

**‘IT’S ALL ABOUT MODIFYING YOUR EXPECTATIONS...MY JOB RIGHT NOW IS
TO BE HEALTHY, NOT SUPER FIT’: WOMEN’S EXPERIENCES WITH PHYSICAL
ACTIVITY THROUGHOUT THE COURSE OF PREGNANCY**

by

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B.A., The University of British Columbia, 2008

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

The Faculty of Graduate Studies

(Kinesiology)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

September 2011

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Abstract

Physical activity levels adopted during pregnancy can impact future behaviours post-partum, resulting in long term physiological and psychological effects (Hausenblas et al., 2008). The purpose of this study was to qualitatively examine women's experiences with physical activity throughout the course of pregnancy. Nine previously active expecting women participated in a series of two semi-structured interviews in early second trimester and mid to late third trimester. Data was analyzed using interpretative phenomenological analysis. Results revealed that physical barriers to activity changed throughout the course of pregnancy. Commonly identified barriers during the first and second trimester included fear of miscarriage, nausea/vomiting, fatigue, and weather, while changes in the body, fear of injury, pain and discomfort, and work demands were prominent in the third trimester. In contrast, the identified environmental barriers to activity such as the influence of experts, information sources regarding physical activity (i.e. books, internet) and weather, remained stable throughout pregnancy. Despite these barriers, participants were motivated to engage in physical activity throughout pregnancy to maintain physical fitness, health of the baby and themselves, and to relieve stress. Physical activity behaviours were supported by the participants' partners; however, the majority of participants sought out prenatal exercise classes to create a social network with other expecting mothers. The need to examine pregnant women's experiences with physical activity from a holistic approach beyond the biomedical model is discussed. Findings contribute to the sport, exercise, and health psychology literature focusing on physical activity during pregnancy and could potentially inform subsequent interventions focused on motivation for physical activity during pregnancy. Participants in this study were predominantly white, heterosexual, well-educated, and English

speaking; therefore, future studies should examine the experiences of single women, expecting mothers who identify as lesbian, and women who are diverse in terms of income and educational attainment.

Preface

Ethics approval for this research was obtained from The University of British Columbia Behavioural Research Ethics Board; certificate number H10-00108. Original approval was obtained on July 16, 2010, and an amendment was approved on October 26, 2010.

Table of contents

Abstract.....	ii
Preface.....	iv
Table of Contents	v
List of Tables	ix
List of Figures.....	x
Acknowledgements	xi
CHAPTER 1: INTRODUCTION.....	1
1.1 Exercise and Pregnancy: History of Guidelines.....	1
1.2 Exercise and Pregnancy: Current Guidelines.....	3
1.3 Notes of Caution and Contraindications.....	5
1.4 Sport and 'The Pregnant Athlete'	6
1.5 Physical Activity during Pregnancy: Beliefs and Behaviours.....	6
1.6 Justification and Relevance.....	9
1.6.1 Self-efficacy Beliefs.....	10
1.6.2 Theory of Planned Behaviour	12
1.6.3 Empirical Research	12
1.6.4 Identifying Gaps.....	13
1.7 Purpose and Research Questions	14
CHAPTER 2: LITERATURE REVIEW	16
2.1 Motivation.....	16
2.2 Social Support	18
2.3 Self-efficacy Theory	21

2.3.1	Physical Factors	21
2.3.2	Personal and Environmental Factors	26
2.3.3	Information Sources.....	30
2.3.4	Self-efficacy Theory: Summary.....	34
2.4	Theory of Planned Behaviour	35
2.5	Literature Review: Summary	38
CHAPTER 3: METHOD		41
3.1	Method	41
3.2	Recruitment.....	43
3.3	Sample.....	46
3.4	Data Collection and Rationale	49
3.5	Data Analysis.....	51
3.6	Reflexivity.....	53
CHAPTER 4: RESULTS		58
4.1	Participant Profiles.....	58
4.1.1	Heather.....	58
4.1.2	Kaitlin	59
4.1.3	Hilary	59
4.1.4	Anne.....	60
4.1.5	Julie.....	61
4.1.6	Dominique.....	62
4.1.7	Maria.....	62
4.1.8	Samantha	63

4.1.9	Kristine.....	64
4.2	Findings.....	65
4.3	'I've Slowed Down': Physical Barriers to Physical Activity in Early Pregnancy.....	65
4.3.1	Body Concerns.....	66
4.3.2	Fatigue.....	70
4.3.3	The Experience of a Previous Miscarriage.....	72
4.3.4	Nausea and Vomiting.....	74
4.4	'It's just Really Uncomfortable': Changes in Barriers as Pregnancy Progresses.....	75
4.4.1	Injury and/or Injury Potential.....	75
4.4.2	Pain/Comfort Level.....	77
4.4.3	Negotiating the Physical Barriers to Physical Activity.....	79
4.5	'It's just So Confusing': Information Sources.....	80
4.5.1	Influence of Experts.....	81
4.5.2	Information Sources.....	84
4.5.3	Weather.....	85
4.6	'I need to be Healthy for me and the Baby Now': Motivational Factors.....	86
4.6.1	Exercise to Help with Labour.....	86
4.6.2	Staying in Shape vs. Being Healthy.....	88
4.6.3	Stress Relief.....	89
4.6.4	The Impact of Informational and Motivational Factors over Time.....	90
4.7	Social Factors.....	90
4.8	'I Don't Really Care what they Think': Social Support for Physical Activity ...	90
4.8.1	Partner.....	91

4.8.2	Family and Friends	92
4.8.3	The Impact of Social Support	94
4.9	Socializing.....	94
4.10	'Why Should I be the One Giving Up my Career?': Age and Identity	96
4.10.1	Concern with Maternity Leave	96
4.10.2	The Impact of Age on Post-partum Expectations	100
4.10.3	Concluding Remarks.....	102
CHAPTER 5:	DISCUSSION	104
5.1	Strengths and Limitations.....	112
5.2	Implications	114
5.3	Future Directions	115
5.4	Summary.....	117
REFERENCES.....		119
APPENDICES		129
Appendix A:	Interview Schedule.....	129
Appendix B:	Initial Contact Letter	133
Appendix C:	Consent Form	135
Appendix D:	Letter to Prenatal Fitness Instructors.....	137
Appendix E:	Demographic Questionnaire.....	138
Appendix F:	Recruitment Poster.....	141

List of Tables

Table 3.1	Participant Demographics.....	48
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List of Figures

Figure 1.1 The interaction between personal, behavioural, and environmental determinants impacts self-efficacy beliefs.....11

Figure 2.1 Relationship between attitude, subjective norms, and perceived behavioural control determines intentions and behaviour.....36

Acknowledgements

First and foremost, I would like to thank the nine women who partook in the study and shared with me their time, personal stories, and important insights. This study would not have been possible without them.

I especially acknowledge my supervisor, Dr. Peter Crocker, who has provided me with advice, encouragement, and support throughout the course of this Masters degree. I also acknowledge and thank the members of my thesis committee: Dr. Wendy Frisby and Dr. Laura Hurd Clarke whose guidance, advice, and recommendations helped improve my understanding of this research.

I would also like to thank the members of the Exercise and Sport Psychology Lab, whose support and guidance throughout the research process was invaluable and greatly appreciated: Sara Brune, Katie Gunnell, Carolyn McEwen, Amber Mosewich, and Benjamin Schellenberg.

A special thank you goes to Dr. Laura Hurd Clarke who has provided me with tremendous mentorship, guidance, and support over the last year and half. I would also like to acknowledge my colleagues at the Auditorium Annex: Amanda DeLisio, Alex Korotchenko, Bradley Millington, and Katie Morton.

Finally, I thank my parents who have provided me with endless support during my time at UBC.

Chapter 1: Introduction

On a Sunday afternoon, I was watching golf on television when the cameras focused on one of the women playing in the tournament; she was eight months pregnant. The first question I asked myself was: I wonder what makes her want to play golf so close to delivery? Coincidentally, a few months later as I was going through my weight circuit in the gym, I met a woman also working out who was seven months pregnant. I asked her if she planned to stop exercising before the baby was born and she informed me that her doctor had told her she could be active until the day of her delivery as long as she did not experience any problems. In contrast, I also know a woman who used to be a competitive tri-athlete and the day she found out she was pregnant with twins, stopped engaging in any form of physical activity until they were born. This brought me to ask multiple questions: Do most women remain physically active throughout pregnancy? Why or why not?

1.1 Exercise and Pregnancy: History of Guidelines

During the 1980s when women from the baby boomer generation increased their levels of physical activity, they inquired about whether they should be continuing these activities while pregnant. As a result, researchers and health care professionals were prompted to investigate the safety of physical activity pursuits during pregnancy (Wolfe & Davies, 2003). Findings from this research generated subsequent questions and a body of knowledge rapidly emerged investigating the physiological risks and benefits of exercise during pregnancy for the mother and fetus (Wolfe & Davies, 2003).

According to research from the last two decades, the mother and fetus could obtain several benefits from exercise, but physical activity during pregnancy placed women at risk. Benefits associated with exercising while pregnant were assistance with labour and subsequent recovery, fitness maintenance, prevention of excessive weight gain and gestational diabetes, diminished lower back pain and better posture, and help with the psychological demands of

pregnancy (Wolfe & Davies, 2003). Despite these potential benefits, caution was raised by health care professionals as exercise brought on increased risks for complications such as early miscarriage, spontaneous abortion, premature labour, chronic fatigue, and possible injuries. Furthermore, concern was raised and apparent within this body of literature as evidence suggested that the fetus may be at “risk for distress and hypoxia because he [or she] would be competing for oxygenated blood flow with the mother” (Wolfe & Davies, 2003, p. 488).

Given that exercise during pregnancy was suggested to have its risks and benefits, women were advised to consult a health care professional before engaging in any physical activity while pregnant (Wolfe & Davies, 2003). Based on their knowledge of the risks and benefits as well as of their assessment of the individual, health care professionals would prescribe exercise according to the needs of their patient (Artal & O’Toole, 2003).

In response to inquiries into the safety of exercising during pregnancy, the American College of Obstetricians and Gynecologists (ACOG) published ‘Exercise during Pregnancy’ guidelines in 1985 (Artal & O’Toole, 2003) suggesting that women could exercise as long as they only did so for 15 minutes at a time with a heart rate kept below 140 beats per minute. Women who had not been previously active prior to pregnancy were advised not to begin an exercise program. Due to their conservative nature, the guidelines were met with controversy by the general public and health care professionals prompting further research on the subject. This resulted in revisions to the American guidelines published in 1994 and again in 2002, making them “progressively more evidence-based”, “less restrictive”, and “widely accepted” (Wolfe & Davies, 2003, p. 489). In Canada, guidelines entitled ‘Fitness and Pregnancy’ were first published by Health Canada (Wolfe & Davies, 2003). The guidelines promoted exercise during pregnancy and suggested that pregnancy was a great time to develop a healthier lifestyle. It was

recommended that women engage in aerobic exercise three to five days per week for at least 15 minutes per time. Women were cautioned to use the lower end of their suggested heart rate and to avoid overexertion. In addition, an information brochure published by Health Canada and the Canadian Society for Exercise Physiology (CSEP) was made available to pregnant women entitled 'Active Living during Pregnancy: Physical Activity Guidelines for Mother and Baby' (Wolfe & Davies, 2003).

Following the publication of the American and Canadian guidelines, the Physical Activity Readiness Examination (PARmed-X for Pregnancy) was made available to physicians in North America (Wolfe & Davies, 2003). This tool offered criteria for the assessment of expecting mothers to ensure their safety while engaging in physical activity during their pregnancy. Exercise prescription guidelines were also given to health care professionals (physicians and midwives) with the proper aerobic and muscle conditioning recommendations for exercise throughout the course of pregnancy. These guidelines provided health care professionals with safe types, intensities, and time engaged in exercise, in addition to recommended rates of progression. This guide encompassed safety precautions such as contraindications to exercise, tips on how to live an active lifestyle, nutrition, and the importance of a positive self-image (Artal & O'Toole, 2003).

1.2 Exercise and Pregnancy: Current Guidelines

Updated Canadian guidelines and recommendations for exercise during pregnancy were published in June 2003 by the Society of Obstetricians and Gynecologists of Canada (SOGC) and the Canadian Society for Exercise Physiology (CSEP) (Wolfe & Davies, 2003). These

recommendations are the most up to date and are currently used by health care professionals. Today, the common perspective is that exercise during pregnancy promotes overall health and positively affects the health and well-being of women not only during pregnancy, but also post labour and long-term (Artal & O'Toole, 2003; Clapp, 2000; Wolfe & Davies, 2003). Furthermore, the recommendations by SOGC and CSEP state that women who have been sedentary pre-pregnancy can also benefit from physical activity as long as they undergo a medical evaluation before beginning an exercise program (Wolfe & Davies, 2003). Despite recommending exercise during pregnancy for sedentary women, the second trimester is suggested to be the best time for previously inactive women to begin an exercise program since the first trimester often brings on nausea, morning sickness, and fatigue. However, there is concern with regards to the elevation of one's core body temperature during pregnancy as this could potentially put the fetus at risk and increase the chances of an early miscarriage (Artal & O'Toole, 2003). Exercising for the first time during the third trimester is also discouraged since the fetus may compete with the mother for oxygenated blood flow, glucose availability may be lower, and heat dissipation is highest during this time (Artal & O'Toole, 2003; Clapp, 2000).

Guidelines are broken down into sections focusing on intensity, duration, and frequency of exercise. They recommend physical activity three times a week for 15 minutes at a time, with the incorporation of a warm up and cool down as well as a stretching session. An indication that the intensity of exercise is too elevated is if the woman cannot carry on a conversation while exercising. The frequency and intensity of activity can be increased during the second trimester to 30 minutes per session four to five times per week. Resistance training is recommended, especially for the upper body, lower back and abdomen as it promotes good posture, helps prevent pain and diastasis recti (splitting of abs), and helps with labour. Upper and lower body

strengthening exercises are suggested to support the changes in the musculoskeletal makeup of the body during pregnancy. Finally, pelvic floor exercises are recommended (often termed 'kegels') to help prevent urinary incontinence. The recommendations stress that exercises in the supine position should be avoided after four months (Clark, Cotton, & Pivarnik, 1991). The cessation of abdominal exercises is also stressed if a woman develops diastasis recti.

1.3 Notes of Caution and Contraindications

According to the American and Canadian 'Exercise during Pregnancy' guidelines (Artal & O'Toole, 2003; Wolfe & Davies, 2003), caution is to be observed and exercise should be monitored or avoided during pregnancy if women are morbidly obese or extremely underweight, suffer from severe anemia, unevaluated maternal cardiac arrhythmia, chronic bronchitis, poorly controlled type 1 diabetes, a poorly controlled seizure disorder or hyperthyroidism, have orthopedic limitations, and for those who are heavy smokers. Furthermore, guidelines suggest that women should not exercise when pregnant if they have heart or lung disease, an incompetent cervix, are at risk for premature labour, experience continuous bleeding in the second or third trimester, have placenta previa after 26 weeks gestation, have ruptured membranes, or suffer from pre-eclampsia (pregnancy-induced hypertension). Women are urged to cease exercising if they experience vaginal bleeding, shortness of breath, dizziness, headaches, chest pain, muscle weakness, calf pain or swelling, pre-term labour, decreased fetal movement, or amniotic fluid leakage.

1.4 Sport and ‘The Pregnant Athlete’

Not only are ‘Exercise during Pregnancy’ guidelines available, but recommendations for competitive athletes who are pregnant and are more active than the average woman have also been published (Clapp & Rizk, 1992; Hale & Milne, 1996). Evidence for the risks and benefits of high intensity training during pregnancy is diverse and results vary. Some research suggests that competitive athletes are not at higher risk for premature labour and delivery even if they engage in moderate to high-intensity exercise during pregnancy (Clapp, Kim, Burciu, & Lopez, 2000; Clapp & Rizk, 1992; Veille, Hohimer, Burry, & Speroff, 1985). Research by Clapp and Rizk (1992) even suggests that moderate to high-intensity training can decrease labour times and the rate of medical intervention (i.e. the use of forceps and c-sections). In contrast, Hale & Milne’s (1996) findings suggest that women who keep training during pregnancy at a high intensity and frequency may be at an increased risk for complications throughout the course of pregnancy and during labour. These athletes may also gain less weight, potentially leading to a baby with a lower birth weight. Finally, Artal and Sherman (1999) recommend that contact sports should be avoided as this increases the risk of injury for both the mother and the fetus. Scuba diving and exercise at high altitudes are also discouraged (Artal et al., 1995; Artal & Sherman, 1999).

1.5 Physical Activity during Pregnancy: Beliefs and Behaviours

It has recently been recognized that many women do not meet the recommended guidelines for physical activity during pregnancy (Clarke & Gross, 2004; Evenson & Bradley, 2010; Pereira et al., 2007). Research has suggested that this is partly due to the added physical

and psychological changes and demands occurring during this time period. For example, weight gain alters the musculoskeletal system which changes posture, balance, gait, as well as joint laxity. This causes the body's center of gravity to shift, and leads to 'spinal lordosis' (curvature in the spinal cord) which one compensates for by flexing the spine and abducting the shoulders, making physical activity more difficult (Clapp & Rizk, 1992). An increase in hormones is also present within the pregnant body (such as progesterone and relaxin) which increases the laxity of the joints and pelvis as pregnancy progresses and increases injury proneness. Other physical changes possibly affecting expecting women's attitudes and physical activity behaviours include morning sickness, nausea (O'Brien, 1990; O'Brien & Naber, 1992; Poudevigne & O'Connor, 2006), and increased fatigue (Cramp & Bray, 2009). These physical changes may cause pain or may make it difficult for a woman to engage in certain types of activity, possibly affecting her attitude and willingness to engage in these activities. Physical changes can add pressure to the joints which can put women at risk for injury by increasing the susceptibility of a fall. This increased risk for injury may also play a role in shaping women's attitudes regarding activity and subsequently their activity behaviours during pregnancy. Acting concomitantly with these physical changes are other psychological factors such as health concerns, social support (Besser, Priel, & Wiznitzer, 2002; Hoffman & Hatch, 1996; Thornton et al., 2006), and the transition to motherhood (Devin, Bove, & Olson, 2000) which have also been found to shape women's attitudes towards physical activity, and subsequently their activity levels during pregnancy.

Research has suggested that as a result of these physical and psychological demands, some women decrease their levels of physical activity or stop exercising completely during pregnancy (Artal & O'Toole, 2003; Clapp, 2000; Fell, Joseph, Armson, & Dodds, 2009; Mottola & Campbell, 2003; Symons Downs & Hausenblas, 2004). Physical activity practices adopted

during pregnancy can have a lasting impact as expecting mothers may reduce their physical activity levels long term which may lead to reduced physical and psychological well-being (Symons Downs & Hausenblas, 2004).

Due to the possible long-term detriments of reducing one's physical activity behaviours, the guidelines for physical activity during pregnancy (as reviewed above) have continuously been revised in order to help women engage in safe and beneficial behaviours throughout the course of pregnancy. Despite these ongoing revisions, the benefits of exercise during pregnancy continue to be stressed such as improved fitness, reduced complaints of aches and pains, management of gestational diabetes, decreased risk of post-partum depression, increased tolerance of labour, less maternal weight gain, improved body image, and improved feelings of psychological well-being (Artal & O'Toole, 2003; Clapp, 2000). Given these stated benefits, researchers have continued to argue that the reported decrease in physical activity during pregnancy is detrimental to women's health and that we must find ways to motivate women to engage in activity during this time period. Even though the literature promotes physical activity and suggests that benefits can be reaped from physical activity engagement during pregnancy, the multiple risks and the subsequent need for caution also stated within the guidelines cannot be ignored. Expecting women need to weigh the benefits and risks of activity in order to make informed decisions regarding their choice of activity as well as the intensity and persistence of these behaviours. Interestingly, this is expected to be done all while dealing with the physical and psychological changes brought on by pregnancy.

The guidelines offered are ambiguous and given that pregnancy is experienced differently by each individual, may not be applicable to certain women. After an exhaustive search of the literature, to the best of my knowledge, I have come across no research that has been published

regarding women's perceptions and embodiment of these guidelines. It is possible that some women may find the guidelines confusing, leaving them with the responsibility to negotiate what is deemed safe or unsafe practices. The perception of safe practices will be affected by an individual's background and previous experiences and will further shape the expecting mother's attitudes towards activity during pregnancy, and subsequently affect one's activity behaviours. As a result, research that examines women's lived experiences with physical activity during pregnancy is needed as this will shed light on how women potentially perceive and employ (or disregard) these guidelines, and whether this could potentially impact their physical and psychological well-being not only during pregnancy, but long term.

1.6 Justification and Relevance

In order to build on and update the guidelines for exercise during pregnancy, a growing body of research has examined the physiological benefits and detriments of activity for women and fetus. As a result, psychological and sociological researchers have argued that studies centering on women, pregnancy and physical activity have emphasized the physiological benefits and detriments of exercise for women and fetus. Thus, they have built on this research by investigating some psychosocial constructs that may impact exercise attitudes and behaviours during this time such as self-efficacy beliefs (Cramp & Bray, 2009; Poudevigne & O'Connor, 2006), attitudes (Symons Downs & Hausenblas, 2004), cultural discourses (Dworkin & Wachs, 2004; Jette, 2006; Sha & Kirkham, 2009), perceived control, subjective norms (Hausenblas, Symons Downs, Giacobbi, Tuccitto, & Cook, 2008; Symons Downs & Hausenblas, 2004), and social support (Besser et al., 2002; Hoffman & Hatch, 1996; Thornton et al., 2006). These theoretical models and empirical findings will be introduced below in order to showcase the

psychological and sociological research already conducted focusing on exercise and pregnancy, and to identify the gaps in the research and the need to further investigate the factors affecting motivation for physical activity throughout the course of pregnancy.

1.6.1 Self-efficacy Beliefs

Bandura's (1997) Social Cognitive Theory has been applied as a framework to understand and explain the physical, social, and cultural factors impacting exercise behaviours during pregnancy. Specifically, researchers have focused on the sub theory of self-efficacy beliefs (situation specific self-confidence) and their influence on physical activity attitudes and behaviours during pregnancy (Cramp & Bray, 2009; Hinton & Olson, 2001; Pereira et al., 2007; Poudevigne & O'Connor, 2006; Ussher, Ah-Yoon, West, & Straus, 2007). Findings from this research suggest that physical activity engagement is often positively affected by perceived social support as well as socioeconomic status, whereas fatigue, nausea, discomfort due to physiological changes, and poor weather often act as barriers to activity. All of these barriers and facilitators have been suggested to affect exercise self-efficacy beliefs during pregnancy, subsequently influencing the activities chosen, the intensity at which they are practiced, and the persistence of such behaviours (Symons Downs & Hausenblas, 2004). The conceptual nature of the Social Cognitive Theory is shown in Figure 1.1.

Figure 1.1 Social Cognitive Theory

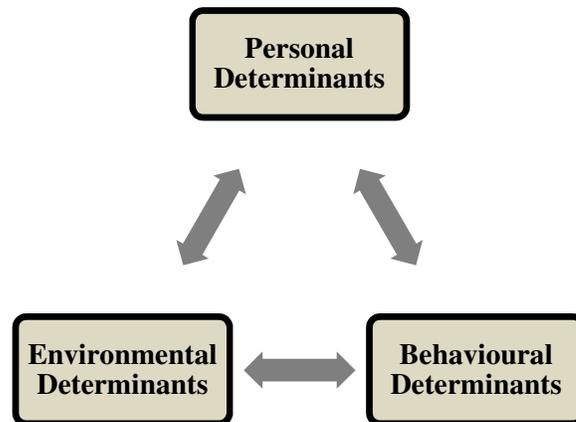


Figure 1.1 The interaction between personal, behavioural, and environmental determinants impacts self-efficacy beliefs. Adapted from The Social Cognitive Theory (Bandura, 1997).

Despite strong evidence that personal, environmental, and behavioural factors play an important role in women's exercise behaviours, most research using the Social Cognitive Theory as a framework has focused on the physical as well as social determinants of exercise self-efficacy beliefs. No research to date using the Social Cognitive Theory as a framework has examined the perceived social support of individuals other than significant others and family members (i.e. such as fitness trainers and health care professionals) and their perceived impact on women's self-efficacy beliefs. Furthermore, very little research using this framework has examined the impact of cultural factors such as ethnicity as well as the impact of mainstream media. Therefore, research examining women's experiences with physical activity during pregnancy is needed to build on these findings in order to assist in understanding additional factors possibly interacting with the previous findings, and affecting exercise attitudes and behaviours throughout the course of pregnancy.

1.6.2 Theory of Planned Behaviour

The Theory of Planned Behaviour (Ajzen, 1985) has also been adopted as a framework to explain exercise behaviours during pregnancy. Studies have focused on how women's attitudes, perceived behavioural control, and subjective norms (societal norms) influence behavioural intentions and consequently effect the choice, intensity, and persistence of exercise behaviours during pregnancy. Findings have suggested that support from others, physical limitations, fatigue, and time constraints have an impact on activity levels. Furthermore, the intention to engage in activity has also been found to have an effect on motivation for such activities (Symons Downs & Hausenblas, 2004). Despite these findings, research using the Theory of Planned Behaviour as a framework to explain exercise attitudes and behaviours during pregnancy has gathered findings using quantitative methods. No research to date has utilized qualitative methods of inquiry to investigate women's experiences and perceptions regarding attitudes, behavioural control, subjective norms, and behavioural intentions.

1.6.3 Empirical Research

Empirical research has suggested that social support from friends and family (Besser, Priel, & Wiznitzer, 2002; Hoffman & Hatch, 1996; Thornton et al., 2006), socioeconomic status, educational attainment, and culture (Evenson, Moos, Carrier, & Siega-Riz, 2009; Fell, Joseph, Armson, & Dobbs, 2009) have an impact on physical activity engagement throughout the course of pregnancy. Finally, the popular media has been suggested to influence women's beliefs regarding societal norms, and subsequently has affected exercise attitudes, beliefs, and intentions (Clark & Gross, 2004; Dworkin & Wachs, 2004; Johnston & Swanson, 2003; Sha & Kirkham,

2009). These empirical studies have shed light on the multiple factors impacting the choice, intensity, and persistence of exercise behaviours during pregnancy. No research to date has asked women about their experiences with activity throughout the course of pregnancy; therefore, an investigation is needed in order to see if these factors are found in women's stories, and not only if, but how and why they impact motivation for physical activity.

1.6.4 Identifying Gaps

The focus of this body of theoretical and atheoretical research has been on motivation for physical activity during pregnancy and post-partum. Most of this research has been conducted retrospectively during the post-partum period or at one specific time point during pregnancy, and has utilized quantitative methods of inquiry (Hausenblas, Symons Downs, Giacobbi, Tuccitto, & Cook, 2008). Although these quantitative studies have provided researchers with important information regarding motivation for exercise during pregnancy, the fact that they have focused on specific theoretical and empirical constructs have limited their findings. Therefore, qualitative inquiry focused on asking women about their experiences with exercise during pregnancy is warranted. Insight is needed regarding the psychosocial factors affecting motivation for exercise through the course of pregnancy to investigate whether women's experiences are consistent with the theoretical and atheoretical factors offered to explain exercise behaviours during this time. Findings from qualitative inquiry looking at women's experiences will build on this previous research which could help further inform theory. Themes may also emerge within the participants' accounts that have not been studied in previous research due to theoretical constraints.

1.7 Purpose and Research Questions

The purpose of this research was to examine the experiences of previously active women with physical activity throughout the course of pregnancy. Specifically, the factors affecting motivation for exercise during this time were examined. The general research questions were: 1) How do women experience physical activity as pregnancy progresses?, and 2) What factors affect the choice, intensity, and persistence of exercise behaviours through the course of pregnancy?

A group of nine physically active expecting women in the Greater Vancouver, lower-mainland area were asked about their experiences with physical activity at two time points during pregnancy (early second trimester and late third trimester). Through semi-structured interviews, questions were asked surrounding the themes of physical activity attitudes and behaviours pre-pregnancy and during the course of pregnancy, physical activity related expectations, perceived social support for activity, and cultural norms and expectations. Probes were further utilized to shed light on additional factors affecting physical activity choice, intensity, and persistence.

Findings from the conducted research will contribute to the sport, exercise, and health psychology literature pertaining to motivation and exercise practices during pregnancy. Insight concerning women's experiences during pregnancy will enhance understanding of the perceived factors affecting the choice, intensity, and persistence of physical activity during pregnancy. It will also provide further knowledge into whether additional factors (absent from the current literature) may influence motivation for exercise during this time. Furthermore, as low levels of activity can lead to decreased levels of well-being for women long-term, information about what motivates women to be physically active during pregnancy could inform physical activity

interventions concerned with improving the physical and mental health and well-being of women who are expecting. For example, the findings from the research could inform subsequent interventions looking to improve women's motivation to exercise during pregnancy.

Chapter 2: Literature review

A challenge in the motivation for ‘exercise during pregnancy’ literature is that research has been both theoretical and atheoretical. Some sport and exercise psychology researchers have been interested in examining the utility of particular motivation models, whereas others have investigated specific psychosocial variables. This section will start with a brief examination of motivation, followed by a review of the empirical research examining the psychosocial construct of social support for exercise. Research using the frameworks of Self-Efficacy Theory and the Theory of Planned Behaviour will then be reviewed as they have been utilized by researchers to study motivation for exercise during pregnancy and post-partum. This will be followed by a review of the research focusing on environmental and cultural factors affecting motivation for physical activity during pregnancy. Finally, the key limitations of the extant research, as well as the gaps in the current literature will be discussed.

2.1 Motivation

Motivation in sport and exercise has been defined by Vallerand and Thill (1993) as “the internal and/or external forces that produce the initiation (direction), intensity, and persistence of behaviour” (p.18; translated from French). Initiation refers to the types of physical activities chosen, intensity refers to how much effort is put into these activities, and persistence refers to the maintenance of activity over a continuous period of time. Individuals are motivated to exercise for particular reasons, which can be classified on a continuum ranging from amotivation (total absence of motivation), extrinsic motivation (engaging in activities for reasons of guilt or rewards), and intrinsic motivation (engagement in activity for pleasure and satisfaction). A large

body of research has consistently found that intrinsic forms of motivation are associated with improved physical activity outcomes (Brickell & Chatzisarantis, 2007; Deci & Ryan, 2008). A body of research within sport, exercise, and health contexts has also examined why people become, and stay involved in sport and exercise activities; namely, participant motivation. Findings have suggested that individuals engage in physical activity for reasons such as skill development, pleasure, affiliation, and fitness (health/appearance) (Hagger & Chatzisarantis, 2007; Ryan & Deci, 2007). Many of the theoretical models of motivation incorporate these factors in their theoretical prediction of exercise (Mack, Sabiston, McDonough, Wilson, & Paskevich, 2011).

When asking expecting women about their experiences with exercise during pregnancy, it is imperative to consider motivation for physical activity as the physiological and psychosocial changes occurring during pregnancy may have an effect on the choice, intensity, and persistence of engagement in activity during this time. It is important to examine the factors that motivate women to engage in physical activity during pregnancy since the activity behaviours adopted during this time can establish themselves in one's regimen post pregnancy, and subsequently have long term physiological and psychological effects (Cramp & Bray, 2009; Hausenblas et al., 2008).

When investigating the factors affecting motivation for physical activity during pregnancy, one should consider whether the choices of activities change throughout the course of pregnancy, if the physical activity behaviours persist through the course of pregnancy, and if there is change in the intensity and frequency of activity during this time. As the choice, intensity, and persistence of exercise behaviours may be in flux as pregnancy progresses,

expectant mothers' motivation for physical activity may change throughout the course of pregnancy.

2.2 Social Support

Evidence suggests that individuals need to interact with others, and that stable and positive relationships can enhance motivation for behaviours in certain settings (Baumeister & Leary, 1995; King, Stokols, Talen, Brassington, & Killingsworth, 2002). When studied in health contexts, social support has been found to be an important determinant of the choice, intensity, and persistence of physical activity behaviours, therefore fostering motivation for exercise (Carron, Hausenblas, & Mack, 1996; Resnick, Orwig, Magaziner, & Wynne, 2002).

In the literature pertaining to exercise during pregnancy, social support has been studied empirically as an independent psychosocial construct. A positive link between perceived social support and exercise behaviours during pregnancy as well as post-partum has been found (Besser et al., 2002; Hoffman & Hatcht, 1996; Thornton et al., 2006). In particular, the perceived support for physical activity from family members and partners (Thornton et al., 2006) has helped expecting mothers cope with the added stressors of pregnancy (Besser et al., 2002; Hoffman & Hatcht, 1996).

Hoffman and Hatcht (1996) reviewed the quantitative literature focusing on stress, social support, and pregnancy outcome and found consistent evidence that social support (from a partner and/or family members) was associated with improved fetal growth regardless of women's stress levels. These results extended the findings of previous observational studies reporting consistent evidence that social support had significant effects on fetal growth. These

findings were important to consider when conducting the proposed study because the women being interviewed shed light on the support they received from others as well as if and how this impacted their exercise beliefs and behaviours.

In addition, Besser and colleagues (2002) studied the role of social support and its influence on women's ability to cope with the stressors associated with pregnancy. Findings suggested that social support networks were especially important in high risk pregnancies. These networks assisted expecting women in coping with the physiological symptoms and psychological changes occurring during this time period, such as complications associated with pregnancy and depressive symptoms. These findings are important to consider in the present research as some women may experience a high risk pregnancy, which may affect their experiences with activity throughout the course of gestation.

Findings have also suggested that perceived social support in ethnic-minority women influences their health related beliefs and behaviours (Balcazar, Krull, & Peterson, 2001; Evenson, Samiento, Macon, Tawney, & Ammerman, 2002; Hovell et al., 1991). Specifically, social relationships have been found to positively impact health in Latin culture since the extended family has traditionally played an important role in one's daily life (Keefe, Padilla, & Carlos, 1979).

Thornton and colleagues (2006) conducted semi-structured interviews and aimed to understand the experiences of Latina women by studying their perspectives regarding perceived social support for physical activity during pregnancy. Their results suggested that some women felt isolated during pregnancy and that lack of support from families and friends acted as a barrier to physical activity engagement. These findings are important to consider when asking women about their experiences with physical activity during pregnancy, as support from others

(such as family members, friends) may have an effect on women's exercise beliefs and behaviours. Furthermore, cultural norms and expectations are important to consider when asking women about social support for exercise as they can play an important role in the factors affecting social support for physical activity and in turn, motivation for physical activity throughout the course of pregnancy.

Personal factors affecting social support for physical activity during pregnancy must also be considered as they may impact the choice, persistence, and intensity of exercise through the course of pregnancy. Specifically, women's relationship status is important to consider when examining the role of social support, as previous studies (Besser et al., 2002; Hoffman & Hatch, 1996) have suggested that women often perceive the support from their significant other to impact their exercise beliefs and behaviours and their experience with stress. Therefore, women in partnerships may not have the same experiences as single women.

The extant research has looked at the impact of perceived social support on health related behaviours. These studies have primarily focused on support from family members, friends, and partners. Although family, friends, and partners are often present and influential, women who are expecting also interact with other individuals such as health care professionals and exercise fitness instructors. These individuals can provide support for, or advise against physical activity, which in turn could influence women's health related attitudes and behaviours. Therefore, there exists a gap in this body of literature, and research is needed that investigates women's experiences with health care professionals and exercise instructors during pregnancy. The current study will address this gap by asking women questions about their interactions with these individuals, and their perceptions of their support and influence on their health related behaviours. Women's perceptions of social support for physical activity may provide further

understanding of the factors impacting the choice, intensity, and persistence of physical activity behaviours during pregnancy.

2.3 Self-Efficacy Theory

2.3.1 Physical Factors

Not only have empirical studies been conducted examining psychosocial variables affecting exercise during pregnancy (Besser et al., 2002; Hoffman & Hatch, 1996; Thornton et al., 2006), but theoretical models such as the Self-efficacy Theory (Bandura, 1997) and the Theory of Planned Behaviour (Ajzen, 1985) have also been utilized to explain exercise behaviours and are important to consider when aiming to understand experiences with physical activity. Although these theories were not developed specifically for exercise, they include many factors such as competence, perceived control, attitudes, and expectancies that might be important for exercise motivation.

Bandura's (1997) Social Cognitive Theory has been used as a framework to explain the factors affecting and determining behaviour and has been a popular theory used to explain and predict exercise behaviour (Cramp & Bray, 2009; Hinton & Olson, 2001; Poudevigne & O'Connor, 2006). The theory stipulates that a combination of personal factors (i.e. beliefs, values, expectations), behavioural factors (i.e. choice, effort and persistence of a behaviour), and environmental factors (i.e. opportunities, pressures from others, motivational climate, socioeconomic status, cultural discourse) affect an individual's behaviours (Bandura, 1997). Moreover, how individuals perceive their behaviours has an impact on personal and

environmental factors, subsequently shaping following behaviours (Symons Downs & Hausenblas, 2004).

Self-efficacy Theory is one of the main constructs of the Social Cognitive Theory and refers to the beliefs one holds of his or her capabilities to execute a certain behaviour given the situation (situation specific self-confidence) (Bandura, 1997). In order to change an individual's self-efficacy beliefs, four main personal and environmental factors must be considered: mastery experiences (past experiences with the skill), vicarious experiences (the ability to model the behaviour from others), social persuasion (reinforcement from others), and physiological and affective states. Self-efficacy Theory has been used in intervention settings to increase levels of physical activity amongst wide-ranging populations (i.e. older adults, adolescents, pregnant and post-partum women). Furthermore, it has been used to study exercise attitudes and behaviours during pregnancy and post-partum as self-efficacy beliefs have been shown to affect motivation for physical activity during these time periods (Cramp & Bray, 2009; Hinton & Olson, 2001; Mottola & Campbell, 2003; Pereira et al., 2007; Poudevigne & O'Connor, 2006; Ussher et al., 2007).

Hinton and Olson (2001) examined the relationship between self-efficacy and physical activity in 622 adult women from early pregnancy to one year post-partum. Through surveys, participants were asked questions regarding exercise self-efficacy beliefs, diet, and weight control during pregnancy, in addition to questions regarding physical activity frequency. Findings suggested that exercise self-efficacy, BMI, and age were predictors of physical activity and accounted for 16.5% of the variance within the model [Adjusted $R^2 = 16.5$]. These findings suggest that not only is self-efficacy a predictor of one's physical activity behaviours, but exercise self-efficacy is also an important predictor of exercise throughout the course of

pregnancy. Although socio-demographic variables were controlled for in this study, they could affect the relationship between self-efficacy and physical activity. Therefore, factors such as income, educational attainment, geographical location, and culture must be taken into consideration when discussing self-efficacy and physical activity.

Researchers examining barriers and facilitators to exercise during pregnancy have also suggested that they may affect exercise self-efficacy beliefs. For instance, Poudevigne and O'Connor (2006) reviewed the literature pertaining to physical activity behaviours during pregnancy and their relationship to self-efficacy. In the sample of retrospective studies included, levels of leisure time physical activity decreased during pregnancy. Furthermore, as pregnancy progressed, exercise choices changed towards less vigorous and safer activities (i.e., from bicycling to walking and swimming), with an associated decline in exercise duration and intensity. The activities most frequently reported during the first and second trimester of pregnancy consisted of jogging, aerobics, weight lifting, walking, swimming, and gardening. Findings suggested that physiological and affective states such as fatigue, nausea, and lack of social support for exercise acted as barriers affecting women's self-efficacy beliefs and, in turn, exercise behaviours.

Cramp and Bray (2009) investigated the perceived barriers to, and psychosocial determinants of leisure time physical activity at four time points during pregnancy (week 18, 24, 30, 36). Specifically, they examined women's self-efficacy to overcome the barriers affecting their level of activity (barrier self-efficacy). General levels of exercise self-efficacy were also measured using questionnaires. Findings suggested that exercise self-efficacy and barrier self-efficacy were related and both independently predicted physical activity behaviours (explaining 26% of the variance). Women felt that the judgments made about performing a certain

behaviour were informed by the ability to cope with these barriers. At each time point, on average 3.5 barriers to leisure time physical activity were identified. The most commonly listed barriers were lack of energy, time, and physical limitations such as a sore back, joint pain, swelling, and leg cramps. These physical limitations became more common as pregnancy progressed.

Ussher and colleagues (2007) assessed exercise self-efficacy, exercise beliefs and intentions, perceived social support for exercise as well as perceived barriers to exercise amongst pregnant women who smoked. Findings from telephone surveys indicated that most women intended to exercise during pregnancy as they thought it was important for their health. Despite these intentions, women reported receiving little social support for exercise from their family and friends, and reported low self-confidence in their ability to exercise during pregnancy, especially when feeling stressed. Tiredness, lack of time, physical discomfort, and illness were also reported as primary barriers to exercise during pregnancy, which reduced women's exercise self-efficacy.

Pereira and colleagues (2007) examined environmental, social, and individual factors affecting change in physical activity during pregnancy and post-partum. The authors surveyed 91 women and found that exercise decreased on average from 9.6 to 6.9 hours per week during pregnancy due to physical barriers such as fatigue, pain, and swelling. Women also reported a drop in exercise intensity as pregnancy progressed and post-partum. Furthermore, two-thirds of the participants indicated lack of time and child-care as the most significant barriers to physical activity six months after delivery. These women were 1.7 times more likely to be less active one year post-partum than women who did not indicate these as barriers. The extent to which women felt they could overcome the barriers to exercise diminished during pregnancy and post-

partum and thus, exercise self-efficacy declined, resulting in reduced levels of physical activity during this time.

Mottola and Campbell (2003) examined activity patterns during pregnancy and aimed to identify the factors influencing exercise behaviours during this time. Findings suggested that all types of activity decreased during the first and second trimester of pregnancy except for walking, which increased. By the third trimester, 29% of women who reported usually engaging in brisk walking as a form of exercise no longer engaged in any activity. In contrast, women who engaged in other forms of exercise prior to pregnancy still exercised but changed the type of exercise they chose. Barriers to exercise during pregnancy were identified (e.g. having children and a higher body mass index). Having no children, not smoking, and having some form of postsecondary education were all positively associated with structured physical activity engagement. As pregnancy progressed, barrier self-efficacy (the extent to which women felt they could overcome the barriers to exercise) decreased due to a change in the choice of activities. However, physical activity levels decreased during this time.

These studies have suggested that not only do the barriers to physical activity change throughout the course of pregnancy, but that exercise self-efficacy can change because of how women feel about their ability to overcome these barriers (Cramp & Bray, 2009; Mottola & Campbell, 2003; Poudevigne & O'Connor, 2006). Furthermore, this body of research has suggested that child care, lack of time, tiredness, physical discomfort, nausea, stress, lack of social support, as well as socioeconomic status often act as barriers to exercise (Cramp & Bray, 2009; Hinton & Olson, 2001; Mottola & Campbell, 2003; Pereira et al., 2006; Poudevigne & O'Connor, 2006; Ussher et al., 2007). As a result, it was important to ask participants about the perceived barriers to physical activity when conducting interviews as these women may have

experienced similar and/or different personal and/or environmental barriers which may have had an effect on their self-efficacy for exercise, motivation for physical activity, and specifically the choice, intensity, and persistence of these behaviours through the course of pregnancy.

2.3.2 Personal and Environmental Factors

Not only are exercise barriers and self-efficacy beliefs important, but personal (e.g. values, beliefs, expectations etc.) and environmental factors (e.g. pressure from others, opportunities, cultural discourses, motivational climate) could potentially shape women's experiences with physical activity. Therefore, it is important to consider studies conducted examining factors such as pre-pregnancy exercise levels as well as cultural beliefs and discourses in order to gain a better understanding of the personal and environmental factors affecting exercise attitudes and behaviours during pregnancy.

Fell and colleagues (2009) recently compared pre-pregnancy physical activity levels with early pregnancy physical activity levels. Findings suggested that sport and exercise, household chores, and 'active living' decreased as pregnancy progressed. Participants who had less education, were younger, and had a higher level of body fat engaged in less physical activity during pregnancy, with pre-pregnancy activity levels acting as the strongest predictor of change in activity behaviours as pregnancy progressed.

For this thesis, it was pertinent to ask women about their levels of physical activity pre-pregnancy, as it provided insight into the factors affecting their experiences with activity during pregnancy and furthermore alluded to changes (if any) in exercise behaviours during this time period. It was also important to ask women about the personal and environmental factors affecting physical activity pre-pregnancy such as culture, social support, socioeconomic status,

and educational attainment as this provided further insight regarding the factors affecting the choice, intensity, and effort of exercise behaviours throughout the course of pregnancy.

Some qualitative inquiries have also been conducted to gain insight regarding women's experiences with the barriers to activity throughout the course of pregnancy. Evenson and colleagues (2009) conducted interviews and focus groups with a sample of pregnant women and findings suggested that intrapersonal barriers to exercise were most often physical symptoms such as tiredness and/or lack of time and motivation. Other intrapersonal barriers included lack of enjoyment, difficulty finding child-care, and lack of knowledge pertaining to exercise during pregnancy. Some women discussed the importance of listening to their bodies, while others reported being scared to exercise as they did not want to push themselves for fear that the baby might be harmed or premature labour might be induced. The most prominent interpersonal barrier discussed was the lack of social support where women discussed the need to be motivated by another person to remain active. These findings suggest that personal factors affected women's perceptions of the barriers to exercise during pregnancy. How women perceived their ability to overcome the barriers to exercise diminished, leading to lower levels of exercise self-efficacy.

Kieffer, Willis, Arellano, and Guzman (2002) asked pregnant and post-partum Latina women to discuss physical activity related beliefs, attitudes and practices, as well as the factors affecting participation in physical activity during this time period. Most women reported engaging in walking as a form of physical activity, as this was seen as a "socially acceptable way to obtain the beneficial aspects of exercise while fulfilling maternal responsibilities such as shopping or accompanying children to school" (p. 548). Numerous other barriers to exercise were identified such as being tired, physical pain, embarrassment about appearance, weather,

lack of exercise facilities, and knowledge pertaining to safe practices during pregnancy. Furthermore, social isolation was perceived as a major barrier to physical activity. Many women felt that social support (from husbands, partners, family and friends) was important. Some women reported that their husbands provided them with general encouragement, while some women's husbands would accompany them for a walk, to the gym, or to parks. Women also explained that family members would often act as companions for exercise. As described, personal and environmental factors play an important role in shaping women's exercise beliefs and behaviours during pregnancy.

Other personal factors potentially playing a role in shaping pregnant women's experiences with exercise are the occurrence of nausea and morning sickness which have often been discussed in the field of obstetric, midwifery, and nursing (Dilorio, 1985; Jarnfelt-Samsioe, Samsioe, & Velinder, 1983; Scott, Disaia, Hammon, & Spellacy, 1990; Varney, 1987). O'Brien (1990) asked 76 expecting women about the impact of nausea and vomiting on their everyday lives. Findings showed that 83% did experience vomiting and nausea during pregnancy, and 28% had to change their daily routines and activities because of their symptoms. Further research by O'Brien and Naber (1992) examined the changes in social, familial, and occupational settings resulting from the nausea and vomiting experienced by pregnant women. Of the 147 women in the sample, 82.8% reported that nausea and vomiting affected their ability to perform daily tasks and activities. Furthermore, 32.4% of women reported that their symptoms were severe leaving them unable to perform their household activities, needing help from others, being forced to reduce their social commitments, and having to rest more than usual.

Nausea and vomiting have been identified as factors that impact women's daily activities during pregnancy, including exercise, particularly in the first trimester (O'Brien, 1990; O'Brien

& Naber, 1992), but no studies to date have asked women about their experiences with exercise and the impact of nausea and vomiting on these behaviours. Therefore, when women talked about these symptoms during interviews, probes regarding how nausea and vomiting affected activity levels were utilized to gain further insight into women's experiences with nausea and morning sickness throughout the course of pregnancy.

Researchers have also examined women's experiences with specific health related concerns, such as weight gain and lifestyle practices during pregnancy and the post-partum period. This body of research has suggested that body related attitudes and beliefs may have an impact on women's activity values and behaviours throughout the course of pregnancy and post-partum. Devin and colleagues (2000) interviewed 36 women throughout pregnancy and post-partum to shed light on their experiences with weight changes, how they coped with these changes, and their attitudes regarding pregnancy and motherhood. The life course perspective was used as a framework for this research where the purpose was to map out women's experiences with weight changes during pregnancy and post-partum to see how these experiences impacted body image, the transition to motherhood, and diet and exercise. Four different types of trajectories emerged from the data. 'The relaxed maintenance' trajectory emerged in women who had been satisfied with their weight throughout their life, had remained the same during pregnancy, and kept up with physical activity during and post pregnancy. Women who followed 'the exercise trajectory' gave priority to exercise and fitness before, during, and after pregnancy. 'The delayed exercisers' had not yet gone back to their pre-pregnancy physical activity regimens post-partum. Finally, women following 'the determined trajectory' were active and focused on losing weight post-partum.

Another study by Earle (2003) examined women's experiences of pregnancy and body image by conducting 40 interviews with 19 pregnant women. Specifically, embodiment of body size, shape, and weight during pregnancy were examined. Findings suggested that women were concerned with their body when they began looking pregnant, when changes to their bodies occurred, and when they thought about how they would return to their pre-pregnancy body post-partum. The author finished by arguing that "given the importance of aesthetics, body image, weight, and fatness within contemporary Western societies, and the considerable volume of literature devoted to the discussion of this subject (Bartky, 1990; Bordo, 1993; Grimshaw, 1999; Lupton, 1996; Wolf, 1990), it seems odd that so very little attention has been paid to this in relation to pregnancy and women's experiences of fatness within pregnancy" (Earl, 2003, p. 247).

The findings from these studies are important to consider when looking at women's experiences with exercise during pregnancy, as body image, and the transition to motherhood may be affecting the choice, intensity, and persistence of exercise behaviours. Additional research is needed in these areas to better understand how women experience body changes and transitions, and how they, in turn, contribute to health enhancing or debilitating behaviours. The result of further investigation of women's experiences will increase our understanding of the continuity and/or change in health related attitudes and behaviours throughout pregnancy.

2.3.3 Information Sources

Women often seek information regarding exercise during pregnancy through media sources such as commercial books and magazines (Clark & Gross, 2004). Therefore, contextual components such as cultural discourses present within media sources are important to consider

when asking women about their experiences with exercise during pregnancy. These discourses may assist in shaping women's beliefs surrounding physical activity during pregnancy, potentially affecting their self-efficacy for exercise and exercise behaviours during this time.

Magazines often become an important form of media for women to gain information pertaining to pregnancy and physical activity (Dworkin & Wachs, 2004; Jette, 2006; Johnston & Swanson, 2003; Sha & Kirkham, 2009). A body of research has examined the ways in which pregnancy is depicted within the multiple media messages present in magazine articles. Findings suggest that magazines tell pregnant women that they are capable of staying fit and should be fit during pregnancy. The messages "arise from and represent the cultures within which they circulate, influencing normative standards, expectations, and behaviour" by offering guidelines and tips related to fitness and physical activity during pregnancy (Sha & Kirkham, 2009, p. 359). Exposure to these media messages potentially shapes women's beliefs regarding physical activity during pregnancy, and in turn affecting their exercise self-efficacy and exercise behaviours.

Dworkin and Wachs (2004) examined the fitness discourse present in *Shape Fit Pregnancy* magazine; a magazine focused on fitness designed for pregnant and post-partum women. This study analyzed the cultural discourses and the underlying assumptions within magazine articles focusing on fitness and pregnancy. Findings suggested that these articles promoted fitness as a requirement for pregnancy and delivery without incident. More specifically, fitness pursuits such as cardiovascular work, yoga, light weight lifting and certain upper and lower body motions were deemed suitable and essential to minimize labour pain and keep the body in shape throughout pregnancy and post labour. Fathers were mentioned in only 5% of the articles and even though 62% of the readership of *Shape Fit Pregnancy* had a job,

going back to work after labour was never mentioned. Moreover, single and lesbian mothers were never mentioned. Employing a critical feminist perspective, the authors argued that the messages present within the magazine “privilege[d] whiteness, heterosexuality, stay-at-home motherhood, continual baby and self-care, and [an] indoor third shift of body work” suggesting that women not only should take care of their babies and family, but should also continuously work on their body’s appearance (p.621).

Jette (2006) also offered an analysis of a women’s health magazine column aimed at pregnant and post-partum women exercisers. Exercise discourses within this magazine column were traced and analyzed based on Foucault’s notion that “the body is produced by and exists in discourse, becoming a central site of power relations” (p. 333). Jette (2006) analyzed *Oxygen* magazine’s ‘Fit for Two’ columns applying Foucault’s notion of the ‘Panopticon’ where “the pregnant body is disciplined by discourses and practices suggesting how a woman can have a ‘normal’ pregnancy by making the appropriate lifestyle choices” (p. 334). The author provided evidence of a shift in exercise discourses from risk management to privatization where individuals are forced to monitor their own health. A discussion of the promotion of exercise during pregnancy was offered; in the columns, pregnant women were told to be fit but were also told to avoid overexertion. Lastly, the author discussed tensions in the magazine’s discourse which on the one hand depicted exercise as a risky behaviour during pregnancy but also underscoring the dangers associated with lack of exercise during pregnancy. *Oxygen* magazine provided an interesting medium by which to collect data since the magazine’s target audience is of the more ‘hard-core’ fitness population, and its readership is predominantly middle-class, white and heterosexual.

Using discourse analysis, Sha and Kirkham (2009) investigated how pregnancy was represented in women's magazines in Australia. Findings suggested that pregnant women's bodies were to be exposed conservatively. Specifically, expecting women were instructed to dress a certain way to avoid sexualizing their bodies as this was deemed unacceptable. Pregnant women were often featured within magazines as either 'good' (women who dressed conservatively) or 'bad' (women who dressed promiscuously), where celebrities were often used to portray the 'good' or 'bad' image. For example, Princess Mary Donaldson was often described as a good example for women to follow given her conservative and 'proper' attire. Conversely, Britney Spears was often represented as a disaster due to her "dangerous dress sense" and "marital instability" (p. 364). In the magazine articles, pregnant women were also depicted as needing a partner who would support them through the course of pregnancy and post-partum as pregnancy was exemplified as a woman's fate, assuring her a better future. Women were responsible for their own bodies and health during pregnancy, and would be critiqued and ridiculed if they did not adhere to the standards denoted within the magazines, suggesting that a woman should act within a certain moral code by disciplining her body and her environment.

When considering these findings (Dworkin & Wachs, 2004; Jette, 2006; Sha & Kirkham, 2009), one could argue that women who do not read these magazines could be subject to different discourses surrounding exercise during pregnancy. As a result, it becomes important to ask women about their experiences with media pertaining to pregnancy and exercise as these messages may play a role in shaping their beliefs. Cultural differences are also important to consider, as the images within these magazines are of predominantly white, heterosexual, middle class women. As argued by Earle (2003), the publication of various naked pregnant images of

celebrities such as Demi Moore (on the cover of *Vanity Fair* in 1991), Victoria Beckham (a former pop singer in the group “The Spice Girls”), as well as Madonna have become mainstream, and give the perception that all women should ‘aspire’ to be like these celebrities. If women choose to resist these expectations, they are seen as ‘asexual bodies’ during pregnancy. How women respond to these images becomes important, as their perceptions may impact their health related beliefs and behaviours, further shaping their experiences with physical activity during pregnancy.

2.3.4 Self-Efficacy Theory: Summary

The studies reviewed above focusing on the barriers affecting motivation for physical activity during pregnancy all allude to the fact that personal, environmental, and behavioural factors are important to consider when asking women about their experiences as they may positively or negatively affect exercise self-efficacy and in turn exercise behaviours.

Self-efficacy theory has been an important framework utilized to explain women’s exercise behaviours by looking at personal, behavioural, and environmental factors leading to exercise barriers during pregnancy. Other researchers have used the Theory of Planned Behaviour as a framework to look at exercise intentions during pregnancy and how they affect the choice, persistence, and intensity of exercise during pregnancy.

Factors such as social support, physical changes/limitations, fatigue, nausea and vomiting, weather, time constraints, socioeconomic status, and culture have been suggested to impact women’s exercise beliefs and attitudes, impacting self-efficacy for physical activity, and subsequently affecting the choice, intensity, and persistence of exercise behaviours throughout

the course of pregnancy. These factors were all important to take into consideration when asking women about their experiences in order to see if the participants talked about these barriers and enablers, and whether they believed they affected their self-efficacy and motivation for exercise throughout the course of pregnancy. Furthermore, the analysis of women's discourses may help us discover additional factors possibly affecting self-efficacy for physical activity and therefore motivation for exercise throughout the course of pregnancy.

2.4 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is a “social-cognitive framework that suggests a person's belief about a behaviour influences his or her way of thinking [...] motivation to comply with the wishes [...] of others, [...], and evaluation of how easy or difficult it will be to adopt a behaviour” (Symons Downs & Hausenblas, 2004, p. 139). The theory suggests that three factors (attitude, perceived behavioural control, and subjective norms) affect the intention to engage in certain behaviours. Attitude refers to one's evaluation (negative or positive) of engaging in a behaviour. Perceived behavioural control refers to “the extent to which behaviour is volitional and is thought to indirectly affect behaviour through intention as well as being a direct influence” (Mack et al., 2011, p. 86). Lastly, subjective norms refer to the pressures or support from others (i.e. family members, medical professionals, and friends) or environmental sources (i.e. media) to engage in certain behaviours. Furthermore, attitude, perceived behavioural control as well as subjective norms are all influenced by underlying beliefs: behavioural, normative, and control. Behavioural beliefs refer to knowledge that the behaviour will lead to certain outcomes (i.e. exercise promotes affiliation, improves fitness). Normative beliefs refer to how significant others value the behaviour (friends, family, medical

professionals). And control beliefs are how individuals perceive the barriers and facilitators influencing the behaviour (i.e. lack of time, low energy, weather). Hausenblas and colleagues (2008) contend that “the main TPB proposition is that people will intend to engage in a behaviour when they evaluate it positively (attitude), believe that significant others want them to participate in it (subjective norm), and perceive it to be under their control (perceived behavioural control)” (p. 2556). The conceptual nature of the Theory of Planned Behaviour is shown in Figure 2.1.

Figure 2.1 Theory of Planned Behaviour

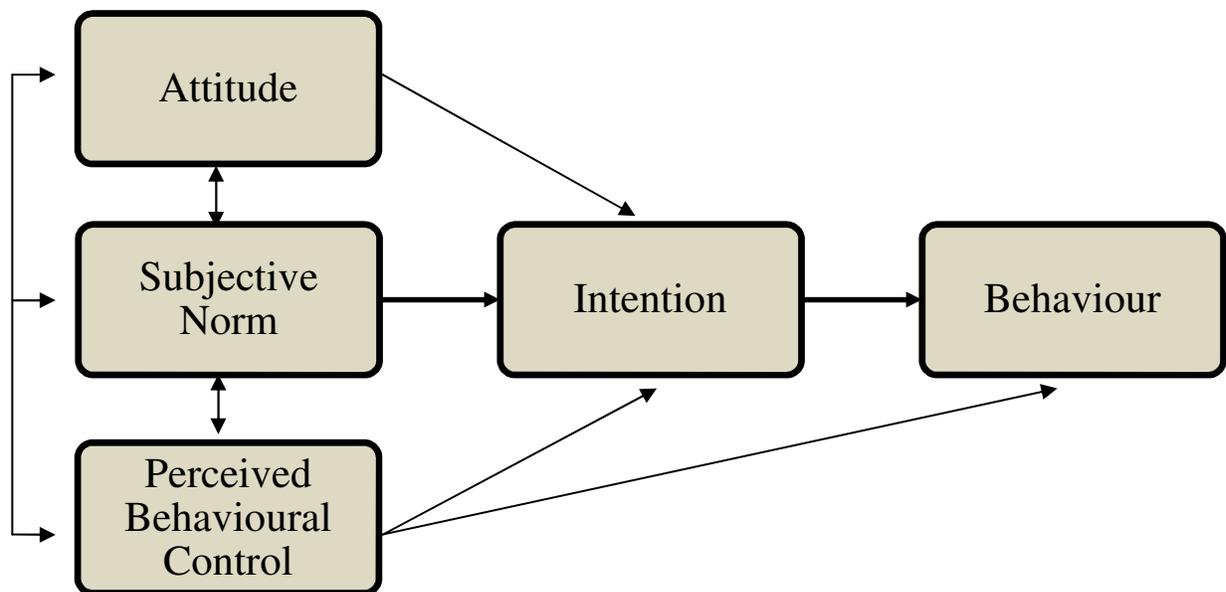


Figure 2.1 Relationship between attitude, subjective norms, and perceived behavioural control determines intentions and behaviour. Adapted from Theory of Planned Behaviour (Ajzen, 1985).

This framework has recently been applied to explain women's exercise behaviours during pregnancy. According to Hausenblas and colleagues (2008), the Theory of Planned Behaviour is a relevant framework to evaluate pregnant women's experiences because it includes personal (attitude), normative (subjective norm), and control (perceived behavioural control) factors that may be influenced by pregnancy side-effects (e.g. weight gain, fatigue, mood changes). For example, Symons Downs and Hausenblas (2004) examined women's beliefs about exercise during pregnancy and post-partum using the Theory of Planned Behaviour as a framework. The authors assessed the frequency of exercise during a typical week and with the Exercise Beliefs Questionnaire (open-ended questionnaire) assessed participants' exercise beliefs during pregnancy and post-partum. Participants reported that exercise behaviours during pregnancy and post-partum improved mood and energy levels, helped them stay fit, and helped control weight. In terms of normative influences, family members and partners influenced exercise behaviours the most. The barriers (or control beliefs) to physical activity during pregnancy and post-partum were physical limitations, tiredness/fatigue, time constraints, and weight gain.

Symons Downs and Hausenblas (2007) further examined the exercise intentions and behaviours of women during their third trimester of pregnancy. Sixty-two pregnant women answered questionnaires regarding their exercise behaviours during their third trimester of pregnancy as well as six weeks post-partum. Results suggested that perceived behavioural control, attitude, and pre-pregnancy exercise weakly influenced one's intention to exercise and that normative beliefs did not influence the intention to exercise and did not predict whether or not one actually kept exercising over time. Despite the finding that some women reported having little motivation for exercise during pregnancy, many women felt that exercise improved mood and energy levels as well as had the potential to help them during labour and delivery.

The authors suggested that the findings supported the Theory of Planned Behaviour as a framework to understand behaviours and intentions for exercise during pregnancy.

Lastly, Hausenblas and colleagues (2008) analyzed the same data from the previous study to examine women's exercise intentions and behaviours during their first and second trimester of pregnancy using the Theory of Planned Behaviour as a framework. They asked pregnant women questions regarding attitude, subjective norms, perceived behavioural control, exercise intentions and behaviours as well as pre-pregnancy exercise behaviours. Findings suggested that "exercise intention was the only longitudinal predictor of changes in exercise behaviour [$t(56) = 4.60, p < .01$]" over the course of the three trimesters of pregnancy (p. 2558).

These findings provide insight into the factors affecting motivation for exercise during pregnancy and further suggest that perceived behavioural, control, and normative beliefs may impact the choice, persistence, and intensity of exercise behaviours during pregnancy. Despite the significance of the Theory of Planned Behaviour as a framework to explain women's exercise beliefs during pregnancy, Hausenblas and colleagues (2008) acknowledged the limitations of their findings as they only examined women at certain time points during pregnancy and the constructs of the theory may fluctuate with time and context. The authors also suggested that literature pertaining to the psychosocial determinants of physical activity during pregnancy is scarce; therefore, more research is required to understand the relationship between psychosocial variables and the predictors of physical activity during pregnancy (Hausenblas et al., 2008).

As depicted by reviewing these three studies, researchers have recently used the Theory of Planned Behaviour as a framework to explain exercise behaviours during pregnancy, adding to the extant research focusing on social support and self-efficacy.

2.5 Literature Review: Summary

As reviewed above, three key empirical and theoretical factors (social support, self-efficacy, and behavioural intentions) have been suggested to impact women's motivation for exercise during pregnancy. Social support has been found as an important factor fostering women's motivation for exercise during this time. Specifically, social support has helped women who are expecting cope with stress, but lack of support from family members and friends has acted as a barrier to exercise. Self-efficacy (situation specific self-confidence) has been an important factor affecting exercise behaviours; personal, social, as well as environmental factors have been found to impact motivation for exercise during this time. Furthermore, barrier self-efficacy has been associated with exercise behaviours throughout pregnancy. The Theory of Planned Behaviour has also been used as a framework to explain exercise behaviours during this time suggesting that motivation for exercise is affected by women's perceived behavioural control and normative beliefs.

When reviewing the literature, it is apparent that little research has been conducted examining the psychosocial variables affecting exercise behaviours at different time points during pregnancy. Most researchers examining motivation for exercise during pregnancy have done so using quantitative methods (questionnaires) and at one time point. Therefore, there exists a gap in the literature and research is needed examining women's experiences with physical activity over the entire course of pregnancy. An examination of the factors affecting motivation for physical activity over time is needed in order to determine whether these factors change, and how and why these changes affect motivation as pregnancy progresses. In addition, very few (with the exception of a few studies focusing on social support) have asked women to discuss their experiences with exercise during pregnancy, therefore silencing women by omitting

their perspectives from the current research. There also exist several gaps in the literature focusing on women's experiences with health care professionals and exercise experts during pregnancy as well as the experience of miscarriage. Therefore, asking women about their lived experiences during pregnancy is important, as by building on the previous research, it will shed light on the lived experiences of expecting mothers.

Chapter 3: Method

3.1 Method

A combination of an inductive and deductive approach guided the research process as researchers have found it appropriate as a means to understand the meaning given to lived experiences, especially in women (Jansen & Davis, 1998; Schwandt, 1994). Specifically, interpretative phenomenological analysis (IPA) was used as a method to explore the expecting women's experiences with physical activity throughout the course of pregnancy (Smith & Osborn, 2003). Data were used from interview transcripts, field notes, as well as from a demographic data questionnaire. An interactive strategy of two approaches, a case-based and a concept-based approach (Miles & Huberman, 1994) was used to analyze the data. The researcher began by reading the interview transcripts and field notes, amalgamating the thoughts from each method of data collection for each participant, and clumping the data into categories for each of the nine cases. Following this process, themes that emerged across the sample were identified, and further analyzed. This approach was used to identify the changes and/or lack of change occurring in women's experiences with activity throughout the course of pregnancy and was selected as the most representative way to demonstrate the women's perspectives, taking the temporary and changing nature of pregnancy into consideration (Lincoln & Guba, 1985).

This thesis study sought to obtain knowledge about women's experiences with physical activity throughout the course of pregnancy and to specifically examine if there were changes in the factors affecting motivation for exercise as pregnancy progressed. As a result, nine participants or cases were chosen and all cases were examined at two time points to examine change over time. The decision to include nine participants in the sample at two time points was

based on research conducted by Kvale (1996) who suggested that “the number of subjects necessary depends on a study’s purpose” (p.102). After two interviews with nine participants, no new and relevant themes emerged, therefore fulfilling the study’s purpose by allowing an examination of the themes present in women’s accounts of their experience with physical activity throughout the course of pregnancy.

The interviews began with a set of basic demographic questions asked through a short questionnaire. I inquired about each participant’s age, place of birth, first language, marital status, income, educational attainment, as well as their current week of gestation. These questions were important to ask in order to ‘place’ each participant within the rest of the sample. Finally, women were asked if they engaged in/and how much activity they engaged in before pregnancy, as well as how much activity they engaged in at the time of the first and second interviews (as their pregnancy progressed). They were also asked whether this activity was perceived as light, moderate, or vigorous in intensity. This information supplemented the interview information focusing on physical activity behaviours, giving the researcher the opportunity to assess women’s perceptions of the intensity and choice of the activities in which they engaged (as this would likely vary among individuals).

The semi-structured interview guide was composed of questions based upon previous research suggesting that factors such as choice, persistence, and intensity of physical activity, barriers/enablers to activity, coupled with personal and environmental factors, affected women’s motivation for physical activity throughout the course of pregnancy. The goal of this thesis project was to build on this previous research by asking women to discuss their experiences with physical activity as their pregnancy progressed. The questions asked during the interviews also

allowed for discussion surrounding topics that may not have surfaced in the previous literature as women were given the opportunity to shed light on their personal experiences.

The themes guiding the interview guide for this study were: self-efficacy for physical activity throughout pregnancy, behavioural intentions surrounding physical activity during pregnancy, perceived social support for activity, as well as personal and environmental factors affecting activity attitudes and behaviours during this time. The semi-structured interview guide was formulated to address both research questions. To address the first research question (RQ1: How do women experience exercise as pregnancy progresses?), questions were asked surrounding the themes of experiences with physical activity before pregnancy versus during pregnancy. Specifically, I was interested in finding out if women's physical activity attitudes and behaviours changed from pre-pregnancy, throughout the course of pregnancy, and if and why this was the case. In order to address the second research question (RQ2: What factors affect the choice, intensity, and persistence of exercise behaviours through the course of pregnancy?), questions surrounded the themes of current activity practices, attitudes towards activity, social support, information sources, as well as cultural factors. I was interested in learning about the barriers and enablers to physical activity, and if they changed (or remained the same) as pregnancy progressed.

3.2 Recruitment

Ethical approval was received from the Behavioural Research Ethics board at the University of British Columbia. Recruitment of participants was accomplished through three different avenues. First, letters were mailed to 24 prenatal instructors in the Vancouver/Lower

mainland area (see appendix D) requesting help with recruitment. From those letters, three instructors offered to help, and acted as gatekeepers, sending study information (by email or in person during class) to the women attending their prenatal fitness exercise classes. Secondly, the owner of a Fit 4 Two franchise (a prenatal exercise program with multiple classes and various locations in the lower mainland area) agreed to act as a gatekeeper. The study's letter of introduction as well as the study poster (see appendix F) was forwarded to all of the Fit 4 Two prenatal instructors (in 30 locations) in the Vancouver/lower mainland, who subsequently forwarded the letter and poster to the participants in their exercise classes. The manager of a maternity clothing store also acted as a gatekeeper by posting the study's recruitment poster in his store, as well as advertising the study on his weekly blog. A third set of gatekeepers helped with recruitment; Human Kinetics graduate students sent recruitment posters and letters of information to possible participants. Lastly, recruitment posters were posted in 17 community centers across the Vancouver/Lower mainland area.

Due to little interest for participation in the study, an ethics amendment was submitted and approved by the UBC Behavioural Research Ethics Board (four months after recruitment began), allowing the participants to be paid a stipend of \$30 for participation in the study as well as allowing telephone interviews. Following the amendment to ethics and from subsequent recruitment efforts, 17 women volunteered to participate in the study. Nine of the volunteers were interviewed, two volunteers were forced to drop out prior to the first interview due to having a miscarriage, and six volunteers were not eligible to participate due to having had a previous pregnancy, or being too far along in their pregnancy for a first time interview.

The women who were interviewed were recruited from a variety of avenues: three participants were recruited from the maternity store blog post/recruitment poster, four

participants were recruited through gatekeepers in Human Kinetics at UBC, one participant was recruited from a Fit 4 Two exercise class, and one participant was recruited from a poster at a community center.

The criteria for inclusion in the study was: 1) participants must have been expecting their first child as new mothers' experiences may have differed greatly from the experiences of women who already had children; 2) participants must have been physically active previous to becoming pregnant as participant beginning an exercise program during pregnancy may have had differing experiences than previously active women; 3) participants must have had remained active (or attempted to remain active) after becoming pregnant; and 4) participants had to be English-speaking. The language criterion was due to the nature of the methodology used; the nuances of language used during interviews were important to the researcher, especially when transcribing, interpreting and analyzing the data. As suggested in recommendations for interpretative phenomenological analysis (IPA) by Smith and Osborn (2003), the participants in the sample were rather homogenous in their characteristics (physically active and pregnant with their first child).

During the thesis proposal, it was outlined that participants would have to be in their first or early second trimester to take part in the first interview. Due to difficulty with recruitment, this criteria was not strictly observed, and some women were interviewed for a first time during their second trimester (mid to late second trimester). The difficulty of recruiting women in their first and early trimester was due to the fact that not many women "identified" as pregnant until mid-second trimester as a result of fears of miscarriage and/or ongoing medical testing.

Participants were offered a total of \$30 for their participation in the interviews. A stipend of \$10 was allotted following the first interview and \$20 was allotted following the second

interview in hope to minimize participant attrition. Of the nine participants, two refused the stipend.

3.3 Sample

The non-probability sample consisted of nine women who were interviewed twice during the course of their pregnancy. The first and second interviews occurred anywhere between one to five months apart. At the time of the first interview, participants ranged between ten and 35 weeks pregnant, and at the time of the second interview, between 31 to 39 weeks pregnant. Seven of the women were interviewed in coffee shops in their respective neighbourhoods (in the Vancouver/Lower mainland area), and two women were interviewed by telephone as they were not able to attend face-to-face interviews. With consent from the participants, interviews were recorded with a Zoom recorder and then transcribed verbatim with transcription software (Express Scribe). The interviews ranged from 40 minutes to 1 hour and 35 minutes in length, with a total of 17.27 hours and an average time of 57.57 minutes per interview. The interviews yielded 557 pages of transcripts.

All participants were between 25 and 41 years of age, with an average age of 32.8 years. At the time of the second interview; three participants were between the ages of 25 and 29 years; two participants were between 30 and 34 years of age, three participants were between 35 and 39 years of age, and one participant was between the age of 40 and 44 years. All but one participant had a healthy, low-risk pregnancy with no major complications or health concerns occurring from date of conception through the course of gestation until the second interview occurred. One

participant was considered 'high-risk' due to her age, as well as to health concerns, but was able to participate in both interviews.

Participants were all middle-upper class with household incomes ranging between \$31 000 to over \$75 000 yearly before taxes. One participants' household income ranged between \$31 000 and \$50 000, one participant's household income ranged between \$51 000 and \$75 000, six participant's household income was over \$75 000, and one participant's household income was unknown. The sample was highly educated, with participants reporting the obtainment of a university degree (four), a graduate degree (four), or a college/university diploma (two). The cultural origin of the sample was fairly homogenous; the majority of participants self-reporting as Canadian (five) whereas others self-reported as either Jewish (one), Dutch/Jewish German (one), German (one), and Mexican (one). Eight of the participants were white, one was Latina and all participants spoke English. All were married or in common law relationships and the sample had no diversity in terms of sexuality, with all participants self-identifying as heterosexual. In terms of physical activity engagement, all the women self-reported engaging in three to seven days of physical activity per week prior to pregnancy.

Table 3.1*Participant Demographics*

Characteristic	Participant (<i>n</i> = 9)
Age	
20-25	1
26-30	2
31-35	2
36-40	3
41-44	1
Ethnicity	
White/Caucasian	8
Latina	1
Income	
\$31 000-50 000	1
\$51 000-75 000	2
Over \$75 000	6
Languages Spoken	
English	9
French	2
Spanish	1
German	1
Education level completed	
College degree	1
University diploma	1
University degree	4
Graduate degree	3
Marital status	
Married/Common Law	9
Prenatal Care	
Midwife	5
General Practitioner	2
Obstetrician/Gynecologist	2

3.4 Data Collection and Rationale

Once volunteers agreed to participate in the study, they contacted the researchers (the research supervisor, Dr. Peter Crocker, or myself, Erica Bennett) by email or by telephone. The participants were then sent (either by email PDF or by mail) an initial contact letter (see appendix B) explaining the purpose of the study, as well as a consent form (see appendix C). Once they formally agreed to participate, a meeting time and place (convenient to the participant) was arranged for the first interview. Seven of the interviews were conducted in coffee shops in the Vancouver/Lower mainland area and two interviews were conducted by telephone (while participants were in their homes). Allowing the participants to choose the time and place of the interview allowed for a comfortable setting.

Semi-structured interviews were chosen as the method of data collection as they are in line with IPA recommendations (Smith & Osborn, 2003) and have been argued to be the best and most common way to understand others (Bryman, 2004). The interview questions focused on the broad categories of: physical activity behaviours pre-pregnancy as well as during the first and second trimester of pregnancy, attitudes towards physical activity during these times, information sources regarding physical activity during pregnancy, the role of health care professionals, partners, family and friends, attitudes towards the media, as well as barriers and enablers to physical activity pre-pregnancy and during pregnancy (see appendix A). The goal was that the exploration of these themes would generate information allowing us to not only answer the “what” questions, but also the “why” and “how” questions of women’s physical activity behaviours throughout the course of pregnancy (Fontana & Frey, 2000).

Before the first and second interviews formally began, the purpose of the study was once again explained to the participant, stressing the confidentiality of the data and the right to

withdraw at any time. The consent form (see appendix B) was then signed by the participant, and the participant was given a copy to keep for her records. Following consent, the participants filled out a biographical data form (see appendix E). Following the questionnaire, the semi-structured interview began.

As suggested by Bryman (2004), the interviewees were encouraged to “go off on tangents”, as “this gave insight into what the interviewee [saw] as relevant and important” (p.320). Because of their flexibility, semi-structured interviews allowed for further exploration of themes and questions that were not on the interview guide, but that were brought up by the participant, and important to the interest of this study. During the interview process, I aimed to create an equal, trusting, and collaborative relationship with the participants in order to create a comfortable environment conducive to sharing of information (Gilligan & Brown, 1992). Throughout the interview process, I was aware that the participants’ comfort would affect the quality of the responses to the questions posed. As explained by Fontana and Frey (2000), the social dynamic established during an interview has an effect on the accuracy of the accounts given by the participants. Probes were therefore used to gain more information regarding the participant’s accounts (see *probes* in appendix A). As suggested by Keats (2000), probes were used to “clarify meanings, to extend the range and quality of replies, to examine consistency, to give encouragement, and to reduce anxiety” (p.11).

For the second time interview guide, the transcripts from the first time interviews were read, and questions were devised based on topics that needed elaboration or clarification. Similar questions asked within the first interview were asked during the second interview, but within the context of how the participant was feeling at this point in time in her pregnancy (in her third trimester as opposed to during her first and second trimester). Meeting for a second

interview allowed for further probing on certain topics discussed during the first interview which fostered increased rapport and facilitated the flow of discussion. The second interview with participants also allowed for validation of the data as I gave participants the opportunity to revisit their responses and asked again for them to give their views on these topics (Polkinghorne, 2005). The time left between both interviews gave participants a chance to think about the topics that had been discussed over the first interview, as well as to develop their thoughts and feelings regarding these themes.

3.5 Data Analysis

To gather and analyze the data, an interpretative phenomenological approach (IPA) was used to examine women's personal experiences with exercise during pregnancy (Smith, 1996; Smith & Osborn, 2003). Since IPA has been used to explore change in women's attitudes and behaviours during exercise pre and post interventions in sport and exercise psychology (Sabiston, McDonough, Sedgwick, & Crocker, 2009; Smith, 2004), it was deemed as an appropriate method to use to explore women's perceptions of change in physical activity attitudes and behaviours throughout the course of pregnancy.

The use of IPA involved the consideration of two different points of view; the participant's perspective and the meaning they gave to their experiences, as well as the researcher's interpretation of the participant's perspectives (Smith & Osborn, 2003). As a result, the findings reflected how women talked about and appraised their experiences with physical activity throughout the course of pregnancy, and how the researcher interpreted these experiences as well as how they were communicated (Sabiston et al., 2009).

As recommended for IPA (Smith & Osborn, 2003), the goal was for the researcher to immerse herself into the study to better understand and appraise women's experiences. These recommendations were also followed throughout the data analysis process. As a first step, all of the first time interview transcripts (and field notes) were read, and themes were identified and added to the code book as new ideas emerged from the raw data. Categories of higher order themes were then created, and subthemes were slotted into their respective categories. Throughout the process of creating this code book, the themes emerging from the transcripts were compared to the themes from the other transcripts to check for consistency between themes. Once all of the time one interviews were initially coded, the transcripts were re-read to ensure that the coding of themes was consistent, and categories were further refined if necessary (Smith & Osborn, 2003).

An 'idiographic profile analysis' (Sabiston et al., 2009) was employed to consider women's experiences of change with physical activity throughout the course of pregnancy once the second interviews were completed. This approach has been employed in the sport and psychology literature in studies using an interpretative phenomenological approach (Dean, Smith, Payne, & Weinman, 2005; Holt, Berg, & Tamminen, 2007; Reynolds & Prior, 2003). The researcher who conducted the interviews read and re-read all of the transcripts (time one and time two transcripts) and using an inductive approach, coded the transcripts for emergent themes. A profile for each participant was then created, and the themes from the raw data focusing on change (or lack of change) were added to the code book (Miles & Huberman, 1994). Following the identification of pertinent themes within each participant's discourses, the code book was re-worked, exploring the similarities and differences across the group of nine women.

Consistent with recommendations for IPA and in order to improve the trustworthiness of the data (Sparkes, 1998), two independent coders were asked to review the transcripts and to identify categories and themes emerging from the raw data. The three researchers then met and discussed the themes and categories emerging from the transcripts, agreeing on a final category of themes to be discussed within this thesis. The independent coders were both PhD students in sport and exercise psychology who have previous experience with qualitative research.

3.6 Reflexivity

As discussed by Willig (2001), when one engages in epistemological reflexivity, one poses the important questions of: “How has the research question defined and limited what can be ‘found’? How have the design of the study and the method of analysis ‘constructed’ the data and the findings? How could the research question have been investigated differently?” (p.2). Therefore, in engaging in epistemological reflexivity, I aim to acknowledge the assumptions I have made regarding knowledge, and how these assumptions have affected the way I conducted the research and in turn, the findings of this research. I will do so by reflecting on my thoughts throughout the research process.

I firstly recognize that my perspective, attitudes, and behaviours are shaped by my background as a middle-class, white, bilingual woman. Given my position, I have, from a very young age, been privileged with many opportunities to engage in sport and physical activity. As a child, I was enrolled in many recreational sports, and my parents always supported my endeavours (both from a social support as well as from a financial perspective). I was also raised in a home with two very active parents (my mother and father both being avid marathon runners amongst engaging in many other physical activities). As a teenager, I played golf and continued

to play four years of varsity golf during my undergraduate degree which was followed by a few years of professional golf teaching and playing. Exercise now plays a large role in my everyday life; I remain an avid runner, and occasionally take part in recreational sporting activities.

Despite having mostly positive experiences with sport and exercise, I must acknowledge that for five years, I engaged in excessive exercise coupled with maladaptive eating practices, which became problematic and affected my daily functioning. These positive and negative experiences have shaped my perspectives regarding physical activity, thereby influencing the assumptions I make when physical activity is discussed.

First, the designing of the proposal for this research project was approached with a rather naïve attitude, given my position as a new master's student at the time. When reviewing the literature, I found a gap in the literature such that there was much written about the physiological benefits and detriments of exercise during pregnancy, but little research existed examining the psychosocial constructs affecting motivation for physical activity during pregnancy. Of course, some literature was found on the barriers and enablers to physical activity during this time, but very little research had looked at how women actually experienced physical activity throughout the course of pregnancy and if the factors affecting physical activity behaviours throughout the course of pregnancy changed and why they changed as pregnancy progressed. Influenced by the current body of literature mostly using quantitative methods of inquiry, when formulating my research questions (RQ 1: How do women experience exercise throughout the course or pregnancy? RQ2: What factors affect the choice, intensity and persistence of exercise behaviours during the course of pregnancy?), I was quite confident that the common barriers and enablers present in the current literature would emerge as themes within the women's accounts. I also expected that women would talk about their bodies, and that self-conscious emotions such as

self-esteem would be discussed. I expected the participants to discuss their changing bodies, and the effects of these changes on their physical activity behaviours.

The first surprise I encountered (and that forced me to challenge some of my assumptions regarding pregnancy), was when two women who were to participate in the study had to drop out due to having a miscarriage. I was surprised that this happened twice, which prompted me to further explore the literature focusing on miscarriage.

My assumptions were again challenged when I had trouble recruiting for the study. After having difficulty with recruiting, we decided to pay participants \$30 for both interviews as an incentive for participation. In the final sample, all of the volunteers for the study were highly educated and of middle/upper class and two of them refused the stipend because they “did not need the money”. I then realized that, as alluded to in the literature, this potentially spoke to the fact that privileged women were the most likely to have the opportunity to be physically active.

It was not until I began scheduling interviews that I personally became self-conscious in the research process. Specifically, when I would speak to women on the phone or contact them by email to plan a first meeting place and time, I would often be asked to give information regarding my looks (i.e. color of hair, gender, height, age) in order for them to identify me upon the first interview. Women would often ask me: “You will find me, I will be the pregnant one, but what do you look like?” It was when I was forced to reveal my age as well as my general appearance that I began to worry about what the participants would think of the fact that I had never been pregnant. As explained by Flick (2002), many of the participants wished to ‘place’ me during the interviews. In an effort to make them comfortable, I would ask (as a first or second question) if there was anything they would like to know about me before we got started.

Many participants asked me right away if I had ever been pregnant or if I had any children (I have never been pregnant nor have I ever had children).

During the first few interviews, I felt that having never been pregnant was a limitation and a potential barrier to the establishment of interviewer-interviewee rapport, as I worried that some women might question my credibility as a researcher. I therefore read some literature on the issue of difference between researcher and interviewee (Patton, 2002) and realized that I could use this lack of personal experience to ask women to elaborate on certain statements. For example, I would use probes such as: “That’s really interesting. I’ve never been pregnant. Can you tell me what that’s like?” I found this approach quite useful, in that when probed, women would take on the role of ‘teacher’ (Flick, 2002) and would therefore provide in depth accounts of their experiences to help me better understand their stories. The semi-structured interview guide also helped with this in that I was able to use important probes when appropriate.

A few participants (three) also asked me if I was physically active, to which I responded yes. At first, I did not give enough thought about divulging information about myself in terms of my physical activity behaviours, but then realized that this may have affected the tone of the interview, as the divulging of personal information may have impacted women’s perceptions of their own levels of activity, possibly changing their responses to some of my questions. Therefore, divulging this information about myself may have been a limitation to this study; although, the participants were all very active, and the three particular women who asked me if I was physically active were all very competitive in their own disciplines/practices (and not to mention much stronger athletes than myself). Thus, I do not feel that this acted as a strong limitation to the research process, but is a point that needs to be acknowledged.

The use of multiple interviews was also very helpful in that it offered me the opportunity to create better rapport with the participants. I noticed that women came to the second interview having thought about the questions I had asked during the first interview and having thought about their previous responses. A downfall to the second interview was that because women felt more comfortable, they tended to talk about more things that did not have to do with the themes of the research project (i.e. how their pregnancy and life was going in general), but this provided insight into what the women felt was important at this time and allowed for contextualization of their experiences during pregnancy.

Chapter 4: Results

4.1 Participant Profiles

4.1.1 *Heather*

Heather was a 29 year old, white/Caucasian, middle/upper class, Jewish, English speaking Canadian. At the time of the first interview (occurring at 29 weeks gestation), she had been married to her husband for two years. Throughout her pregnancy, Heather was seeing a general practitioner who would be delivering her baby and providing her with pre-natal care.

At the time of the first interview, was doing some substitute teaching in hopes of getting a permanent teaching position in the Vancouver area post pregnancy. Heather was also working part time as a gymnastics coach. At the time of the second interview (occurring at 38 weeks gestation), Heather indicated that she had stopped coaching gymnastics due to her pregnancy as she was getting too uncomfortable and could no longer teach safely. She also described that she would be taking time off from work indefinitely after the baby was born.

Heather described her pre-pregnancy physical activity levels as moderate. She self-reported engaging in multiple activities such as walking, gymnastics, cheerleading, and ‘circus’ sports. Heather described exercise (such as walking) as important in order to stay healthy, but explained that sports were much more important to her as she considered herself an athlete. She engaged in sport to “stay fit and healthy”, as well as to “stay strong”.

4.1.2 Kaitlin

Kaitlin was a 34 year old, Latina, middle/upper class, Spanish and English speaking woman. Kaitlin was born, and grew up in Mexico. At the time of the first interview (occurring at 10 weeks gestation), Kaitlin had just discovered she was pregnant. This pregnancy was met with delight and she was very excited to talk about it as she and her husband had been trying to have children for three years. At the time of the second interview (occurring at 25 weeks gestation), Kaitlin was experiencing added stress due to her full time work. As a result, she was attempting to cut back her hours in order to take some time to rest during her third trimester. Kaitlin explained that she would keep working from home as she saw fit once the baby was born.

Kaitlin also described her experience with a previous miscarriage. This had an impact on her lifestyle choices as well as her exercise and sport endeavours throughout this pregnancy. She explained that she would be seeing an obstetrician/gynecologist throughout her pregnancy.

Kaitlin described herself as very active pre-pregnancy, engaging in vigorous physical activity on average seven days per week. She was involved in sports such as soccer and beach volleyball and also went to the gym for aerobics and dance classes. Kaitlin described physical activity as an integral part of her everyday life.

4.1.3 Hilary

Hilary was a 37 year old, white/Caucasian, middle/upper class, English and French speaking Canadian. After finishing her undergraduate degree, she pursued graduate studies and at the time of both interviews, worked in finance. She described her job as stressful, high paced,

and very demanding. As a result of work commitments, Hilary would not be taking maternity leave as her husband would be taking nine months off work once the baby was born.

At the time of the first interview (occurring at 35 weeks gestation), Hilary had been married to her husband for four years. She described herself as someone who thought she might never get married as she was “independent” and “very driven”. Hilary also described not always wanting children, but since her “biological clock was ticking”, and given that they were ready to have children, they started trying to have a baby.

Hilary also explained that previous to this pregnancy, she had had a miscarriage. This had an impact on her exercise and sporting endeavours during this pregnancy. Hilary would be seeing a midwife throughout her whole pregnancy.

Hilary described her pre-pregnancy exercise levels as very vigorous as she engaged in physical activity seven days a week, which included running, road biking, lifting weights, taking aerobics classes, Pilates, and yoga.

4.1.4 Anne

Anne was a 27 year old, white/Caucasian, middle/upper class, English speaking Canadian. At the time of the first interview (occurring at 25 weeks gestation), she and her husband had been married for three years and had planned this pregnancy.

At the time of both interviews, she worked as a physiotherapist and described her job as moderately active and stressful. At the time of the second interview (occurring at 33 weeks gestations), she described planning on taking a year of maternity leave after the baby was born. She was seeing a general practitioner throughout her pregnancy.

Anne described her pre-pregnancy activity levels as moderate. She biked to work every day and played on a soccer team. On occasion, she ran with her husband. Anne described physical activity as mildly important. She engaged in activity to socialize and stay healthy, but physical activity was not an integral part of her identity.

4.1.5 Julie

Julie was a 24 year old, white/Caucasian, middle class, English speaking Canadian. At the time of the first interview (occurring at 15 weeks gestation), Julie had been married to her husband for two years. Her pregnancy had been planned. She also explained that she was going to be seeing a midwife throughout her pregnancy.

At the time of the second interview (occurring 31 weeks gestation), Julie was still working full time and would be taking a one year maternity leave starting two weeks before her due date.

Julie described her pre-pregnancy activity levels as moderate to vigorous and self-reported engaging in 80 minutes of activity three to four times a week, sometimes with a personal trainer. She also walked her dog every day and occasionally walked with family and friends. Exercise was described as very important as it gave her confidence, and gave her the opportunity to socialize. She also used it to stay healthy and control her weight.

4.1.6 Dominique

Dominique was a 33 year old, white/Caucasian, middle/upper class, English and German speaking woman. At the time of the first interview (occurring at 19 weeks gestation), she had been married to her husband for almost a year, and her pregnancy had been planned.

She described her work as difficult and physically taxing. As a result, her work helped her build endurance and encouraged her to be more active. At the time of the second interview (occurring at 32 weeks gestation), Dominique was still working full time but was training someone to take over her practice for a year as she planned to take maternity leave once the baby was born.

Dominique described her pre-pregnancy activity levels as vigorous as she was an avid runner and road biker. She also swam competitively. Dominique explained that activity helped her keep a good work/life balance, and that it was an integral part of her everyday life, and therefore, of her identity

4.1.7 Maria

Maria was a 41 year old, white/Caucasian, middle/upper class, English speaking, Canadian woman. She grew up in British Columbia, and at the time of the first interview (occurring at 22 weeks gestation), had been married to her husband for two years. Her pregnancy was planned as she and her husband decided they had to start trying to have children as soon as possible due to Maria's age.

Maria described her job as very demanding, as she was self-employed. Due to her hectic schedule, Maria did not plan on taking maternity leave once the baby was born. Furthermore,

due to her age, as well as having a fibroid which needed extra medical attention, Maria was seeing an Obstetrician/Gynecologist who would provide her with prenatal care throughout her pregnancy. She also described that she had been pregnant once before, but that she did not have the child.

Maria described her pre-pregnancy activity levels as vigorous, as she engaged in physical activity every day of the week. From being an avid runner to playing on sports teams and enjoying high risk sports such as extreme white water rafting and rock climbing, Maria had been active since her childhood and activity was part of her identity.

4.1.8 Samantha

Samantha was a 39 year, white/Caucasian, middle/upper class, English speaking, and Canadian woman. At the time of the first interview (occurring at 11 weeks gestation), she had been in a committed common law relationship with her male partner. At the time of the second interview (occurring at 27 weeks gestation), they were engaged and to be married before the baby was born. Samantha explained that her pregnancy had been planned due to her age.

Samantha obtained an undergraduate degree, and at the time of both interviews, owned her own company. Because her partner was also self-employed, Samantha was apprehensive of what would happen once she gave birth, as they could potentially find themselves in a financial bind if she was not able to work.

At the time of the first interview, Samantha was seeing a general practitioner for her prenatal care. As a result of being frustrated with her family physician who did not support her

physical activity endeavours, she changed to a midwife partway through and for the remainder of her pregnancy. At this time, Samantha also explained that she had had a previous miscarriage, which influenced her physical activity attitudes and behaviours throughout the current pregnancy.

Samantha described her pre-pregnancy physical activity as vigorous, as she was a sport enthusiast (i.e. mountain biking, skate skiing), and followed a very vigorous training program called 'Cross Fit' with a group of other individuals. As a result of her ongoing engagement in these activities, Samantha considered exercise and sport an integral part of her identity.

4.1.9 Kristine

Kristine was a 36 year old, white/Caucasian, middle/upper class, English speaking, and Canadian woman. At the time of the first interview (occurring at 20 weeks gestation), she was in a committed relationship with her common law partner, her pregnancy had been planned, and she was seeing a midwife.

Kristine described her job as stressful and demanding. At the time of the second interview (occurring at 27 weeks gestation), she was unsure of how long of a maternity leave she would take, due to feelings of insecurity about her status in her workplace upon her return.

Kristine described her pre-pregnancy activity levels as vigorous, as she engaged in physical activity (running, swimming and/or biking) six days a week, sometimes twice a day. She also competed in triathlons. As a result, physical activity was an integral part of her identity and she described it as extremely important.

4.2 Findings

In this chapter, I present the dominant themes emerging from nine women's reflections on their attitudes and behaviours related to physical activity during pregnancy. I begin with the women's perceptions of the physical barriers to physical activity and examine how they change as pregnancy progresses. I then discuss the motivational and social factors influencing the participants' motivation for exercise, and finally discuss the women's perspectives on identity and its influence on physical activity attitudes and behaviours throughout the course of pregnancy.

4.3 'I've Slowed Down': Physical Barriers to Physical Activity in Early Pregnancy

All of the participants described progressively "slowing down" with respect to their levels of physical activity throughout the course of pregnancy, often choosing different, less vigorous types of activity, and engaging in these activities for shorter periods of time. These behavioural changes were most often attributed to physical barriers and/or facilitators, and as each woman's body changed with the progression of pregnancy, new physical barriers and facilitators were identified.

First and early second trimester, the physical factors identified as barriers and/or facilitators to physical activity were body concerns (seven), fatigue (seven), fear of miscarriage/the experience of a previous miscarriage (four), nausea and/or vomiting (six).

4.3.1 *Body Concerns*

The women spoke extensively about the body changes they experienced as pregnancy progressed and the resultant impact on their physical activity, as well as on their body image. During the first and early second trimesters, seven women discussed weight gain and resultant body image concerns such as ‘feeling fat’. They also concomitantly discussed the difficulty of finding appropriate clothing for their changing bodies.

Throughout the first and very early second trimester, weight gain was described as gradual and localized to the breasts and stomach. These participants explained not yet feeling pregnant, and as Julie put it: “just appear[ing] to have gained a few pounds around the middle”. Furthermore, five of these women had not yet told their family, friends and co-workers about their pregnancy, resulting in increased feelings of self-consciousness about their changing bodies. Since they hid their pregnancy from most, this feeling of “being fat” was accentuated when around significant others as the participants “did not have an excuse to gain weight” which exacerbated the dismay felt surrounding weight gain. As a result, it was not until they could see their full, round stomach during the second trimester that pregnancy “felt real”. The women had similar experiences to that of Samantha:

I went through a little fat phase where I kind of didn’t notice fat previously...it just threw me off a little bit...when you don’t look excessively pregnant... it’s sort of hard to take when you’re somewhat usually quite a fit person. I think that’s a bit of a body image thing but now I feel like I’m more obviously pregnant so at least I feel like the whole thing is just a different look all together.

During this “feeling fat but not pregnant” period, the women spoke about the difficulty of finding appropriate clothing to suit their changing bodies. Julie explained her experience:

I've only gained about three pounds so far...I do notice that my jeans are uncomfortable to wear...So I've been wearing a lot of stretchy pants (laughingly). It's making me a little uncomfortable going out in the evening because I don't feel like anything looks good on me anymore. ..but I know that's natural and it's part of the pregnancy...so I feel fat, but I don't feel pregnant because I'm at that stage where I don't actually look pregnant. I'm trying to cover up but I still I feel like nothing is working for me right now.

Not only were body concerns aggravated during this time, but they also had an effect on the women's negotiation of the appropriate level of physical activity in which to engage. Kaitlin explained that since she did not look pregnant, she did not feel that she should be “slowing down” with her activities even though she was not sure this level of activity was safe. In this case, tension was experienced as a result of the need to remain active, but with worry of not being healthy for herself and her baby.

During the late second and third trimester, the same seven women discussed weight gain but had become increasingly accepting of these changes. These participants spoke about how they “got over the fat phase” when they started looking pregnant around mid-second trimester. As a result, their body concerns shifted from feelings of self-consciousness about their weight gain to worry about increasing physiological demands which caused pain and discomfort. Heather explained her experience:

I walk the dog almost every day...but yesterday I didn't which I always feel guilty for but I just couldn't get up... I often get pain in my stomach, uterus area. Occasionally, my hands and feet have gotten really swollen that I just need to go home and put them up. It's just hard sometimes, my hips hurt and my back hurts. I find that I'll walk places that I know there are benches at frequent intervals whereas before I would just kind of wander around the neighbourhood and whatever.

As pregnancy progressed, these body concerns had an impact on the women's physical activity engagement, forcing them to modify some of their usual activities. Maria's experience with surfing is an excellent example:

I was surfing last weekend...it was hard (laughingly)...I won't be able to go again...cause you can't lay on your board...you can't lay on your belly and surfing is laying down and paddling and engaging your core...so I was doing this kinda thing like modifying my tummy and then getting up...like once you start packing around ten or fifteen extra pounds...I was like urghhhhhh (forcing sound)...it was not quick at all...I forced my way up.

Despite having to modify her activities, Maria further explained that she was appreciative of her changing body as she felt that it had adapted well to the unpredictable nature of pregnancy.

Given that body changes were perceived differently as pregnancy progressed, they led to changes in the choice, intensity and persistence of physical activity, and therefore affected motivation for activity throughout the entire course of pregnancy.

Keeping a 'fit' and aesthetically pleasing body was also important for all of the women in the study, which further emphasized that body concerns were an integral part of women's experiences and tied to their identity. Some (four) participants discussed the importance of being healthy for themselves and their baby throughout the course of pregnancy, but indicated having trouble accepting the resultant body changes. Strong dismay was experienced during early pregnancy, and dissipated as pregnancy progressed as women then talked about embracing their "new" bodies. They often made comments similar to Heather, who throughout the first interview, repeatedly emphasized that she enjoyed being strong and that she was worried that her muscle mass would "waste away" during pregnancy and that she did not like gaining weight even though she knew it was necessary. This attitude shifted as pregnancy progressed:

My big belly is sticking out and I absolutely love it. I've stopped weighing myself...it was counterproductive. I'll weigh once a month when I go to the doctors and if he's happy with what's going on then that's good enough for me.

In summary, the women spoke about how they negotiated the body changes associated with pregnancy, and how these changes impacted their motivation to be physically active.

4.3.2 *Fatigue*

Another prominent physical barrier affecting motivation for physical activity during the first and early second trimester was fatigue. Of the seven women who experienced fatigue, two explained that it had been an indication of a possible pregnancy, as this fatigue was experienced before discovering that they were expecting. These two women described their fatigue as extreme, debilitating, and like nothing they had ever experienced before. Julie explained:

I'm having a hard time actually getting motivated at this point because I've been so tired with becoming pregnant. In my first trimester, I was sleeping for ten or more hours a day and working on top of that, so I'd get home from work and I would just wanna sleep. So I had a really hard time getting motivated to go to the gym.

As explained by this participant, the fatigue experienced in the first and early second trimesters also acted as a deterrent to her usual physical activity behaviours.

Four other participants also described experiencing fatigue, but with less intensity. They had less energy than usual, and this had an effect on the intensity of their physical activity behaviours. Heather shared her experience as she described a drop in energy levels during her first trimester which affected the intensity of her activity and her performance at work (gymnastics coaching). She then regained this energy during the second trimester which allowed her to resume some of her activities:

Eventually when I did tell the head of the gym she looked at me and she went: 'oh ok, I noticed that your energy dropped and was going to talk to you about it cause I thought

maybe you were just getting lazy on the job...it makes total sense now, you do what you need'. So I mean I guess my energy had dropped and you feel gross and you can't tell anyone why.

Another participant experienced some fatigue early during her first trimester which she initially had attributed to the numerous life changes she was going through at the time since she did not know she was pregnant when experiencing this fatigue. After some self-reflection, Kaitlin came to believe that even though she did not know she was expecting at the time, her pregnancy symptoms had been exacerbated by the stress and fatigue she felt due to these life changes (i.e. the purchase of a new home, being busy at work with a booming business):

The tiredness has been off and on...and I didn't even know [I was pregnant]. I was tired. I was still working and doing whatever. One day my husband saw me and he's like you look tired and I did, I felt really tired. And uh, well I was pregnant by then (laughingly).

Despite feeling tired, five of the seven women who experienced fatigue explained that it did not impede on the type of physical activity in which they engaged, nor did it impede on the persistence of this activity, but that it did affect the intensity of these behaviours at times. Therefore, for some women, fatigue was a physical factor acting as a barrier to physical activity during pregnancy.

4.3.3 *The Experience of a Previous Miscarriage*

When asked about their attitudes towards pregnancy and the importance of physical activity during this time, four of the women spoke about their experience with a previous miscarriage. They also discussed its impact on their attitudes towards physical activity during their current pregnancy, and how these attitudes affected their physical activity behaviours. These participants did not believe physical activity to have been the cause of their previous miscarriage, but were more cautious during this pregnancy as they feared another miscarriage. They had experiences similar to Hilary:

I had one miscarriage and I was a little bit concerned that maybe I had done something cause everyone thinks it's their fault even though the likelihood is it's not...so I had a conversation with, my sister's a pediatrician, and my other sister does physio and Pilates. And you know they sort of reinforced the fact that the likelihood of you increasing your internal body temperature by an amount that would impact it is very unlikely. You know, do what you wanna do...but don't be stupid, right? It made me feel better...and I'm usually pretty aware of my body so I was very aware of that discrepancy.

As depicted by Hilary, a previous miscarriage had had an impact on her beliefs regarding physical activity during pregnancy, and she subsequently became increasingly self-aware of her body during this pregnancy, especially when engaging in activity.

Two of the four women explained that they were frustrated because they did not know how much activity was safe which made them fear another miscarriage. Kaitlin explained: "I think what scares me most is just in the beginning...having another miscarriage...it took us like

three years to get pregnant”. As she further shared her story about a previous miscarriage, Kaitlin expressed her reluctance to engage in vigorous physical activity. She explained that she “slowed down” when first finding out about her pregnancy due to the fear of miscarrying again. She spoke about the difficulties of not being as active as she normally used to be, such that now she had lost her main avenue for stress relief. She explained that pre-pregnancy she would do something active every day of the week, but that she currently was only exercising three days a week due to the fear of another miscarriage.

As pregnancy progressed, the fear of miscarrying dissipated for all but one of these participants who explained that one of her friends had miscarried at five and half months pregnant. This made her realize that miscarriage was still possible in later pregnancy. Due to this ongoing fear, this participant engaged in less physical activity than she normally would have. In contrast, the three other women explained that as they progressed through their second and third trimester, they no longer feared miscarrying, and had “figured out” what worked for them in terms of activity. Samantha explained:

It is overwhelming...the constant fear at the beginning of miscarrying...but then you get over that and realize that ok that's not gonna cause a miscarriage...I have a bunch of friends they're all pregnant at the same time and they're all quite physically active.

For some of the women, the experience of a previous miscarriage and the fear of miscarrying for a second time acted as a physical barrier to physical activity during the first and early second trimesters of their pregnancies. As pregnancy progressed, that fear went away for most of the participants.

4.3.4 *Nausea and Vomiting*

Of the nine participants, six experienced nausea during the first and early second trimesters of their pregnancy. This nausea ranged from mild for some to severe for others. Furthermore, two participants experienced vomiting, one of which was on a few isolated accounts, and the other of which was continuous and described as being incredibly debilitating. Regardless of whether their nausea was mild or severe, all of the women but one explained that it impacted their ability to engage in physical activity, forcing them to either stop engaging in certain activities, to choose different activities, or to diminish the intensity of their activities. Maria, who experienced extreme nausea and vomiting, shared her experience: “Because I had so much nausea, I had to stop, I’m a runner, and I had to stop running which was really, really hard for me”.

In contrast, for the one participant who experienced constant nausea for over three months, exercise provided her with relief from this discomfort. Kristine explained: “First trimester I was feeling really, really nauseous but I was feeling like exercise was my only relief. I would go outside, I would go for a run, and it was cold out but it was so refreshing”. For this participant, nausea acted as a facilitator to physical activity engagement, as it provided her with some relief of her pregnancy symptoms.

During the second trimester, nausea and vomiting subsided for five of the six women who experienced these symptoms, but none of these participants returned to their pre-pregnancy activities. At this time, the women also talked about feeling less nauseous, but getting tired more easily during activity (i.e. being out of breath quicker). For the participant whose symptoms did not subside, nausea and vomiting were still experienced throughout her second and third trimester, but not as intensely as during her first trimester. As a result, she engaged in more

physical activity than during her first trimester, but could not elevate her heart rate as this would make her sick.

In summary, nausea and vomiting were experienced by the majority of participants in the first trimester, affecting their physical activity behaviours during this time. As pregnancy progressed, the symptoms subsided for most of these participants, but activity levels remained similar to first trimester activities.

4.4 ‘It’s just Really Uncomfortable’: Changes in Barriers as Pregnancy Progresses

Due to their changing bodies, different physical barriers to physical activity were experienced by the participants as pregnancy progressed. From late second to mid-late third trimester, the physical factors identified as barriers and/or facilitators were injury and/or injury potential (six), as well as pain/comfort level (nine).

4.4.1 Injury and/or Injury Potential

After describing their pre-pregnancy and early pregnancy physical activity, the participants spoke about how their activity practices had changed as of mid-second trimester. Six women had stopped engaging in sport (i.e. rugby, soccer, surfing, volleyball) because they were scared to injure themselves due to weight gain, loose ligaments, and increased pressure on joints. These participants had experiences similar to Kaitlin who described feeling “stressed” and “lacking confidence” in her sporting abilities now that her body had changed.

I stopped doing those two things [volleyball and soccer] and it was very difficult at the beginning cause I was like what do I do now? So I started going to the gym...trying to go Mondays and Wednesdays for standard gym classes. Fridays I have [prenatal] aquafit.

Although she exerted extra caution at the gym in order to avoid injury, Kaitlin replaced her sporting activities and attended more fitness classes (i.e. body sculpture and dance), as well as prenatal aquafit as she felt that these activities were safe. Similarly, most of the women chose different activities in order to replace the ones in which they could no longer engage.

Despite potential for injury, three of the participants kept engaging in their usual sporting activities until their third trimester, but with less intensity. For example, Dominique discussed her experience with skiing. She had confidence in her abilities as she was an avid skier; therefore, she continued to ski throughout her pregnancy, but chose runs where the risk of injury would be lower: “I plan on skiing until I’m uncomfortable...I’m a good enough skier to know when I’m in an unsafe place...[but] the main concern is injury...I’ll stick to groomers...as you get bigger your balance gets off”. Since they had been engaging in their respective sports for long periods of time, they felt comfortable to keep going with them, and modified their behaviours accordingly as their bodies changed.

Not only did the fear of injury act as a barrier to certain forms of physical activity (especially sport), but two women also spoke about pre-pregnancy injuries, and how they worried that these previous injuries would return due to the combination of a changing body, loose ligaments and pressure on joints. These two women stopped engaging in their previously preferred activities due to this fear, and planned on resuming them once their baby was born. Heather expressed dismay over having to stop circus art as soon as she found out she was pregnant due to its risks and potential for injury. She also stopped coaching gymnastics partway

through her pregnancy, as she felt off balance and was scared to fall, especially when she had to do demonstrations (i.e. on the bars):

Circus arts... I did handstands more than tumbling and human pyramids, a bit of trapeze and mainly tissue, like the big cloth that hangs from the ceiling...you tie yourself up and fall...it was amazingly fun and miss it horribly...cause you can't hang upside down when you're seven months pregnant (laughingly)...and gradually...I realized there was a few things like positions that I wanted to show my competitive kids [when coaching gymnastics] that I couldn't cause they involved balancing on your stomach...throwing off my balance.

Heather further discussed the importance of being safe with her activities given her history of previous injuries.

As depicted, most women were concerned about the potential for injury, and this often acted as a physical barrier to physical activity. Furthermore, the women perceived greater potential for injury as pregnancy progressed due to their changing bodies.

4.4.2 Pain/Comfort Level

In the last trimester of pregnancy, pain and discomfort due to weight gain caused joint swelling, loosening of the ligaments, and muscle tightness and therefore were perceived as physical barriers to activity. All of the women talked about the experience of pain and discomfort which occurred mostly following physical activity. They had experiences similar to Anne: "I was getting a little sore...my pelvis and my SI joint was a little sore for a day or two

after practices but wasn't that bad and it always felt fine...but I had to stop playing [soccer]".

For some women, this pain resulted in having to change their choice of activity, but for others, it meant that it took longer to recover after activity. Dominique explained her experience:

I got a lot of pain just right at my pubic bone...I've seen physio and stuff for it... but it's like my muscles around it so I think that with the laxity from the hormones...and the lack of core muscles now...I don't have that stability anymore and so that's been something I've kind of been dealing with...it's gotten a lot better...I do a lot of stretching, I have some exercises from my physio, I started swimming instead [of running].

Regardless of which activities they chose, the time it took to recover from those activities was prolonged as pregnancy progressed. They also reported experiencing new aches and pains as pregnancy progressed. Kaitlin explained that as a result of this pain, she engaged in additional stretching and exercises which she received from an osteopath who was treating her.

Furthermore, she explained that when she would start to feel pain, she would find alternative exercises.

For all of the women, pain and discomfort were experienced due to changing symptoms as pregnancy progressed, but this did not deter them from engaging in activity. Instead, it altered their choice of activities, as well as the intensity and persistence with which they engaged in these activities.

4.4.3 *Negotiating the Physical Barriers to Physical Activity*

During the first half of pregnancy, the participants identified physical barriers to physical activity such as body concerns, fatigue, fear of miscarriage/experience of a previous miscarriage, as well as nausea and/or vomiting. As pregnancy progressed and as their bodies changed, new physical barriers such as injury and/or injury potential, as well as pain/comfort level emerged which prevented the participants from engaging in the same types of physical activity as they did pre-pregnancy, and during the first part of their pregnancy. Additionally, of the six women who reported engaging in sport pre-pregnancy, four completely stopped engaging in these activities throughout their entire pregnancy due to the fear of miscarriage and injury. Therefore, for these nine women, the physical barriers and facilitators to physical activity changed consistently as pregnancy progressed.

During the first and early second trimesters, the participants still tried to “hold onto” their pre-pregnancy physical activity levels because of the importance of these behaviours. As pregnancy progressed, the majority of the participants talked about having to change their expectations because they could no longer engage in the amount of activity they wished to due to these physical barriers. The participants then talked about “letting go” and accepting their own individual abilities and limitations. Hilary explained:

Now it's just, ok, well there's a full on baby inside me and that kind of trumps my own...well I feel a little bit flabby in my arms now compared to before....[but] it's like the home stretch...I think I've sort of come to terms with it....I don't know when it kind of switches...my job right now is to be healthy, not super fit.

As explained by this participant, later during pregnancy, the physical factors affecting motivation for exercise were no longer perceived as debilitating as they were earlier during pregnancy.

Maria had a similar experience:

I think pregnancy is really about modifying your expectations. I think the more expectations you have, the more that those expectations are not to be met...my expectation was that I would be able to run through my whole pregnancy and I had to stop...I think it's better to try and not have a lot of expectations about the outcome cause you're really not in control when you're pregnant.

As explained by these two participants, as pregnancy progressed, the physical factors affecting motivation for exercise changed, and physical activity was perceived as less important than during the early months of pregnancy.

4.5 'It's just so Confusing': Information Sources

The nine women described choosing different activities and engaging in them with less intensity and for shorter periods of time as pregnancy progressed due to certain informational factors. Themes discussed were the influence of experts such as fitness trainers (seven) and health care professionals (nine), as well as where the women received information regarding pregnancy such as the internet (seven), pregnancy related books (six), published guidelines for exercise during pregnancy (four), and the weather (three). In contrast to the physical barriers and

facilitators which changed as pregnancy progressed, the nine women expressed no change in these informational and motivational factors as pregnancy progressed.

4.5.1 Influence of Experts

All of the women talked about the health care professionals they were seeing for prenatal care throughout their pregnancy. Five women saw a midwife, two a general practitioner, and two an obstetrician/gynecologist. The majority of the participants (seven) did not receive detailed information regarding physical activity guidelines from their health care professionals and when they did receive this information, it was vague, with advice such as “if you were active before, keeping doing what you were doing” and “listen to your body”. The women attributed the relaxed nature of this advice to the fact that they were experiencing a healthy/low risk pregnancy. For example, Dominique asked her midwife if she could continue road biking and described her midwife’s response:

She was like...if you had not been riding a bike for years and years and decided to jump on your bike and ride a hundred and twenty kilometers I probably wouldn’t advise to do that but because this [is] normal for you...feel good about doing that.

Despite this laissez-faire attitude on behalf of most of the women’s health care professionals, two participants did receive words of caution such as “be careful not to get your heart rate up”. These two women described loosely listening to this advice and as Samantha explained, instead “listened to [their body]”:

Well she just told me to wear a heart rate monitor and not get my heart rate above a hundred and forty...I don't think we agree on that...I just don't think it's a problem...because I'm not looking for her approval. She obviously has her opinion and...a million other people have different ones and she's just going by the rules.

Interestingly, the advice women received from their health care professionals did not change throughout the course of pregnancy. Most of the participants talked about physical activity with their health care professionals at the beginning of their pregnancy, and these conversations were no longer present during appointments as their pregnancy progressed.

Some women also expressed concerned that the guidelines for physical activity during pregnancy given by their health care professionals were not very clear, leaving them frustrated and confused as to knowing the difference between safe versus unsafe practices. Kristine explained her concern:

The reason I'm part of this study is because, there's not really very good research out there in terms of exercise and pregnancy. You go on the internet and...I see a midwife...and I think there's this old school mentality about exercise and pregnancy. I see three midwives and the younger one would say: 'do whatever you did before but less intense...as long as you're feeling ok'. But the older ones are like: 'oh but take it easy, like don't run over a half an hour'...they're putting limitations on it. There's just this mass confusion...should I run for a half an hour, should I run for forty five minutes, is there a different, like I feel good, you know?

This participant expressed dismay over the advice she received from her midwives, as she felt it to be confusing and unclear. She further explained that as her pregnancy progressed, she decided to start “listening to her body” instead of trying to tease out the conflicting advice she was receiving from her midwives, as well as from the internet.

For the one participant who was experiencing a high-risk pregnancy due to complications mid pregnancy, no detailed information regarding physical activity was received from her obstetrician/gynecologist. This participant was not particularly distressed by this lack of information, as she was unable to engage in much activity due to her multiple pregnancy symptoms.

Not only did the women talk about the advice they received from their health care professionals, but five of the women also discussed the advice they received from fitness instructors. In most cases, these participants had confidence in their instructor’s knowledge and competency. One participant questioned the guidance she was receiving from her instructors, but kept training regardless. Samantha explained: “Yeah I finally did it cause I’m in quite a rigorous routine...we’re still working out pretty hard...it’s guided by trainers...they push hard at that gym and they’re pushy...I trust them...but I also have an opinion”. Some women also mentioned that their trainers were mothers which increased their legitimacy and credibility as prenatal instructors. Heather explained her experience in a prenatal fitness class: “She’s a prenatal instructor, she knows what she’s doing, she’s had two kids. If ever we say something hurts she says: ‘ok, you need to stop’”.

The nine participants spoke about the prenatal care they were receiving, and the advice they were getting from both their health care professionals, and fitness instructors. Surprisingly, most of the women did not receive extensive information from their health care professionals,

and when they did, did not necessarily agree with it. They did, however, listen to their fitness instructors and had confidence in their knowledge and competency.

4.5.2 *Information Sources*

All of the women in the study talked about where they received their information about physical activity during pregnancy. They reported reading guidelines about exercise on the internet or in pregnancy specific books. Most (eight) of the women mentioned that the guidelines for exercise during pregnancy were difficult to find, often vague, and unrealistic to follow. Three of the women further emphasized the cautious nature of the published guidelines and instead of following them, stressed the importance of ‘listening to their body’. They further described this as meaning they were self-aware and that their bodies would tell them if they were being too vigorous with their activities. When asked if she had come across any recommendations for exercise online, Kristine responded:

Yeah...it’s kind of all over the place. It’s like: ‘oh monitor your heart rate’ but some of them are like you know, ‘do whatever you [used to]’...but everyone recommends that it’s good. I haven’t read anything on the internet that says don’t unless you have other issues...but in terms of how they limit it, it varies.

Kristine was then asked if she followed this online advice to which she replied: “not really” (laughingly). Heather also described her experience with pregnancy information online as she was a member of a pregnancy-specific online forum where mothers-to-be convened to share past and present experiences. She explained that if she ever had any questions about exercise at any

point throughout her pregnancy, she would feel comfortable posting them on this forum as she would trust the information she was receiving.

Most of the participants also received pregnancy-related books from friends and/or family members. Despite being informative, these books did not contain much information regarding physical activity; therefore, the women reported relying on the internet as their primary venue to gain activity-related knowledge.

4.5.3 *Weather*

Some participants (three) talked about the weather and the fact that they were pregnant during the winter. For these participants, winter was always a time (pregnant or not) when they were less physically active due to the nature of their habitual physical activities. Kaitlin explained:

I want to find a place where it lists everything you can possibly do especially in Vancouver in the freakin winter time...cause in the summer there's a thousand things you can do but in the winter, what the heck is out there...what do you do?

As a result of this barrier, the choice of activity during pregnancy might have been different if one was pregnant during the summer months. Since most of the women were interviewed at both time points during the winter months, the effect of the weather on physical activity behaviours did not change over time.

4.6 'I need to be Healthy for me and the Baby Now': Motivational Factors

The women also discussed the facilitators to physical activity as pregnancy progressed. They all described that activity was an important part of their lives, and kept engaging in activity throughout their pregnancy to help with labour (five), stay in shape (nine), be healthy for themselves and the baby (nine), and for stress relief (six).

4.6.1 *Exercise to Help with Labour*

As their pregnancy progressed, six women enrolled in prenatal fitness classes such as aquafit, prenatal strength training and cardio, and prenatal yoga. They joined these classes to socialize with other mothers-to-be, and because they offered alternative exercises to those in regular fitness classes which were becoming uncomfortable. For five women, prenatal classes not only benefited them in terms of activity, but also helped them prepare for labour as some of the exercises were labour specific (i.e. breathing, pelvic floor exercises). Anne joined a prenatal yoga class which she attended once a week. During these classes, she engaged in strength training, labour-specific breathing, and pelvic floor exercises.

It's actually a lot tougher than I thought it was gonna be which is good... we'll do wall squats and stomach stuff sometimes and we'll do warrior type poses that have one leg bent and the other one straight and so we'll hold that for a minute or so...we do some relaxation and breathing type stuff too...it's more difficult than I was expecting.

Anne had a pleasant experience and enjoyed prenatal yoga; it became part of her weekly routine throughout her whole pregnancy.

In contrast, Hilary had a different experience as she felt that prenatal yoga would mean that she was “letting go” because it was not as difficult as regular yoga. Despite her reluctance to take prenatal yoga classes, she enrolled in a class and explained enjoying it more as her body changed since the modified exercises became helpful:

I was curious as to what they do in that sort of class versus other ones I mean I always adjust my own workout but I was curious so I went...I kind of sucked it up and I went because I didn't wanna be in a prenatal class...but it was good in part for stretching and relaxation. Definitely not physically demanding the way I like yoga. The person who teaches it is a doula. So it's actually quite a good, it's a great class...there's a purpose to it.

As apparent in her description, Hilary experienced some tension as she did not want to enroll in prenatal yoga as she thought it would not give her a “proper” workout, but enjoyed it as her pregnancy progressed as it would help her in late pregnancy and during labour.

As depicted in the women's personal accounts, prenatal classes were beneficial as they helped them prepare for labour, but for one woman, difficult to attend as she felt that she was “letting go” and not being as intense as she used to be. Some women were forced to change their expectations because they could no longer engage in the same activities as pre- and early pregnancy. They therefore negotiated with themselves, accepting that this was a temporary process, subsequently coming to terms with their own individual abilities and limitations. This

had an impact on the choice and intensity of their activity behaviours, therefore impacting motivation for physical activity during pregnancy.

4.6.2 *Staying in Shape vs. Being Healthy*

All participants discussed a shift in their perceptions of the importance of exercise as pregnancy progressed. They explained that they were no longer only being active for themselves and to stay in shape, but also for the health of their own baby. Once again, the participants spoke about shifting their expectations as pregnancy progressed, as they were no longer trying to achieve their own fitness or sport goals, but were now responsible for another human being. For two participants, this perception shift was difficult as they were forced to concomitantly come to terms with the resulting body changes and declining fitness levels brought on by pregnancy.

Hilary explained this tension:

Now there's a full on baby inside me and...that kind of trumps my own...ok well I feel a little bit flabby in my arms now compared to before or something...but I think I've sort of come to terms with it...it kind of switches.

Hilary further explained that during the beginning of her pregnancy, the changes were difficult, but as pregnancy progressed, she realized that these changes were temporary, and that she would be able to resume her usual fitness routine post pregnancy.

Like the seven other participants, Maria explained how she embraced the body changes she was experiencing by appreciating how her body was adapting to pregnancy. She had

planned to exercise throughout her pregnancy, but this was not possible due to some health complications and extreme nausea.

All but two women were very accepting of the changes they had to make to their choice, intensity, and persistence of physical activity in order to be healthy not only for themselves, but also for their baby. For the other two women, these changes were a bit more difficult, but were increasingly accepted as pregnancy progressed. Pre-, as well as early pregnancy, the importance of staying in shape was prominent, and as pregnancy progressed, the importance was placed on health and the health of the baby.

4.6.3 *Stress Relief*

For six participants, physical activity pre-pregnancy was used as a coping mechanism to deal with stressors, and remained a way to relieve feelings of stress throughout the entire course of pregnancy. Kristine explained her experience:

If I feel stressed, I can go out and cope with it by getting exercise...it's just a way that I deal with pressure, stress, or you know, whatever the ups and downs in life, right? I feel like having more hormones...things bother me more...I get irritated a bit more so again it's a good way to cope and it's almost like it lets you reset, you can come back and you're reset, you can like continue with your life (laughingly).

Despite the fact that the choice, intensity, and persistence of physical activity behaviours changed as pregnancy progressed, they continued to be used as a means by which to cope with

stress. The women explained that this was a benefit that they received from physical activity before they became pregnant, and that it did not change with pregnancy.

4.6.4 The Impact of Informational and Motivational Factors over Time

As pregnancy progressed, the informational and motivational facilitators to physical activity remained the same. While physical activity to stay in shape and for stress relief were both important throughout the course of pregnancy, the importance of staying healthy for themselves, for their baby, and to help with labour became increasingly prominent from mid to late pregnancy.

4.7 Social Factors

All of the women described the influence of social factors on their physical activity attitudes, how they influenced their activity choices, as well as the intensity and persistence at which they engaged in these activities. Themes discussed were the impact of social support from partners, family members and friends, and activity as a means of socializing with others.

4.8 ‘I Don’t Really Care What They Think’: Social Support for Physical Activity

When asked to describe the support they received for their activity behaviours now that they were pregnant, all participants talked about the positive support from their partners (nine),

and some participants discussed the positive and negative support they received from family and friends (seven).

4.8.1 Partner

All participants talked about their partners as encouraging of their physical activity behaviours pre-pregnancy, as well as throughout the course of pregnancy. This was often attributed to the fact that their partners were all physically active themselves (either with exercise or in sport).

For the majority of the women (seven), the nature of the support they received for physical activity from their partners remained positive, but had changed since becoming pregnant. The women spoke about how they used to engage in activity with their partners, but had stopped doing so since becoming pregnant because their choice, intensity, and persistence of activity behaviours had changed. These women emphasized that they could no longer “keep up” with their partners, but that they remained supportive of their behaviours by encouraging them to be active. Kristine explained how she no longer trained with her partner now that she was pregnant:

We used to [train together]. I don't train with anybody right now (laughingly). When I train with somebody I tend to, it pushes me...so I don't want that to happen. If I need to run, if I'm running and I feel like walking for two minutes I wanna be able to do that. So I don't train with anybody right now...and my partner...I just feel like I'm slow...I don't wanna slow him down because of me.

For two women, their partners encouraged them to be more active, especially as pregnancy progressed as they felt that it was important for their health and the health of the baby.

Additionally, one participant's partner wanted her to remain physically active in order to stay in shape, especially after the baby was born. Julie explained her partner's position when asked how he felt about her exercise behaviours:

He's very motivating. He wants me to be in shape... after the baby's born he really wants me to make sure that I go to the gym and get back in shape. Just because we have a baby, he doesn't want it to affect our lives...we're both very active...when he motivates me it helps me get out there and do things.

Three of these women also received support and encouragement to be increasingly physically active, and this was met with positive responses. As pregnancy progressed, the support the participants received from their partners remained the same, even as the choice, intensity, and persistence of their behaviours changed.

4.8.2 Family and Friends

Despite receiving positive support from their partners, some women had different experiences with their family and friends. Five women emphasized that their family members and friends were not always supportive of their exercise behaviours, and would make this clear by telling them that pregnancy is a time to rest and not a time to be rigorous with physical

activity. These women expressed annoyance and frustration with this lack of support, but also recounted that it did not affect their activity behaviours.

For Kaitlin, her family and friends in Mexico were not supportive of her exercise behaviours, which she attributed to cultural values and norms: “My family at home and most of my Latino friends, they’re all like: ‘don’t work out, not for a while’...cause they know I do workout quite a bit. They kinda wanna pull me back and me to slow down”.

Kristine had a similar experience with her mother, but attributed her mother’s points of view to a generational perspective and a difference in opinion due to age:

My mom’s really old school. She always thought I exercised too much. And now it’s like: ‘oh you have to be calm with the baby and be relaxed all the time’. I’m like well, I’m not a stay at home mom and you know, I work, and, I need to exercise you know things have changed...when she was pregnant with me she was a stay at home mom so things were pretty laid back...it’s a bit different in my situation and sometimes I need to remind her of that...pregnant women these days...have things to do other than outside of the house (laughingly).

Two other participants explained that the support they received from their family and friends was inconsequential, as they did not really receive any words of advice from them, but knew that they were supportive regardless of their silence on the issue.

4.8.3 *The Impact of Social Support*

Most of the participants perceived the support from their partners to be positive. In contrast, they received partial support from their family and friends but were not convinced that these attitudes affected their choice, intensity, and persistence of their activity behaviours. This perceived positive and as well as occasional negative support did not change over time. Some women (three) talked about their partners suggesting that they might be more cautious with their activities, but their partners remained supportive and in favour of their behaviours regardless of these suggestions.

4.9 Socializing

Another social factor having an impact on motivation for exercise was socializing during activity. Six women enjoyed engaging in activity because it allowed them to interact with other individuals who were also pregnant. These women took prenatal exercise classes such as prenatal aquafit, prenatal strength training and cardio, as well as prenatal yoga. During and after these classes, they talked with other women about pregnancy related issues which they did not discuss on a daily basis with other friends, family, and coworkers. Maria explained her experience with prenatal yoga: “I do a prenatal yoga class... a lot of women talk...we share information in the class and people’ll be like I’m getting this, does anyone have any suggestions or I’m getting this and you know. It’s very interesting”. For women who had experiences like Maria, the information and companionship they received from their classmates was perceived to be greatly beneficial throughout the course of pregnancy.

Despite being able to socialize during prenatal exercise classes, some women (three) missed their previous activities and sports because they were no longer seeing their friends and did not have many other opportunities to socialize with others. Kaitlin explained how she missed volleyball:

What do I miss? Friendships. I think that the coolest part about volleyball is that you have a group of people that you enjoy being with. And it's just doing the wins and loosing together as a team you're kind of a part of it. I still go to the reunions and happy fun times or dancing that they do afterwards...so I'm still part of that but I think what I miss the most is, yeah, it's friends. Like not seeing them that often or you know feeling like you're separate from them now cause they don't have kids, none of them (laughingly).

When they became pregnant, these women disengaged from their pre-pregnancy sports and lost some of their social companionship. As pregnancy progressed, some women started to seek activities where they could socialize with others. As a result, socializing was definitely an important determinant of activity choice throughout the course of pregnancy. Since prenatal exercise classes were perceived by the participants as less rigorous, the choice of this activity also affected the intensity and persistence of these behaviours over time.

4.10 ‘Why Should I be the One Giving Up my Career?’: Age and Identity

The participants ranged in age from 24 years to 41 years old, with a mean age of 33 years. Three important themes revolving the issue of one’s age during pregnancy emerged from the women’s personal stories: concern with maternity leave, the importance of physical activity in one’s life over time, and the importance of physical activity post-partum. These factors were all perceived to vary with age, and to subsequently affect one’s motivation for activity.

4.10.1 Concern with Maternity Leave

Six women (all over the age of 33) perceived themselves to be established in their careers; four were self-employed, and two worked in finance. The other three women were younger (27 years of age or younger) and perceived themselves to be in the beginning stages of their careers. The involvement in their careers, and resultant stressors associated with their work affected the women’s choice, intensity, and persistence of physical activity in different ways. Some women chose to use physical activity as a coping mechanism to deal with work-related stressors, whereas other women felt that the added pressure and stressors of pregnancy took time away from the ability to be as physically active as they wished to be.

The six women who self-reported being established in their careers were worried about what would happen once they gave birth. For the two women who worked in finance, even though they were legally entitled to maternity leave, they worried that this time away would jeopardize their future in their respective companies as they would be missing out on certain

career enhancing opportunities while at home with their newborn. Kristine expressed dismay over having to be replaced during her maternity leave:

Dealing with replacing me on mat leave is a bit stressful. They're trying to hire somebody to replace me but also in addition they'll replace me almost on a permanent basis because when I come back like I'll do other things...which is good...I should be happy about [it], but on the other hand it's just like am I gonna have a job when I get back? I know that they have to give me a job when I come back but there's all this stuff in the back of my mind which is causing stress you know about like what is my career gonna look like after I come back versus what I'm doing now?

Kristine further explained using physical activity as a means to cope with this added stress.

For three of the women who were self-employed, stress resulted from the unknown: what would happen once the baby was born, would they be able to keep working enough to provide for themselves and their family, and would their career paths change? Maria explained that once she gave birth, she would have to make accommodations in order to keep working:

I don't really know how it's gonna work. I own my own company. I run my own business...I'll just take the kid everywhere with me until it's not practical. And then I need child care and, and then I'll get help when I'm shooting and on set and I'll have someone who can help me. And maybe that's totally unrealistic right?

Maria also explained that she did not perceive herself to be the type of person who would stay at home with her child. Therefore, she wanted to keep working after giving birth. As a result of these added stressors and demands, these three women explained that they did not know what to expect to be able to do in terms of physical activity once their babies were born as they did not know how much time they would have, and how these changes would affect their usual physical activity regimens.

In contrast, Kaitlin had a different experience as she had made plans to take time off work once the baby was born. She would keep going with her business, but would take on fewer clients so that she could be more flexible to spend time with her newborn child:

I'm hoping that I can still do a couple of hours after birth just because I enjoy what I do, like I really like it and it keeps me busy...well not that the baby's not gonna keep me busy but it's a different kind of busy. Since I was twenty I wanted to have a business so I could have kids and be at home working, you know? So I don't see myself ever stopping it's just more like trying to figure out how can I manage and develop it as I do these other things. I set myself up with other companies and they pass me on assigned work which is what I do best and quickly. So I just do the site and then sent it to them...[the projects] just need to be smaller so they don't have to be like ahhh [with emphasis] so I don't have to be going crazy with everything.

For Kaitlin, it was important to keep working once the baby was born, but she accepted that her situation was going to change due to the new addition to their family. These changes were met with excitement. Furthermore, she did not anticipate any changes to her activity regimen once the baby was born, as she felt that her flexibility would allow her to remain active.

The three younger women had a different experience as they did not seem overly concerned with their careers and what would happen once their babies were born. Two of these women focused more on the fact that their lives would change at home with a baby, not so much at work. Julie explained that she would first be going on vacation, then maternity leave:

I'm actually going on vacation March twenty first so that's my last day of work. And then my vacation ends April fifteenth and then the baby's due April eighteenth so I'll go on maternity leave on April fifteenth...so it'll be about thirty six weeks.

Julie did not further elaborate on how she envisioned the transition back to work once her maternity leave was over. She expressed simply being excited to be on maternity leave. On the other hand, Heather had a different experience as she was not working at the time of the second interview, and would not be leaving a certain work position. As a result, she was eager for the baby to be born:

I'm ready. I'm not really working so I spend most of my days thinking about the baby and... well I mean I've wanted kids my whole life but realistically as a married couple we've wanted kids for a few years. We just had to wait for good timing and it's so close now that I just want it now (laughing) I don't [just] want it to be soon.

For these younger women, their attitude regarding physical activity was similar to their attitude regarding work post pregnancy. They expected to resume their pre-pregnancy physical activity when possible, but these expectations did not seem to create any concern. As a result, work-

related concerns seemed to mostly affect the older rather than the younger women's motivation for physical activity.

As apparent in the participant's accounts of their experiences, the older women who had established careers conveyed increased dismay over the issue of work post-partum whereas the younger women expressed more excitement about being at home with their newborns. For these women, the more rooted one was in their career identity, the more tension was present in their stories, explaining that the post-partum period was worrisome. This increased tension had an impact on the participant's physical activity behaviours. Some used activity as a means of coping with these added stressors and others engaged in less activity as a result of the added stressor. Furthermore, these concerns increased over time, and were most prevalent in the third trimester of pregnancy.

4.10.2 The Impact of Age on Post-Partum Expectations

The three younger women placed importance on physical activity, but emphasized that they exercised for their health and the health of their baby. In contrast, the older women all self-identified as exercisers, not only placing added importance on their activity behaviours for their health and the health of their baby, but also to help post labour as they perceived that "bouncing back" from pregnancy would be difficult due to their age. Hilary explained:

The interesting thing for me...I wonder if being a certain age impacts how you try to be during your pregnancy like, for example, if I was twenty, I can get in shape pretty quickly whereas you wonder like ok well, it's harder when you're older. And you're gonna have to work harder at it to just feel fit again, like not even the weight thing but just getting

back up to like a certain caliber right. So I sort of wonder if I would have been the same way ten years ago or not.

The two oldest participants both mentioned that they felt the need to exercise more and work harder than other women as their bodies would not recover as quickly as if they had been pregnant when they were younger. Both wondered how their bodies would have reacted differently if they had been pregnant earlier.

For the four other women, activity post-labour would remain important, but they did not have any expectations as they did not know if and when it would be feasible to resume their pre-pregnancy activity. Dominique explained how she perceived the post-partum period to be ambiguous and approached it with uncertainty:

I hope to be active after I give birth. I don't know what that process will be like and I don't know how all that will turn out...I definitely hope to be able to be out a lot and probably just walking...Yeah I have no idea what the baby weight losing process will be like.

Despite this uncertainty, these participants remained confident that they would resume some form of physical activity once their baby was born.

The three younger women had similar post-partum expectations in terms of physical activity, but placed less importance on resuming their pre-pregnancy activities regimes, and more importance on getting their pre-pregnancy bodies back. Heather explained:

Once the baby's been born and I still have those twenty pounds...cause you look about six months pregnant for normally a couple weeks. But I'm kind of hoping at that point I'll just be focused on the kid and I won't really care. It's funny some people just don't realize you're still in maternity clothes for a good while after having the kid...you can't just go on putting your normal clothes anymore. But again, I'm hoping I won't really care like it'll come off, it'll be off by May, I'm very determined. By May I'll fit back into everything.

As depicted here, Heather experienced some tension between wanting to not worry about her body post-pregnancy, while also wanting to get her pre-pregnancy body back.

For all of the women, post-labour expectations played a role in the negotiation of exercise behaviours throughout the course of pregnancy. For some women, knowing that it would be difficult to “bounce back” from pregnancy motivated them to be active throughout the course of pregnancy. For others, post-labour expectations were used as a way to negotiate the fact that they were engaging in less activity throughout the course of pregnancy than pre-pregnancy. For these women, the pregnancy period was perceived as a time where lower levels of physical activity were acceptable due to its temporary nature. Pre-pregnancy exercise levels were partially expected to be resumed post-pregnancy.

4.10.3 Concluding Remarks

Despite not directly being asked about their feelings surrounding age, pregnancy and physical activity behaviours, the women alluded to the fact that one's age, one's career identity,

as well as one's identity as an exerciser impacted their activity attitudes and subsequent behaviours.

Chapter 5: Discussion

The existing theoretical and empirical research on physical activity during pregnancy has largely focused on examining factors impacting motivation for activity at one time point, and/or post-partum (Cramp & Bray, 2009; Hinton & Olson, 2001; Poudevigne & O'Connor, 2006; Ussher et al., 2007). In this thesis I have described how nine women perceived their experiences with physical activity throughout the course of pregnancy. The findings from this research make a contribution to this body of literature as women's experiences with physical activity were examined at two different time points, which allowed for the examination of change over time. This study was conceptualized to examine the factors affecting expecting women's motivation for physical activity, and when describing their experiences, the participants discussed a multitude of topics that were perceived to be underlying factors affecting their physical activity engagement as pregnancy progressed. Furthermore, these findings contribute to the existing literature focusing on the barriers and intentions to engage in activity, by highlighting that additional elements such as body concerns, fitness instructors, health care professionals, the media, as well as the transition to motherhood also impact motivation for activity throughout the course of pregnancy.

The most prominent theme emerging from the women's personal accounts was the impact of physical barriers to activity throughout the course of pregnancy. This finding is consistent with previous research focusing on self-efficacy for physical activity during pregnancy (Cramp & Bray, 2009; Hinton & Olson, 2001; Pereira et al., 2007; Poudevigne & O'Connor, 2006). Interestingly, when discussing barriers, all participants spoke about how they negotiated their changing bodies as pregnancy progressed. During early pregnancy, the majority of women

talked about “feeling fat” as opposed to looking pregnant, which made it difficult to find appropriate clothing to fit their changing bodies, and thus provoked feelings of self-consciousness. This was further exacerbated since they could not yet reveal their pregnancy to others. Additionally, these body changes forced questioning of the “right” type of activity in which to engage, as pregnancy was perceived as finally becoming “real” and the health of the baby was now at stake. As pregnancy progressed, these body image concerns were replaced by differing concerns such as the experience of pain and discomfort, and resulted in the difficulty to engage in certain types of activities. Due to these concerns, the women made modifications to their practices, often engaging in less vigorous activities for shorter periods of time. These themes surrounding body concerns were perceived to impact motivation for activity, which is an interesting finding given that body concerns have not often been listed as a physical barrier in the extant literature focusing on motivation for activity during pregnancy.

Fatigue, nausea, and vomiting were also experienced by the majority of participants in early pregnancy, but only impacted the intensity of activity behaviours, and did not influence the type or persistence of activity. These themes stemming from the participants’ stories were consistent with previous research suggesting that the barriers (or control beliefs) to physical activity during pregnancy were often perceived to be physical limitations such as nausea and vomiting, tiredness/fatigue, and weight gain (Hausenblas et al., 2008; O’Brien, 1990; O’Brien & Naber, 1992; Poudevigne & O’Connor, 2006). The findings from this qualitative inquiry therefore help support and strengthen previous quantitative findings related to motivation for activity during pregnancy. In contrast, findings from this previous empirical and theoretical research suggest that time constraints are one of the predominant barriers to physical activity throughout the course of pregnancy (Cramp & Bray, 2009). This body of research also suggests

that expecting women engage in exercise to increase energy levels during pregnancy (Poudevigne & O'Connor, 2006). Interestingly, these were not prevalent findings in this study as the women did not talk about them when describing their experiences with physical activity throughout the course of pregnancy.

For some of the participants, the experience of a previous miscarriage and the fear of miscarrying for a second time provoked questioning regarding the safety of activity behaviours in early pregnancy, but this fear dissipated as pregnancy progressed. Interestingly, the extant physiological research focusing on pregnancy shows that in most cases, physical activity is not the cause of miscarriage (Artal & O'Toole, 2003; Wolfe & Davies, 2003). Despite this evidence, some participants in this study who had had a previous miscarriage feared that physical activity could cause them to miscarry once again. This had an impact on their physical activity attitudes and subsequent behaviours which is consistent with previous research findings suggesting that health concerns can impact physical activity related attitudes and behaviours during pregnancy (Thornton et al., 2006). These findings also add to the body of knowledge focusing on barriers to activity suggesting that additional physical factors such as the fear of miscarriage may impact activity attitudes and behaviours during pregnancy.

In mid to late pregnancy, the physical barriers to activity changed and the potential for injury as well as pain and discomfort became the prominent barriers. This was due to the women's changing bodies, as weight gain and hormonal changes caused joint laxity and extra pressure on joints, often leading to difficulties with certain activities. As a result and regardless of which activities they chose, recovery time after activity was prolonged. The women also experienced added aches and pains as they progressed into the late stages of pregnancy, which

further affected their choice of activities, as well as their intensity and persistence with these activities.

The potential for injury, pain, and discomfort altered the choice, intensity, and persistence of the participants' activities, but did not completely deter them from engaging in activity. These physical barriers in late pregnancy are consistent with previous research suggesting that an increase in hormones (progesterone and relaxin) leads to laxity of the joints and pelvis as pregnancy progresses (Wolfe & Davies, 2003). This joint laxity can increase the risk for injury and can also cause pain which sometimes makes engagement in physical activity more difficult (Poudevigne & O'Connor, 2006). The findings from this research therefore make an important contribution as they not only help support previous findings focusing on the barriers to physical activity at one time point during pregnancy, but also focus on how these physical barriers change over time.

In addition, most of the participants who engaged in sport before pregnancy stopped these activities either when they found out they were pregnant or later during pregnancy due to the fear of miscarriage and injury. Some of these participants were told to stop sports by their health care professionals who were also concerned for their safety. As pregnancy progressed, some participants also felt that engaging in sport would be too difficult due to their changing bodies as certain movements would have been awkward, making them feel off balance and unsafe. Although these participants were unhappy about having to give up these sporting activities, none resumed these activities during their pregnancies, but planned to do so post-partum. This contributes to the existing literature which has mostly focused on the barriers to exercise by highlighting that the cessation of sport due to the fear of miscarriage and injury may also be a determinant of activity practices during pregnancy.

In contrast to the physical barriers that continuously changed as pregnancy progresses, the women also spoke about some informational and motivational factors affecting activity, but these remained stable throughout the course of pregnancy. All participants spoke about advice they received from their health care professionals, as well as from their fitness instructors regarding their physical activity behaviours. Most women did not receive extensive information from their health care professionals and did not necessarily follow the guidelines they did receive. When their health care professionals followed the published guidelines for exercise during pregnancy by the Society of Obstetricians and Gynecologists of Canada (SOGC) and the Canadian Society for Exercise Physiology (CSEP) (Wolfe & Davies, 2003), the participants would often disregard them, instead choosing to “listen to their bodies” as they felt that their bodies would give them an indication of what was deemed safe practice. This has important implications since many researchers and governmental bodies (Artal and O’Toole, 2003; Wolfe & Davies, 2003) have focused on developing guidelines for activity during pregnancy. But the insight provided by the participants in this study suggests that these guidelines may not necessarily be used and/or followed. It is important to note that all of the women in this study were highly educated and previously active, identified as exercisers, and were all (but one) experiencing a low-risk pregnancy. These guidelines could prove very useful for other women who have not been previously active, are not very active or do not have extensive knowledge regarding physical activity, or are experiencing a high-risk pregnancy.

Despite not taking advice from their health care professionals, some participants trusted the competency and recommendations of their fitness instructors, even when they were not certified prenatal instructors. No previous research has looked at the impact of fitness instructors on motivation for activity during pregnancy, but these findings suggest that their opinions and

practices may influence the physical and psychological health and well-being of expecting mothers.

Another important environmental barrier to activity for the participants was weather. Since most participants were interviewed during winter months, they reported that the choice of activity may have been different and more vigorous if they had been pregnant during the summer months as there were not as many activity options to choose from at this time. As a result of the timing of the interviews, the impact of weather on activity behaviours did not change for the participants as pregnancy progressed.

Despite the presence of these physical and environmental barriers, the participants reported being motivated to engage in activity throughout the course of pregnancy as it helped them stay in shape, cope with stressors, was good for the health of their baby, and was thought to be beneficial for labour. Specifically, prenatal classes were beneficial as they helped the women prepare for labour. While physical activity to stay in shape and for stress relief were both important throughout the entire course of pregnancy (the women explained that this was a benefit received from physical activity before becoming pregnant, and that it did not change with pregnancy), the importance of staying healthy for themselves, for their baby, and to help with labour became increasingly important in mid to late pregnancy. These findings were consistent with previous quantitative research using the Theory of Planned Behaviour as a framework suggesting that exercise behaviours during pregnancy helped women stay fit, control weight, and improved their moods (Hausenblas et al., 2008).

Findings from this study also suggested that some women were forced to change their expectations related to physical activity because they could no longer engage in the same activities as in pre- and early pregnancy. They therefore negotiated this conflict by accepting

that the changes would be temporary, subsequently coming to terms with their own individual abilities and limitations. This highlights the importance of examining attitudinal and behavioural change as pregnancy progresses since change over time provides insight into the dynamic nature of barriers to physical activity.

Another important informational and motivational factor stemming from the women's personal stories was the impact of the media. Most participants received pregnancy-related books from friends and/or family members. Despite being informative, these books did not contain much information regarding physical activity; therefore, the women relied primarily on the internet as a venue to gain knowledge about appropriate activity practices. Despite being influenced by the internet, the participants did not perceive being influenced by other media avenues such as magazines and/or pregnancy-specific magazine articles. This finding was inconsistent with previous research suggesting that the popular media impacts women's attitudes towards their bodies, and subsequently has an impact on their exercise related attitudes and behaviours (Dworkin & Wachs, 2004; Jette, 2006; Sha & Kirkham, 2009). Despite this inconsistency, the women in this study reported that they did not read or pay attention to media discourses such as popular magazines. Therefore, it could be argued that women who do not read these magazines are subject to different discourses surrounding exercise during pregnancy (for example, the internet). Despite the perception that they were not being influenced by these popular cultural discourses, all participants did feel that they could potentially be influenced by these media messages during the post-partum period as they anticipated feeling added pressure to "get back in shape" after their baby was born.

The impact of social support from partners, friends, and family, as well as the importance of socializing during activity were also prominent themes identified within the women's

accounts. Participants reported receiving positive support from their partners, but only received partial support for their activity behaviours from their friends and family. This perceived support did not change as pregnancy progressed. Despite the support (and lack of support) support received from their friends and family, the participants were not convinced that their loved ones attitudes and behaviours affected their motivation for activity. This finding is inconsistent with previous research suggesting that social support is often a predictor of exercise behaviours during pregnancy (Besser et al., 2002; Hoffman & Hatch, 1996; Thornton et al., 2006) and suggests that other factors (such as physical, informational, and motivational factors) may play a more important role in motivation for activity. Furthermore, the impact of social support on exercise attitudes and behaviours may depend on the source of support and or the value attributed to the provider, or the knowledge of the provider (for example, the fitness instructor vs. the parent).

The need to socialize with others was another factor affecting motivation for activity for these participants. Most women experienced a loss of social companionship when they disengaged from sport to avoid injury and miscarriage. Participants therefore engaged in physical activity classes where they could socialize with others (i.e. prenatal fitness classes). Socializing was thereby an important determinant of activity choice throughout the course of pregnancy. This finding adds to the existing body of empirical research suggesting that motivation for activity is not only impacted by social support from significant others, but also by social support from others who are living similar experiences.

Previous research has suggested that the transition to motherhood impacts women's attitudes towards activity during pregnancy (Devon et al., 2000). For instance, some new mothers place less importance on physical activity as the newborn becomes the ultimate priority

in their lives. Furthermore, with a new child, they have less time to dedicate to recreational pursuits (Devon et al., 2000). Despite not directly being asked about their feelings in relation to the transition to motherhood, some participants alluded to their exercise identities as having an impact on their activity attitudes and subsequent behaviours. These participants felt that physical activity would remain important once the baby was born, but acknowledged that they would have to remain flexible with their expectations, as they did not know what the post-partum period would bring. Furthermore, the older women in the study expressed dismay as they would have to “work harder” in order for their bodies to “bounce back” from pregnancy.

5.1 Strengths and Limitations

An important strength of this study was that the participants were interviewed twice over the course of their pregnancy. This allowed the researcher to build better rapport with the participants, and to clarify and probe when presented with important avenues for discussion. During the second interview, the researcher also re-visited key topics to gain more information regarding topics discussed during the first interview. Lastly, interviews at two time points allowed for the examination of change in women’s experiences over time. The semi-structured interview guide also allowed for some flexibility and probing was used when appropriate which generated rich and in-depth responses.

Secondly, as a 25 year old woman who has never been pregnant, I anticipated difficulty in establishing rapport with some participants. Despite my position as a researcher, all of the participants in the sample were extremely forthcoming with information and most of the women embraced the opportunity to provide as much detail as possible in order to help me understand their perceptions of their experience with pregnancy.

Despite the contribution of these findings, a potential limitation is the small, convenience sample. All of the women were highly educated, predominantly white, and heterosexual. In the future, it will be important to focus research on the experiences of lesbian and bisexual women, individuals of different racial-ethnic groups, as well as with individuals with low income. Secondly, the participants were all previously active women who identified as avid exercisers and/or athletes. Therefore, the experiences of women who were sedentary previous to pregnancy and who began a physical activity program when they became pregnant must be examined as they could differ greatly from that of previously active women given the possible experience with different barriers.

Another potential limitation was that only first time mothers were interviewed. In the future, it will be important to examine the experiences of second, third (etc.) time mothers, as their experiences may also differ from that of first time mothers. Previous research has noted the difficulty of finding second time mothers to participate in research studies as these women report having more time constraints, as well as need to find child care in order to participate in research studies (Cramp & Bray, 2009). This indicates that second, third (etc.) time mothers may experience different barriers to physical activity than women who do not already have children. More research is needed examining these women's stories as different barriers may have long term health and well-being implications. Women experiencing high-risk pregnancies should also be considered, especially given that they would be subject to multiple guidelines and contraindications to physical activity due to the nature of their pregnancies.

Lastly, recruitment of participants in the early stages of pregnancy was difficult since many women did not "identify" as pregnant until late first/early second trimester. As a result, some women were first interviewed later than anticipated during their second trimester and were

therefore asked to retrospectively recall their experiences with physical activity during their first trimester. Memory decay may have occurred as a result of asking the participants to retrospectively recall their experiences. Additionally, two of the women in the sample were interviewed by phone. This was a potential limitation since the establishment of rapport became more difficult with these participants, as non-verbal cues were impossible to perceive.

5.2 Implications

Findings from the conducted research will contribute to the sport, exercise, and health psychology literature pertaining to motivation for physical activity during pregnancy. Specifically, these findings will add to the existing literature by highlighting additional factors affecting the choice, intensity, and persistence of activity behaviours during this time such as body concerns, the influence of experts such as health care professionals and fitness instructors, and the influence of the popular media (i.e. the internet). As activity routines during pregnancy have been found to often predict post-partum activity levels (Wolfe & Davies, 2003), women's experiences during pregnancy are important to consider as they could impact health and well-being not only post-partum, but long term.

These findings could inform future physical activity interventions by showcasing that a multitude of physical, informational, motivational, and social factors impact motivation for activity. It is important to recognize that theoretical models used to inform physical activity interventions may have certain limitations. They may be constrained as they use these model's components as a guide to devise interventions, perhaps omitting or disregarding crucial factors stemming from women's lived experiences (i.e. the fear of miscarriage, socioeconomic status, and culture). Physical activity interventions concerned with improving the physical and mental

health and well-being of expecting women should take women's experiences into consideration, as additional factors which are not present within widely used theoretical models (such as body concerns, the influence of experts, and the impact of the media) may impact motivation for activity during this time.

These findings also have implications for future research, highlighting that demographic factors such as socioeconomic status, education, race and ethnicity, sexual orientation, age, and the nature of one's pregnancy have an impact on the choice, intensity, and persistence of activity behaviours.

Lastly, previous research has focused on social factors as determinants of activity behaviours during pregnancy (Besser et al., 2002; Hoffman & Hatch, 1996; Thornton et al., 2006), but further investigation of these findings is needed as they could contribute to existing theoretical models that have not yet been utilized as frameworks to examine motivation for activity during pregnancy (such as Self-Determination Theory by Deci & Ryan, 2008).

5.3 Future Directions

For the participants in this study, body concerns had an impact on their motivation for physical activity throughout the course of pregnancy. Future research should examine concerns such as the fear of a previous miscarriage, as well as the inability to find appropriate clothing due to "feeling fat but not pregnant", since they have mostly been omitted in the theoretical and empirical sport psychology literature focusing on exercise during pregnancy. These concerns could have an impact on women's body perceptions, and subsequent attitudes and behaviours towards physical activity throughout the course of pregnancy.

Further research is also needed to investigate how health care professionals as well as their patients perceive and utilize 'Exercise during Pregnancy' guidelines (Wolfe & Davies, 2003). Since the extant research has focused on the physiological risks and benefits of exercise during pregnancy, and has therefore focused on publishing updated guidelines for activity during this time, it is important to understand if and how these guidelines are being perceived, as this may have implications for women's health and well-being long-term, as well as how health care professionals promote activity.

Additional insight is needed to determine to what extent fitness instructors impact women's physical activity attitudes and behaviours as this knowledge could impact future guidelines for activity during pregnancy. Furthermore, if fitness instructors are an important source of information for expecting women, interventions could be devised to ensure that these instructors have the necessary tools to advise expecting women on their activity practices. This insight could also provide the fitness training industry with additional information to ensure that trainers, as well as clients, are engaging in safe and beneficial practices.

Future research examining women's attitudes not only throughout the course of pregnancy but also post-partum would prove extremely useful. This would provide additional knowledge regarding women's physical activity attitudes and behaviours, shedding light on the factors impacting women's motivation for activity and how they change over time and during the transition to motherhood.

Further research should also examine the impact of social support on high risk pregnancies in order to determine if the importance of support differs depending on the nature of the pregnancy.

Additionally, although only one of the participants in the sample self-identified as Latina, the themes stemming from this participants' experiences were consistent with previous research suggesting that activity during pregnancy is not always supported by the extended family in Latino culture as pregnancy is seen as a time where women should rest and take care of their health and the health of the baby (Balcazar et al., 2001; Evenson et al., 2002; Hovell et al., 1991; Keefe et al., 1979). Despite the lack of support she received from her extended family, this participant explained that she followed Canadian cultural norms for activity since the Latino cultural norms did not fit her idea of what was appropriate for pregnancy. It is clearly impossible to generalize this finding to the rest of the Latino population, but worth mentioning as future research is needed to examine ethnic-minority women's experiences with physical activity during pregnancy, and how cultural norms impact activity related attitudes and behaviours. Lastly, researchers should further examine the impact of cultural discourses, such as the popular media (i.e. the internet, magazines, newspaper articles, books) not only throughout the course of pregnancy, but post-partum, to determine if and how these discourses impact women's attitudes and subsequent physical activity behaviours once their baby is born.

5.4 Summary

An examination of women's experiences with physical activity throughout the course of pregnancy has shed light on the multitude of factors affecting expecting mothers' motivation for activity, and how they change over time. Since previous research has mostly examined the physiological risks and rewards of activity and the psychological factors contributing to health and well-being, the need to further examine pregnant women's experiences with physical activity

using a holistic approach beyond the biomedical model is apparent. It is not only the choice, intensity, and persistence of activity that impacts motivation for physical activity, but physical, informational, motivational, and social factors also play an integral role in influencing motivation for activity throughout the course of pregnancy.

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Appendices

Appendix A

Interview Schedule

The following questions represent an overarching agenda for the first and second interviews with study participants. The questions will be pursued flexibly and may be altered and added to over time as different themes and patterns emerge in the data.

1. Can you tell me a little bit about yourself?
 - Where were you born?
 - What is your current marital status?
 - Is there anything you would like to ask me before we begin?

Research Question

How do women experience exercise as pregnancy progresses?

Interview Guide

1. Can you tell me about your experiences with exercise before you were pregnant?

Probes:

- What did you like/not like about exercise in the past?
 - Why did you like/not like these types of exercise?
 - What were the perks of exercise for you in the past?
 - What were the downfalls of exercise for you in the past?
2. Can you tell me how you are approaching exercise now that you are pregnant?

Probes:

- What do you like/not like about exercise now?
- What types of exercise do you like/not like now? How is this different from the past, if at all?
- Why do you like/not like these types of exercise?
- What are the perks of exercise for you right now?
- What are the downfalls of exercise for you right now?

- Are these perks/downfalls similar or different from the perks/downfalls of exercise during your first trimester of pregnancy? If so, how are they similar or different?

Research Question

What factors affect the choice, intensity, and persistence of exercise behaviours through the course of pregnancy?

Interview Guide

3. Tell me about your current exercise practices.

Probes:

- What specific things do you do for exercise?
- How often do you exercise?
- With whom, if anyone?
- Where?
- Why do you exercise?
- Have you always been someone who exercised?
- What kinds of exercise did you do before you became pregnant, if anything? If this is different from what you do now, please explain why.
- How is what you are doing now different from the exercise you did before you were pregnant, if at all?

4. Tell me about your current attitudes surrounding exercise.

Probes:

- How important is exercise to you? Why?
- How important has exercise been to you in the past? Why?
- How important is it for you to be active while you are pregnant? Why?
- How active do you plan to be throughout your whole pregnancy? What kind of exercise activities do you plan to engage in as your pregnancy progresses, if any?
- Do you have any concerns about being physically active now or in the future?
- What, if anything, may prevent/or enable you from participating in more physical activity right now?
- What, if anything, may prevent/or enable you from participating in physical activity during the first trimester of your pregnancy?

- Are there similarities between what affects your ability to engage in physical activity right now versus during the first trimester of your pregnancy? If so, could you tell me about them?
- Are there differences between what affects your ability to engage in physical activity right now versus during the first trimester of your pregnancy? If so, could you tell me about them?

5. How do the important people in your life feel about your pregnancy exercise habits?

Probes:

- What kinds of things do they say about your exercise habits during pregnancy, if anything?
- What kinds of things do they suggest for you in terms of exercise, if anything?
- How active is/are your partner, friends, family members, etc.?
- How do their exercise habits influence you, if at all?
- Who would you say currently influences your exercise habits the most? How? Why?
- Who has influenced you the most in the past? How? Why?
- Is there anything else you would like to add about what or who influences your physical activity experiences?

6. Where and from whom do you get your information regarding physical activity during pregnancy?

Probes:

- Could you tell me more about these sources of information?
- Which of these sources influences you the most? How? Why?

7. How would you describe your background, ethnic heritage, or culture?

Probes:

- What values (in terms of physical activity, pregnancy), if any, are tied to this background, ethnicity, or culture?

8. Who is providing you with medical care and assistance throughout your pregnancy? (For example, a family physician, an obstetrician, a midwife, a doula, etc...)

Probes:

- What has/have this person/these individuals told you about exercise during pregnancy?
- What have they advised you to do in terms of exercise throughout your pregnancy?
- How have they influenced your exercise habits and practices, if at all?

Appendix B



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Exercise Behaviours during Pregnancy

Initial Contact Letter

Peter Crocker, PhD (Principal Investigator)
School of Human Kinetics
University of British Columbia

Erica Bennett, BA
School of Human Kinetics
University of British Columbia

WHO IS DOING THE RESEARCH?

The principal investigator for this study is Dr. Peter Crocker, Professor in the School of Human Kinetics at the University of British Columbia. This study is part of the master's thesis of Erica Bennett, a graduate student at UBC.

WHAT IS THE RESEARCH ABOUT?

We are interviewing physically active women in the Vancouver/lower mainland area who are expecting their first child and are in their first or early second trimester of pregnancy. We are interested in hearing about their thoughts and experiences with physical activity during the course of pregnancy.

WHAT WILL PARTICIPATING IN THE STUDY INVOLVE?

If you agree to participate, you will be invited to take part in two interviews that will last approximately 1 to 1.5 hours each (conducted at a time and place convenient for you). The discussions that take place will be audio-recorded and transcribed for analysis. If there are issues that you do not wish to talk about, that is fine, and if you wish to withdraw you may do so at any time without having to give any reason for doing so. There are no anticipated risks associated with this study.

WHAT WILL BE DONE WITH THE INFORMATION I PROVIDE?

The information you provide within the interviews will provide us with a valuable understanding of (a) how expecting mothers experience exercise throughout the course of pregnancy and (b) how these experiences affect expecting mothers' attitudes toward exercise and exercise behaviours. Any information provided within these discussions will be made anonymous, whereby no personal information that can identify you will be made available within any reports that may result from the research. Furthermore, it will be ensured that audio-recordings are not over-heard and transcripts not read by anyone other than the researchers involved with this study. All interview transcripts will be kept in a locked cabinet

in the office of the principal investigator and no-one other than the researchers involved in the study will have access to this information.

HOW WILL THE RESEARCH BE USEFUL?

The information collected from the interviews with expecting mothers will be useful in understanding what motivates women to engage in exercise through the course of pregnancy. The information gained from this study will provide an important foundation for the development of effective programs, designed from expecting mothers' point of view, to support healthy behaviours throughout the course of pregnancy.

WHAT IF I WERE TO WITHDRAW FROM THE STUDY?

Your participation in the research is entirely voluntary and you may withdraw from the study at any time without having to give any reason for doing so and without experiencing any negative consequences.

WILL I GET PAID FOR TAKING PART?

No payment will be made.

Appendix C



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Exercise Behaviours during Pregnancy

Consent Form

Peter Crocker, PhD (Principal Investigator)
School of Human Kinetics
University of British Columbia

Erica Bennett, BA
School of Human Kinetics
University of British Columbia

Purpose of the Project: We are interested in interviewing physically active women in the Vancouver/lower mainland area who are expecting their first child and are in their first or early second trimester of pregnancy. We are interested in hearing about their thoughts and experiences with physical activity during the course of pregnancy. The information gained from this study will provide important information to better understand expecting mothers' behaviours and attitudes towards physical activity.

Participation: If you agree to participate you will be invited to take part in two interviews. The location for these interviews will be of your choice (at a time convenient for you) and will last approximately 1 to 1.5 hours each. If there are issues you do not wish to talk about, that is fine and if you wish to withdraw you may do so at any time without having to give any reason for doing so. The interview will be tape-recorded and transcribed in order to analyze the information you provide.

Confidentiality: Any information you provide within this interview will be made anonymous, whereby no personal information that can identify you will be made available within any reports that may result from this research. Furthermore, we will make sure that audio-recordings are not overheard and that transcripts, or parts of the transcripts are not read by anyone other than the researchers involved with this study. All interview transcripts will be kept in a locked cabinet in the office of the principal investigator and no-one other than the researchers associated with this study will have access to this information.

Remuneration: No payment or remuneration will be made.

Your Rights: Your participation in this research is entirely voluntary and you may withdraw from the study at any time without having to give any reason for doing so and without experiencing any negative consequences. If you have any questions or want further information about the study please contact Dr. Peter Crocker. Alternatively, if you have any concerns about your rights or treatment as a research subject please contact the ‘Research Subject Information Line’ in the UBC Office of Research Services at (604) 822-8598 or if long distance email to RSIL@ors.ubc.ca.

Consent: I consent to take part in this study of ‘Exercise Behaviours during Pregnancy’. The study has been explained to me and I understand what is involved.

I understand that my participation in this study is entirely voluntary and that I may withdraw from the study without having to give any reason for doing so and without experiencing any negative consequences. I understand that if I do not wish to answer any question or discuss any topic that is raised, I may refuse to answer and the interviewer will go onto the next question. If I withdraw from the study, the information I have supplied (tapes, notes) will be destroyed.

I am willing to take part in the interview and understand that this will last approximately 1 to 1.5 hours, and I am happy for the conversations to be tape-recorded.

I have received a copy of this consent form for my own records. I also understand that any identifying characteristics will be removed from the information I supply so that my anonymity is protected.

By signing this form you have consented to participate in this study.

SIGNED.....

NAME IN BLOCK LETTERS.....

DATE.....

Appendix D



**Sport and Exercise Psychology Lab
School of Human Kinetics
War Memorial Gymnasium
210 – 6081 University Blvd ,Vancouver, BC, V6T 1Z1**

Dear [prenatal fitness center coordinator],

We are writing to request your cooperation and support on a Masters Research project. The main purpose of this study is to interview physically active women in the Vancouver/lower mainland area who are expecting their first child and are in their first or early second trimester of pregnancy. We are interested in hearing about their thoughts and experiences with physical activity during the course of pregnancy. The information collected from this study will be useful in understanding what motivates women to engage in exercise through the course of pregnancy. The information gained from this study will also provide an important foundation for the development of effective programs, designed from expecting mothers' point of view, to support healthy behaviours throughout the course of pregnancy.

In order to conduct this study, we are looking to recruit women from prenatal exercise classes and would like your permission to take approximately 3 minutes of your prenatal exercise class time to introduce the study and to recruit participants. Would it be possible for us to come to your class(es) to recruit participants? If so, could you please let us know the dates and times that work best for you and we can schedule a suitable time to conduct the presentation. We understand if you are not able to make time for this presentation.

Please respond to this letter if you can or cannot help us with this study by contacting Erica Bennett (Master student) Dr. Peter Crocker, for more information.

Thank you for your time and consideration,

Sincerely,

Principle Investigator

Peter R.E. Crocker, Ph.D.
School of Human Kinetics

Co-Investigator

Erica Bennett, M.A. Candidate
School of Human Kinetics

Appendix E

Demographic questionnaire

The following questionnaire will ask for some background information and will be used for research purposes only. Accurate information is greatly appreciated but questions may be left unanswered if you do not feel comfortable providing certain information.

If you would like to create your own pseudonym (for confidentiality purposes), please include it here:

Date of Birth (MM/DD/YYYY):

Place of Birth:

How would you describe your cultural origin?

(Canadian, French, English, Chinese, First Nations, Italian, German, Scottish, Irish, East Indian, Ukrainian, Dutch, Polish, Portuguese, Filipino, Jewish, Greek, Jamaican, Vietnamese, Lebanese, Chilean, Somali etc.)

First language:

For the following questions, please circle the most appropriate answer:

What is your current Marital Status?

Married/Common Law Widowed Separated/Divorced Single/Never Married

What is your highest level of education completed?

Some High School Completed	High School Diploma	University/College Degree	Graduate Degree
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What is your average household income (yearly)?

Under \$15 000	\$15 000 - \$30 000	\$31 000 - \$50 000	\$51 000 – \$75 000	+\$75 000
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How far along are you in your pregnancy?

Did you exercise before becoming pregnant? If so, how many times per week (on average)?

How many times per week (on average) do you exercise now that you are pregnant?

How would you describe your physical activity behaviours before pregnancy? Please circle ONE of the following:

I engaged in light physical activity on a consistent basis

I engaged in moderate physical activity on a consistent basis

I engaged in vigorous physical activity on a consistent basis

Other: _____

How would you describe your physical activity behaviours at this point in time? Please circle ONE of the following:

I engage in light physical activity on a consistent basis

I engage in moderate physical activity on a consistent basis

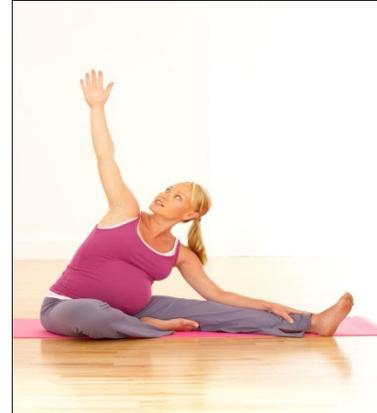
I engage in vigorous physical activity on a consistent basis

Other : _____

If you would like to provide any further information regarding yourself, please do so below:

Appendix F

ARE YOU PREGNANT AND PHYSICALLY ACTIVE? IF SO, WE WOULD LOVE TO SPEAK WITH YOU!



You can participate if you:

- Are in the 1st or 2nd trimester of your pregnancy
- Are physically active
- Are expecting your first child

What do you need to do?

In taking part, you will be required to attend 2 interview sessions about physical activity and pregnancy. The interview process will take approximately 1 to 1.5 hours each time.

Where to be done?

The interview will take place either at UBC (War Memorial Gym), at your home, or a location of your choice.

A \$30 stipend will be provided for taking part in the interviews. Participation is voluntary.

Who to contact for more information?

For more information or to take part in this study, please call Erica Bennett Principal Investigator: Dr. Peter Crocker, School of Human Kinetics, UBC.