>This generated a torrent of social media comment both abusive and supportive.</td>
</tr>
<tr>
<td>Dec, 2013</td>
<td>'I'll work out until the end' (Daily Mail, 2013)</td>
<td>Heavily-pregnant ballerina on why she is still dancing at 39 weeks and how it benefits her baby.</td>
</tr>
</tbody>
</table>

**Table A2 Media headlines during study period (continued from previous page)**


Appendix 13 Theoretical memo June, 2015 ‘Emancipated decision-making’

**TM Emancipated decision-making’ 14/6/14**

Exploring ‘Emancipated decision-making’ (Wittmann-Price, 2004:138) as a potential theory that may explain the relationship between the categories at first appeared quite promising and it has helped identify an alternative lens through which to view the data and further develop theoretical sensitivity. However, further analysis has highlighted that this framework is inappropriately and prematurely, forcing the data into these categories. I will set aside this idea but revisit it later during theoretical integration to identify how the emergent theory might fit with extant literature.

In summary, the model was developed from a concept analysis that highlights 5 key attributes of emancipation in decision-making as demonstrated in Table A-2 below. On first appraisal this appeared to correspond with the emerging categories as identified in the bottom right section of the table below.

### The Wittmann-Price model (Wittmann Price, 2004 pp. 443)

<table>
<thead>
<tr>
<th>5 key attributes Emancipation in decision-making model</th>
<th>Corresponding Categories from this study’s data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowerment</td>
<td>Wanting Autonomy</td>
</tr>
<tr>
<td>Flexible environment</td>
<td>Having a supportive Environment</td>
</tr>
<tr>
<td>Personal knowledge</td>
<td>Maintaining self</td>
</tr>
<tr>
<td>Social norms</td>
<td>Facing social expectations</td>
</tr>
<tr>
<td>Reflection</td>
<td>Weighing the balance</td>
</tr>
</tbody>
</table>

**Figure A1 Comparing Categories with EDM model**

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This also highlights the extent to which women's decisions continue to be constrained by contextual factors, whereby they are often influenced to choose the most socially accepted alternative rather than the one that is best for them personally. Furthermore, if women deal with conflicting influences by rationalising their decisions they may find themselves in the position described by Cook et al. (2010) whereby they believe they are making informed choices, but subsequently realise that they had not been fully informed and make decisions that they later regret. While this work is based on women's reasoning regarding advanced maternal age and delayed childbearing similar to this study it identifies that women are constrained by the limited availability of appropriate information and a supportive environment to make informed decisions.

Wittmann-Price (2004) proposed that implementing a model of emancipated decision-making (EDM) would facilitate women to choose options that better suited their preference or lifestyle. She posits that regardless of whether or not they chose the socially encouraged alternative this approach ultimately enables a more positive and satisfying decision. The practice based theory of EDM and the antecedent of oppression were derived through abductive reasoning and a concept analysis subsequently completed to explain its attributes (Wittmann-Price, 2004). Theoretically, EDM is intended to produce Satisfaction with Decision (SWD) these studies measured (SWD) using the Holmes-Rovner et al. (1996) SWD scale as the outcome variable (Wittmann-Price, 2004). As illustrated in the model [Figure A1] this work was originally based on five subconcepts, and has subsequently been tested using three different clinical examples infant feeding, pain management and choice of delivery method.

**TM revised 4/4/15**

A recent literature search has highlighted that this model has been modified (published Dec 2104) and two of the original sub concepts reflection, and empowerment removed as they were considered unnecessary and difficult to assess. The revised model the EDM-r is posseted to be a reliable, valid, 20-item, three-subscale (personal knowledge, flexible environment, and awareness of social norms) instrument for determining if women are emancipated in their decision-making process about health care issues (Wittmann-Price & Price, 2014). The scale has been subject to scrutiny by clinical experts in decision-making and/or women’s health to assess content validity. This could prove an interesting opportunity for future collaborative research whereby the EDMr could be applied in relation to exercise in pregnancy. Interestingly subsequent revisions of the Wittmann-Price model (2014) now fit more cohesively with the substantive theory.

Positioned from a feminist philosophy, based on critical social theory, Wittmann-Price demonstrates how the concept of emancipation can be applied to influence the health care of women in relation to decision-making (Wittmann-Price & Price, 2014). This goes beyond

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being empowered through education, but requires unconditional acceptance of their resulting choice. As has been highlighted in the literature, this identifies how health professionals themselves also need to be emancipated from the limitations imposed on them by the frameworks in which they practise (Hollins Martin et al. 2004). The women describe similar circumstances where they consider health professional advice is constrained by concerns regarding litigation, furthermore they describe ‘being under scrutiny’ that suggests their choices are not always unconditionally accepted, hence they take actions to justify decisions and conceal their activity or pregnancy ‘passing’ to avoid disapproval or being seen as deviant.

NB: In the final rendering of the substantive theory this material was not ultimately used but has been included as an example of the analytical process and theory development.
Appendix 14 Personal reflection on my research journey

Reflecting on my research journey I identified three strands of learning

- My understanding and appreciation of grounded theory.
- Practical skills as a researcher, and learning about myself as a person.
- An enhanced insight into the complexity of the psychosocial influences on pregnant women’s behaviours particularly the transitional nature of pregnancy and socio-cultural normative values.

I was initially attracted to constructivist grounded theory as a research methodology by its underlying pragmatist philosophy and the potential it offered to develop theory from practice. It was eminently suitable for addressing the research aim of developing a decision-making model which as identified in chapter 2, posed a research problem where no previous theory existed. This approach offered an effective way of giving the women a voice allowing rich contextualised accounts of their subjective experiences of pregnancy. This was enhanced by adopting some of the key tenets of feminist research to record women's life narratives, enhanced reflexivity on the part of the researcher, and the illumination of dominant sociocultural influences (England 1993).

I was also drawn by the systematic set of procedures grounded theory required but on hindsight realise I had underestimated the complexity of theory building. As a neophyte researcher the flexibility offered by this approach was at times overwhelming and reflected in a hesitancy to fully embrace the opportunity to ‘dance with the data’. My experience resonates well with the following description of grounded theory:

‘a lengthy and time-consuming process.... a researcher must be willing to live with ambiguity until the analytic story begins to fall into place which can be considerably late in the research process ’(Corbin & Holt, 2005, 5).

While descriptions of data analysis (Birks & Mills, 2015; Charmaz, 2014) appeared logical and systematic putting these into practice was challenging and it took a long time to fully appreciate the complexity and nuances of the data process of analysis. I developed competence and confidence with this method through practise accompanied by rich supervisory support and the opportunity for peer dialogue through the university ‘grounded theory interest group’.

In some ways being Ph.D. student was simultaneously influential and marginal occupying a position in a liminal space transitioning from being to becoming. Researching a topic I felt passionate about made it difficult to set boundaries which was compounded by having to manage multiple roles as a part time student. This
resulted in the research permeating multiple elements of my life both professional and personal. As a lone researcher I gained immense value from discussing the research with friends and colleagues which enabled me to develop fresh perspectives on the emerging theory and latterly develop confidence in the interpretation of the data. As the data analysis progressed the richer appeared the gift, the women had given me which strengthened my occasional waning motivation to continue with the unwieldy process of data analysis.

I have developed a far greater appreciation of the complex and varied transitional process of pregnancy and the conflicting influences engendered by social norms and expectations of pregnancy. Not only did this inform and influence the analysis but has also made me look on my role as a midwifery lecturer in a different light. I anticipate that it will inform and enrich future teaching, writing and clinical practice. Writing the thesis has also highlighted how frequently I encounter cognitive dissonance and how selective perception influences numerous decisions both personal and professional. Applying this to practice it contributes to explanations of how research that challenges our current behaviour may be dismissed and not adopted in practice. This would be an interesting avenue to explore through future research.

The next stage in my journey as an early career research is to carefully consider how I will disseminate these findings. Ideally, this will involve publishing, networking and presenting in professional forum but simultaneously I hope to share this knowledge in the public sphere. In this way I can build on the knowledge, the women shared with me and make a difference in the lives of other women.