

Running Head: SELF-DETERMINATION AND CONFLICT IN LEISURE

Conflict between women's physically active and passive leisure pursuits: The role of self-determination and influences on well-being.

By

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Table of Contents

| | |
|---|----|
| Abstract | 4 |
| Chapter 1 - Introduction and Review of Literature..... | 6 |
| Time Constraints and Women’s Leisure in Canada | 7 |
| Influence of Goal Conflict on Well-being | 9 |
| Relationship Between Self-determination and Goal Conflict..... | 11 |
| The Relationship Between Leisure and Well-being | 15 |
| Summary | 16 |
| The Present Study | 18 |
| Organization of the Remainder of this Document | 19 |
| Chapter II - Presentation of the Journal Article | 21 |
| Introduction | 24 |
| Method | 31 |
| Results | 38 |
| Discussion | 39 |
| Chapter III - Supplementary results..... | 55 |
| Time constraints and supports | 55 |
| Other Correlations with time constraints and goal conflict | 55 |
| Chapter IV - General Discussion | 57 |
| Overview of Results..... | 57 |
| Strengths | 59 |
| Contributions to the Literature and Theoretical Implications..... | 60 |

Limitations and Future Research 64

Practical Applications 68

Conclusion 70

References..... 71

Appendix A – Contributions of the Authors..... 80

Appendix B - Diagrammatic representation of relationships studied..... 82

Appendix C - Questionnaires..... 83

Abstract

Despite evidence to support physically active and passive leisure as significant contributors to well-being, for working mothers, fitting leisure into an already busy schedule can be challenging. The purpose of this study was to examine the influence of perceived time constraints and self-determination for physically active and passive leisure on conflict between these two leisure domains and the influence of this conflict on well-being among physically active working mothers.

A total of 66 women who were physically active, worked at least 30 hours per week outside the home and had at least one child living in the home, participated in the study. At baseline, the participants completed a basic intake assessment in addition to validated questionnaires to measure time constraints and motivation for physically active and passive leisure. A two-week period of electronic experience sampling followed to evaluate leisure engagement. A final set of measures to evaluate conflict between physically active and passive leisure over the two weeks, and general well-being were completed at the end of the experience sampling period.

Results indicated that despite relatively high levels of satisfaction with time available for both physically active and passive leisure, perceived time constraints were associated with increased goal conflict as are non-self-determined motivation for physically active leisure and self-determined motivation for passive leisure. Controlling for engagement in physically active and passive leisure, well-being is negatively influenced by goal conflict.

Recommendations are provided regarding areas for additional research to further our understanding of the impact of opposing motivational orientations on goal conflict

including the incorporation of Vallerand's Dualistic Model of Passion (Vallerand et al., 2003).

From a practical standpoint, the implications of the study results for interventions designed to address general well-being in middle class working mothers through targeting factors related to time constraints and goal conflict are discussed.

Chapter 1 - Introduction and Review of Literature

The premise that physical activity has a positive influence on health and well-being is well established (Warburton, Nicol, & Bredin, 2006; Penedo & Dahn, 2005; Mack, Wilson, Gunnell, Gilchrist, Kowalski, & Crocker, 2012; Garcia, Archer, Moradi, & Andersson-Arnten, 2012). The growing body of literature supporting this notion has resulted in guidelines of 150 minutes of moderate to vigorous physical activity per week for Canadians to optimize their physical and mental health (Canadian Society for Exercise Physiology, 2011). An analogous body of literature exists to support the role of all forms of leisure, whether physically active or not, in improving well-being (Brajsa-Zganec, Merkas, & Sverko, 2011; Heo, Lee, McCormick, & Pederson, 2010; Ateca-Amestoy, Serrano-del-Rosal, & Vera-Toscano, 2008).

To date, leisure has defied the adoption of a singular definition. While the word originates from the Greek 'licere' meaning to be permitted, the French term 'loisir' means free time (Jenkins & Pigram, 2003). Though no one meaning has been agreed upon, there are two common themes among the operational definitions in the literature that are consistent with the purpose of this study: leisure is free time; the time not devoted to paid work, unpaid work, or personal care (Spinney & Millward, 2011) and leisure activities are those that individuals choose to engage in during their free time (Ateca-Amestoy et al., 2008).

For the purposes of this thesis, two forms of leisure, physically active leisure and passive leisure will be studied. Physically active leisure comprises those leisure activities that fall under the Canadian Society of Exercise Physiology definition of physical activity: "Movement that increases heart rate and breathing" and "Any bodily movement produced by skeletal muscles that requires energy expenditure" such as brisk walking, weight training, or playing tennis (Canadian Society for Exercise Physiology, 2011). Passive leisure is defined as those activities an

individual chooses to participate in during their free time that do not include any significant movement. These include activities that fall under the Statistics Canada definition of passive leisure (e.g. listening to music, watching television) as well as social and cognitive leisure activities (e.g. socializing with friends, engaging in hobbies) typically categorized as active leisure by Statistics Canada (2011) but included as passive leisure here to clearly separate leisure with a physical activity component (physically active leisure) from all other forms of leisure.

While both types of leisure have been found to enhance well-being, it can be challenging for some Canadians, to find sufficient time to engage in either form in order to reap the benefits.

Time Constraints and Women's Leisure in Canada

The Statistics Canada General Social Survey results for 2010 found that 29% of Canadians feel that they do not have time for fun anymore with this number increasing to 43% among those aged 35 to 44 (Statistics Canada, 2011). While men's time spent in paid work and related activities has declined by 14 minutes per day since 1998, the time women have spent on paid work has remained the same. Men continue to spend 53 minutes more per day engaged in paid work compared with women however, unpaid work continues to grow for both sexes with women continuing to take on the lion's share with 1 hour and 13 minutes more per day compared with men. Particularly with respect to childcare, women spent more than twice as much time on this activity (up to 6 hours 33 minutes per day for children under 5) than men. Based on this data, it appears that Canadians, and in particular women, have less time for participation in leisure activities. Indeed, the 2012 Canadian Index of Well-Being showed an overall decrease from 1994 to 2010 in Canadians' participation in leisure and cultural activities from visiting museums to attending performing arts events. Of particular note was a significant decline in more passive forms of leisure such as social leisure activities like visiting with friends and

family, which decreased by 19.7% (Canadian Index of Wellbeing, 2012) with a greater drop reported among women than men.

According to Statistics Canada data from 2009 only 14% of Canadian women (compared to 17% of men) are meeting physical activity guidelines (Statistics Canada, 2011). While women aged 20 to 39 manage to fit in an average of 24 minutes of moderate to physical activity on a daily basis, this number decreases with age to only 21 minutes between the ages of 40 to 59 and then to 12 minutes by age 60 to 79.

In 2008, three quarters of all Canadian couples with children were dual earners, up from one third in 1976 (Marshall, 2009). Among dual earning households in 2005, women in particular report a greater ‘time crunch’ and dissatisfaction with work-life balance than men, with women with dependent children at home reporting the greatest time stress (Silver & Crompton, 2002). Work by Nomaguchi, Milkie, and Bianchi (2005) notes that both mothers and fathers tend to feel that they don’t spend enough time with their spouse and children, and women, in particular, report insufficient time for themselves. Most importantly, this work demonstrated the negative impacts of time stress on the well-being of mothers and fathers. With evidence arising that women’s mental health may be more vulnerable to distress and chronic mental health conditions (McDonough & Walters, 2001), further understanding of the potential influence of time constraints on women’s ability to pursue leisure is warranted.

Prior research into influences on leisure engagement has established that variation in leisure participation can be explained by a number of different factors including age, culture, region, religion, and socioeconomics, and that gender, race and class intersect all categories. Miller and Brown (2005) in a study of young mothers in Australia found that gendered household norms and an internalized ‘ethic of care’ that ‘good’ women take care of others first

dominated women's perceptions of leisure and were negatively associated with women engaging in leisure. LaFrance (2011), through a series of interviews with women in New Brunswick, Canada found that among mothers who were able to take time for physically active leisure framed it as something they 'should' do to not just better their health but ultimately to enable them to take care of others. A similar sense of obligation was echoed in a study by Nash (2011) that summarized the perceptions of Australian women interviewed during pregnancy concluding that to fulfill the 'good' mother role, at no time during a women's life is she given the freedom to be inactive but is expected to sustain a level of physical activity to maintain a feminine body even during pregnancy. Even the fitness industry has been accused of turning physical activity for women into another form of work on the self and an obligation to make productive use of one's time (Maguire, 2008).

The promotion of physical activity as a type of work or social obligation, calls into question whether, under time constrained conditions, goals of pursuing physically active leisure may conflict with goals to pursue other more passive forms of leisure that do not involve any physical activity. This study will aim to determine if a relationship exists between time constraints and conflict between physically active and passive leisure pursuits; a relationship not previously studied. This relationship is important given that goal conflict has been shown to negatively influence well-being as will be discussed in the next section.

Influence of Goal Conflict on Well-being

Goal conflict can arise when limited resources like energy and time are available to pursue desired goals (Maes & Gebhardt, 2000). Goal conflict, also referenced in the literature as goal interference, occurs "when the pursuit of one goal impairs the likelihood of success in

reaching another goal” (Riediger & Freund, 2004). This is likely when time is constrained as previously discussed.

The results of goal conflict or goal interference go beyond the simple reduced likelihood of reaching goals competing for the same available resources. The literature references a host of additional physical and psychological consequences including negative affect, depression, neuroticism, psychosomatic complaints (Emmons & King, 1988; Riediger, 2007), poor intention-behaviour relationships (Li & Chen, 2008) and poor well-being (Riediger & Frone, 2004). Studies indicate that conflict resulting from the desire to pursue two activities requiring the same limited resources such as time, money and energy can be detrimental to well-being (Frone, 2000; Pearson, 2008; Li & Chen, 2008).

Well-being is an elusive concept to define (Guérin, 2012). Subjective well-being, as described by Diener (2006), includes both positive and negative evaluations of life. His well-established definition acknowledges subjective well-being as an ‘umbrella term’ that encompasses life and work satisfaction in addition to positive and negative affective reactions to life events. Ryan & Deci (2001), architects of self determination theory (SDT; Deci & Ryan, 1985, 2002), described later, discuss two paradigms in defining well-being: hedonic – well-being stemming from pleasure and happiness, and eudaimonic – well-being as more than subjective happiness and aligning more with living in a manner true to one’s values. In SDT, well-being is often evaluated through the employ of more than one measure to evaluate related constructs such as positive versus negative affect, satisfaction, vitality and self-esteem (Wilson & Rodgers, 2007). Similarly this study will use two measures to evaluate well-being: satisfaction with life to capture eudaimonic well-being and vitality to capture hedonic well-being.

Prior studies have established that conflict between paid work and family is associated with mood, anxiety and substance dependence disorders and an increased likelihood of mental health illness (Frone, 2000; Frone, Russell, & Cooper, 1997). Women in particular may be at increased risk of goal conflict and the subsequent decrease in well-being that can result. Women can feel pressure to fulfill the ‘superwoman’ role balancing the multiple life roles of the successful career woman, and good mother and partner in addition to engaging in healthy lifestyle habits (Vancour, 2009) including maintaining physical activity levels (Maguire, 2008). Juggling multiple roles of employee, partner, parent etc. creates the potential for role overload and subsequent goal conflict. Add to this the goals of exercising regularly and engaging in other passive leisure pursuits and women are faced with multiple potentially conflicting goals. Pearson (2008) in his study of role overload, job satisfaction and leisure satisfaction, found role overload to be the greatest single predictor of negative psychological health.

No prior research has been published on the influence on well-being of conflict between physically active and passive leisure - two domains traditionally associated with increased well-being. This study will aim to fill this gap in the literature to determine if goal conflict between the domains of physically active and passive leisure impacts well-being and will do so by studying this relationship among a group of physically active working mothers.

Relationship Between Self-determination and Goal Conflict

While conflicting goals can negatively impact well-being, it is worth considering what may influence this goal conflict. Of particular interest in this study is the influence of motivation on goal conflict. Self-determination theory (SDT; Deci et al., 1985, 2002) postulates that motivation stems from our natural tendency to strive toward fulfilling three basic psychological needs: competence, autonomy and relatedness. When these needs are met, motivation is self-

determined and positive consequences such as less conflict ensue. The theory has been used to examine motivational influences on various behaviours including physical activity (Fortier, Williams, Sweet, & Patrick, 2009; Teixeira, Carraca, Markland, Silva, & Ryan, 2012), work (Gillet, Gagne, Sauvagere, & Fouquereau, 2012; Moran, Diefendorff, Kim, & Liu, 2012) and school (Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013) and general leisure pursuits (Leversen, Danielson, Wold, & Samdal, 2012; Ratelle, Vallerand, Senecal & Provencher, 2005). There is a small but growing body of literature showing that self-determined motivation toward conflicting goal pursuits reduces reported conflict due to the harmonious integration of the goals into the self concept (Ratelle et al., 2005; Senecal, Vallerand, & Guay, 2001). While SDT is comprised of component sub-theories, the Organismic Integration Theory (OIT) is of particular interest to this study. The OIT sub-theory describes types of motivation, each reflecting different degrees of autonomy and their consequences.

The autonomy continuum. The self-determination continuum places on a spectrum, five types of motivation reflecting varying degrees of autonomy (Deci & Ryan, 2002). At one end of this spectrum is intrinsic motivation, the most self-determined or autonomous form of motivation in SDT. Intrinsically motivated individuals engage in an activity purely for the innate satisfaction or enjoyment the activity brings - for example a woman going to see a movie or attending an exercise class because she finds the activities inherently rewarding. Next to intrinsic motivation on the spectrum is integrated regulation typified by behaviours that are consistent with one's values and goals. A woman might paint during her leisure time because she considers herself an artist. The next form of regulation along the continuum is identified regulation and is the last of the self-determined forms of regulation. This form manifests itself by engaging in activities with which she can identify with their purpose or value and engage in

out of choice. Building on the previous example, the women who engages in painting through identified regulation, does so because she believes it will bring her relaxation which she values. Similarly she may attend a spinning class because she believes it will bring her health benefits. The non-self determined end of the spectrum begins with introjected regulation. Behaviours founded in this form of motivation are directed at avoiding feelings of guilt or shame. An instance of introjected regulation might be a women who goes to the gym or gets a pedicure for self-presentational concerns and not because of any inherent pleasure she receives from the activity itself.

Lastly, external regulation completes the self-determination continuum. This highly controlled form is defined by being motivated to gain external rewards or avoid negative consequences (Deci & Ryan, 2002). Women who engage in meditation or go for a walk as a result of a doctor's recommendation are likely doing so out of external regulation. OIT also postulates that the more self-determined the motivation, the more positive the consequences. Research has indeed shown that more self-determined forms of motivation tend to result in better performance, health and well-being (Weinstein & Ryan, 2011; La Guardia, 2009; Guerin & Fortier, 2012; Fortier, Duda, Guerin, & Teixeira, 2012).

Of particular interest to this study is prior research examining the relationship between self-determination and conflict but first it's important to establish the targeted level of motivation proposed for use as outlined by Vallerand's hierarchical model of intrinsic and extrinsic motivation.

Hierarchical model of intrinsic and extrinsic motivation. Vallerand (2007) proposed a model of motivation built upon Deci and Ryan's SDT. He postulates that motivation can occur at three levels: global, contextual and situational, naming his concept the hierarchical model of

intrinsic and extrinsic motivation (HMIEM). Global motivation refers to one's general orientation toward interacting with the environment and has been found to be the most stable form of motivation. Contextual motivation refers to motivational orientation toward specific life domains such as work, physical activity, family, leisure and education, and situational motivation describes motivation toward a particular activity at a particular point in time.

Vallerand proposed through his model that motivation in one context might be influenced by motivation in another context and that three different types of interactions between contexts are possible: facilitative, conflicting, and compensative (Vallerand, 2007). Of particular interest in this study is conflict at the contextual level examining the influence of self-determined and non-self-determined motivation for the two contexts of physically active and passive leisure on conflict between them.

Ratelle et al. (2005) in their examination of conflict between the contexts of school and leisure revealed that contextual self-determined motivation for school negatively predicted school/leisure conflict and high levels of conflict were associated with poorer academic outcomes, higher levels of depression and low life satisfaction. Their results were consistent with Senecal, Vallerand and Guay's initial 2001 results, showing the more self-determined an individual feels toward activities from two important life domains, work and family, the less inter-domain conflict results. While Ratelle et al. (2005) did not find any significant influence of motivation toward leisure on conflict between school and leisure, they concluded that this may be explained by the fact that school is a largely less self-determined context compared to leisure. Individuals in their college age sample feel obligated to engage in school and therefore the nature of the conflict stems from an obligation to engage in something that is not as self-determined.

This study aimed to examine the influence of self-determined and non-self-determined motivation on conflict between physically active and passive leisure. No studies to our knowledge have explored the relationship between self-determination and conflict between two different forms of leisure.

The Relationship Between Leisure and Well-being

Evidence in support of leisure as a significant contributor to well-being has accrued from around the world. In Croatia (Brajsa-Zganec et al., 2011), New Zealand (Trenberth & Dewe, 2002), Canada (Iwasaki, Mackay, Mactavish, Ristock, & Bartlett, 2006), Sweden (Agahi & Parker, 2008), United States (Heo et al., 2010), and Spain (Ateca-Amestoy et al., 2008) the literature consistently reports the positive effects of an array of leisure forms on the well-being of diverse cultural, gender and age groups.

Physically active leisure and well-being. Research findings demonstrate that moderate-intensity physical activity has both physical and psychological benefits (Warburton et al., 2006; Janssen & LeBlanc, 2010; Biddle & Mutrie, 2008). This has held true across multiple populations from healthy pregnant women (Da Costa, Rippen, Dritsa, & Ring, 2003) to individuals with multiple sclerosis (Motl & Snook, 2008). Even individuals with a pre-existing mental health illness experience improvements in affect from physical activity (Mata, Thompson, Jaeggi, Buschkuehl, Jonides, & Gotlib, 2011; Mead, Morley, Campbell, Greig, McMurdo, & Lawlor, 2009; Herring, O'Connor, & Dishman, 2010). Published reviews have also demonstrated the positive effects of physical activity on anxiety disorders and depressive symptoms (Strohle, 2009; Asmundson, Fetzner, DeBoer, Powers, Otto, & Smits, 2013).

Similarly, published literature supports the effects of physical activity on well-being in women. A 2010 qualitative study by Lloyd and Little supports the contention that a women's

well-being can be enhanced through participation in leisure-time physical activity. Similar results have been demonstrated in quantitative studies of the physical activity/well-being relationship in women showing active women experience greater well-being than inactive women (Blomstrand, Bjorkelund, Arai, Lissner, & Bengtsson, 2009; Kull, 2002; Guerin & Fortier, 2012). Given that women tend to have poorer mental health, and are at risk of significant time constraints and conflict, this study will focus, in particular, on women.

Passive leisure and well-being. There is also evidence to support the positive influence of passive leisure on well-being. Brajsa-Zganec et al. (2011) established the contribution of three different types of leisure (active socializing and going out; visiting cultural sites and events; and family and home activities) to well-being and found that all three were positively correlated with well-being measures. Additional literature demonstrates the positive influence of passive/recuperative leisure such as spiritual reading or socializing as a means of coping with stress (Iwasaki et al., 2006; Trenberth et al., 2002). Finally serious leisure (leisure activities requiring commitment and result in the development of special skills and knowledge e.g. stamp collecting) has been correlated with positive affect (Heo et al., 2010). Each of these studies included some leisure activities that would fall under the definition of passive leisure (no significant movement) used in this thesis and demonstrate its positive influence on well-being.

To examine the influence of conflict between physically active and passive leisure on well-being, this study will control for the variation in well-being explained by time engaged in both physically active and passive leisure in an effort to isolate the influence of goal conflict.

Summary

The relationships proposed for examination in the following study are outlined in the model depicted in Appendix B. Using Vallerand's (2007) HMIEM that builds on SDT (Deci and

Ryan, 1985, 2002) and expanding on the work started by Senecal et al. (2001) and Ratelle et al. (2005), this study aims to study the influences of time constraints and self-determination on conflict between physically active and passive leisure pursuits in physically active working mothers. Subsequent analyses will examine the influence of conflict between physically active and passive leisure on subjective well-being over and above the variation in well-being explained by time engaged in both these leisure activities.

No prior studies have examined conflict between physically active and passive leisure and the motivational and time constraint factors that may influence it. Nor has the influence of conflict between these domains on well-being been examined.

The links between physically active leisure and well-being, and other forms of leisure and well-being are well established in the literature. However, time use and leisure engagement data from Canada indicates that Canadian households and in particular women, have less time for leisure activities than they would like and are decreasing the time spent engaged in leisure activities. This data questions whether conflict may exist between multiple life domains including work, family, but in particular physically active and passive leisure pursuits and is particularly salient among women with multiple life roles. Currently we have a poor understanding of the influence of goal conflict between physically active and passive leisure on well-being leaving time constrained Canadian women with little guidance as to whether to run or read when opportunities for leisure are limited.

SDT and particularly HMIEM show great potential for exploring the relationships between motivation and conflict between physically active and passive leisure. This study will aim to address the role of motivation in addition to the influence of conflict on well-being over and above that related to time engaged in both these leisure activities.

The Present Study

Purpose. The purpose of this study is three-fold. The first is to explore the relationship between time constraints and conflict between the domains of physically active and passive leisure in middle class physically active working mothers. Second, the study aims to use SDT and in particular, the HMIEM, to examine the influence of self-determined motivation for both physical and passive leisure on goal conflict between these two pursuits. Third, the study will investigate whether conflict between physically active and passive leisure contributes to variation in subjective well-being over and above that explained by time engaged in each domain.

Hypotheses. Concerning purpose one, due to the anticipated limited time resources available within this population and consistent with work by Maes and Gebhardt (2000) a positive correlation between time constraints to engage in physical and passive leisure activities and reported conflict between these domains is expected.

With respect to purpose two, self-determined motivation toward physically active and passive leisure is expected to be associated with decreased conflict as predicted by SDT and reported by Ratelle, Vallerand, Senecal and Provencher (2005) in their school-leisure conflict work.

With regards to purpose three, goal conflict between physically active and passive leisure is expected to be negatively associated with well-being above and beyond the expected positive influences of physically active and passive leisure on well-being. This is consistent with literature on the relationship between goal conflict and well-being, particularly that of Riediger and Freund (2004).

Significance. The study will make a number of valuable contributions. As the first known study to examine conflict between physical activity and passive leisure, the study builds upon existing work on motivation and goal conflict in two ways. First by examining the added influence of time constraints on reports of goal conflict and secondly, it builds on existing SDT and goal conflict work to better understand the role of motivation as a predictor of goal conflict in these two domains. Lastly, by examining the influence of goal conflict between physical and passive leisure pursuits on well-being, above and beyond participation, it will support decisions regarding how best to decrease conflict and make time for both pursuits in the lives of middle class physically active mothers.

Organization of the Remainder of this Document

The remainder of this thesis has been organized into three chapters. The following chapter (Chapter II) contains the journal article *Conflict between women's physically active and passive leisure pursuits: The role of self-determination and influences on well-being* that has been submitted to the peer-reviewed academic journal *Applied Psychology: Health and Well-being*. In addition to a short introduction, this article includes the methods used and the results of the study as well as a short discussion. Chapter III contains a short supplemental analysis of additional independent variables collected. These results did not form part of the journal article but are referenced in the general discussion that can be found in Chapter IV. The general discussion summarizes the results, highlights strengths, theoretical and practical contributions of the study, and outlines limitations and opportunities for future research.

In addition, three appendices are included. Appendix A discusses the contributions of three authors of journal article. Appendix B provides a visual representation of studied

relationships between the independent and dependent variables. Appendix C provides a copy of the questionnaires used in the study.

Chapter II - Presentation of the Journal Article

The journal article, *conflict between women's physically active and passive leisure pursuits: The role of self-determination and influences on well-being*, presented in this chapter has been submitted to the academic journal *Applied Psychology: Health and Well-being*.

Conflict between women's physically active and passive leisure pursuits: The role of self-determination and influences on well-being

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Abstract

Background: Evidence in support of both physically active and passive leisure as significant contributors to well-being has been published internationally. However, for time constrained physically active working mothers, fitting leisure into an already busy schedule can be challenging. The purpose of this study was to examine the influence of perceived time constraints and self-determination for active and passive leisure on conflict between these two leisure domains and the influence of this conflict on well-being.

Methods: A total of 66 working mothers completed validated questionnaires measuring time constraints and motivation at baseline followed by two weeks of experience sampling to evaluate leisure engagement with final measures of goal conflict and well-being at the end of the two weeks. **Results:** Results indicate that perceived time constraints are associated with increased goal conflict as are non-self-determined motivation for physically active leisure and self-determined motivation for passive leisure. Controlling for engagement in physically active and passive leisure, well-being is negatively influenced by goal conflict. **Conclusions:** Time constraints, goal conflict and motivation are important factors to consider in efforts to increase well-being among physically active working mothers. Further research is required to understand the influence of opposing motivational orientations on goal conflict.

Key words: self-determination theory, goal conflict, time constraints, leisure, women, motivation

Introduction

Evidence in support of leisure as a significant contributor to well-being has surfaced around the world (Brajsa-Zganec, Merkas, & Sverko, 2011; Iwasaki, Mackay, Mactavish, Ristock, & Bartlett, 2006; Trenberth & Dewe, 2002). Some forms of leisure involve activity of a physical nature. The Canadian Society for Exercise Physiology (2011) defines physical activity as “Movement that increases heart rate and breathing” (p. 1) such as running or dancing. In this paper, this form of leisure will be referred to as physically active leisure. However, not all forms of leisure involve physical activity; other forms may be more sedentary or passive. For the purposes of this study, passive leisure pursuits are defined as those activities individuals choose to participate in during their free time that do not include any significant movement. These include activities such as listening to music and engaging in social media.

It is well known that physically active leisure has a strong and positive influence on health and well-being (Biddle & Mutrie, 2008; Penedo & Dahn, 2005; Warburton, Nicol, & Bredin, 2006). Specifically, there is evidence to indicate that active women experience greater well-being than inactive women (Blomstrand, Bjorkelund, Arai, Lissner, & Bengtsson, 2009; Hawker, 2012; Llyod & Little, 2010). The World Health Organization has identified physical inactivity as one of the most important modifiable risk factors for chronic disease (World Health Organization, 2013). Evidence from this comprehensive body of literature led to the 2011 Canadian recommendation of at least 150 minutes per week of moderate to vigorous physical activity in order to support physical and mental health (Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010).

Researchers have also established an important connection between passive leisure and well-being. Brajsa-Zganec et al. (2011) documented a positive correlation between three

different types of passive leisure (i.e., socializing and going out; visiting cultural events; and family and home activities) and measures of well-being. Additional studies have demonstrated the positive effect of passive/recuperative leisure such as engaging with social groups, relaxing, or doing something quiet and peaceful as a means of coping with stress (Iwasaki et al., 2006; Trenberth & Dewe, 2002). Tkach and Lyubomirsky (2006) found that passive leisure activities such as reading a book, watching TV or going to a movie with friends was a unique predictor of happiness, particularly among women.

Despite these documented benefits, results from the 2012 Canadian Index of Well-Being showed an overall decrease from 1994 to 2010 in Canadians' participation in leisure and cultural activities. Of particular note was a significant decline in more passive forms of leisure such as social leisure activities, which decreased by 19.7% (Canadian Index of Wellbeing, 2012) with a greater drop reported among women than men.

Time Constraints and Goal Conflict

This decline in leisure participation is likely related to limitations in time available for engaging in leisure activities, particularly among women, as illustrated in the results of Canadian national surveys. For instance, the 2010 Statistics Canada General Social Survey reported that among men and women 25 to 44 years of age, almost 40% answered "Yes" to the question "Do you feel you don't have enough time to have fun anymore" and 47% felt that at the end of the day they had not accomplished what they set out to do (Statistics Canada, 2011). While data from the survey indicate that men perform, on average, 53 minutes more paid labour per day than women, women performed an average of 73 minutes more unpaid labour per day than men. Among dual earning couples, women spent close to 50 hours per week on childcare compared to 27.2 hours spent by men (Statistics Canada, 2011). In other western countries, similar patterns

have been reported wherein women, in particular, report insufficient time for themselves (Nomaguchi, Milkie, & Bianchi, 2005),

It is evident that North American adults, and particularly women, have limited time available to them and therefore it is likely that they would feel conflicted about how to allocate this precious time. *Goal conflict* can arise when there are limited resources like energy and time available to pursue desired goals (Maes & Gebhardt, 2000). Goal conflict, also referred to in the literature as goal interference, occurs “when the pursuit of one goal impairs the likelihood of success in reaching another goal” (Riediger & Freund, 2004). For example, a working mother may have the goal of fitting in her daily physical activity at the end of the workday but this may interfere with her goal of relaxing with her family. Many women feel the pressure to take on multiple roles (Pearson, 2008) and engage in health-promoting leisure activities in addition to their competing day-to-day responsibilities (Vancour, 2009). Adding to a working mother’s already busy day the expectation to engage in physically active leisure suggests that many women would be faced with multiple potentially conflicting goals.

In a sample of physically active working mothers, one objective of this study was to explore whether there was an association between time constraints for engaging in both physically active and passive leisure, and goal conflict in pursuing physically active and passive leisure activities.

Self-determination and Goal Conflict

While time constraint is one factor that influences goal conflict, another potential factor is self-determined motivation. Self-determination theory (SDT; Deci & Ryan, 1985, 2002) has been used to examine motivational determinants and influences on behaviour in various domains including physical activity (Fortier, Williams, Sweet, & Patrick, 2009) school and general leisure

pursuits (Ratelle, Vallerand, Senecal, & Provencher, 2005), and also within work and family contexts (Senecal, Vallerand, & Guay, Antecedents and Outcomes of Work-Family Conflict: Toward a Motivational Model, 2001).

The self-determination continuum. The self-determination continuum places six¹ types of motivation on a spectrum of varying degrees of autonomy (Deci & Ryan, 2002). At one end of this spectrum is intrinsic motivation, the most self-determined form of motivation in SDT. Intrinsically motivated individuals engage in an activity purely for the innate satisfaction or pleasure the activity brings - for example a woman may attend a dance class because she enjoys participating in the activity for its own sake. Next on the spectrum is integrated regulation, which typifies behaviours that are consistent with one's identity. A woman might paint during her leisure time because she considers herself an artist. Next along the continuum is identified regulation. This motivational style manifests itself as engaging in activities with which one can identify with their purpose or value. For instance, a woman might run because she believes it will bring her the health benefits she values.

The less self-determined end of the spectrum begins with introjected regulation. Behaviours originating from this type of motivation are directed at avoiding feelings of guilt or shame. An instance of introjected regulation would be a woman who goes to the gym for self-presentational concerns (e.g. to improve her appearance) and not because of any inherent pleasure she receives from the activity itself. Lastly, external regulation completes the self-determination continuum. This highly controlled form is defined by being motivated to gain external rewards or avoid negative consequences (Deci & Ryan, 2002). Women who engage in

¹ Amotivation, the absence of motivation has not been described here. The purpose of the study was to focus on types of motivation and not the absence of motivation therefore amotivation was not included in the analyses.

meditation as a result of a doctor's recommendation are likely doing so out of an external regulation.

Motivation, from the perspective of SDT, is typically measured using validated questionnaires that include items covering the types of motivation on the autonomy spectrum. One method to develop scores for self-determined motivation and non-self-determined motivation has been to average the sub-scale scores for each of the motivational regulations on the spectrum that fall into these respective categories. This approach has been used in prior research (Barbeau et al., 2010; Pelletier & Dion, 2007) and will be used in this study.

SDT postulates that with more self-determined motivation, more positive behavioural and psychological consequences will ensue. Research has indeed shown that self-determined motivation results in better performance, health and well-being (Deci & Ryan, 2002; La Guardia, 2009; Weinstein & Ryan, 2011). Increased participation in physical activity has also been predicted by self-determined motivation (Barbeau, Sweet, & Fortier, 2010; Sabiston, Brunet, Kowalski, Wilson, Mack, & Crocker, 2010). In addition, and of importance for this study, self-determination can also influence the experience of goal conflict. In an examination of conflict between the contexts of school and leisure, Ratelle et al. (2005) showed that self-determined motivation for school negatively predicted school/leisure conflict. Their results were consistent with Senecal et al. (2001) showing that the more an individual is self-determined toward activities from two important life domains (i.e., work and family), the less inter-domain conflict results. In these two important studies, the presence of time constraints was not included in the models that were tested. The present study aimed to expand on these works to examine the influence of limited resources such as time and energy, in addition to self-determination, on goal

conflict. This would further our understanding of factors that influence goal conflict in a specific and understudied population, that is, physically active working mothers.

Goal Conflict and Well-being

The study of goal conflict is an important research endeavor given that the consequences of goal conflict go beyond the reduced likelihood of reaching goals that compete for the same available resources (i.e., time, energy). Studies have demonstrated that there are a host of additional physical and psychological outcomes of goal conflict that include negative affect, depression, neuroticism, psychosomatic complaints (Emmons & King, 1988; Riediger, 2007), increased fibromyalgia pain (Hardy, Crofford, & Segerstrom, 2011) and impaired well-being (Riediger & Freund, 2004).

The latter, well-being, is an elusive concept to define (Guerin, 2012). Subjective well-being, as described by Diener (2006), includes both positive and negative evaluations of life. His well-established definition acknowledges subjective well-being as an “umbrella term” that encompasses life satisfaction in addition to positive and negative affective reactions to life events.

Studies examining conflict between work and family specifically have demonstrated a greater likelihood of mental health deterioration with increased conflict (Frone M. R., 2000; Frone, Russell, & Cooper, 1997). Offer and Schneider (2011) reported that mothers spend an average of 10 hours more per week multitasking (i.e., multiple goals) compared to men and these additional hours, primarily spent on housework and childcare, were associated with increased negative emotions, psychological stress and work-family conflict. In a study of job and leisure satisfaction, Pearson (2008) found role overload to be the greatest single predictor of negative psychological health in women.

Denton, Prus and Walters (2004) found that psychosocial health tends to be lower for Canadian women than men, making the study of factors influencing women's well-being of utmost importance. Studying a population of women with multiple life roles provides a unique opportunity to examine whether goal conflict between physically active and more passive leisure pursuits can influence well-being. Currently we have a limited understanding of the impact of goal conflict between physically active and passive leisure on well-being, leaving time constrained women with little guidance as to whether to run or read when opportunities for leisure are presented.

Aims of the Study

The purpose of this study was three-fold. The first objective was to examine the relationship between time constraints and conflict between the domains of physically active and passive leisure in physically active working mothers. Due to anticipated limitations in the availability of time as a resource in this population and consistent with work by Maes and Gebhardt (2000), a positive correlation between time constraints to engage in physically active and passive leisure and reported conflict between these domains was expected. Using SDT, the second aim was to investigate the influence of self-determined and non-self-determined motivation for physically active and passive leisure respectively on goal conflict between these two leisure pursuits. As predicted by SDT and studies such as Ratelle et al. (2005), greater self-determined motivation toward both physically active and passive leisure were expected to be associated with lower conflict. Third, the objective was to determine whether conflict between physically active and passive leisure contributes to levels of well-being above and beyond the simple engagement in active and passive leisure pursuits. Based on Riediger and Freund (2004) goal conflict was expected to have a negative influence on well-being over and above the

positive influences on well-being expected from engaging in physically active and passive leisure.

Method

Participants

The data analyzed in this paper was collected as part of a larger project examining associations between physical activity and well-being. The study received approval from the University of Ottawa Research Ethics Board. The women had to meet the following inclusion criteria: 25 to 55 years of age with no underlying medical conditions, employed a minimum of 30 hours/week, caring for at least one child under the age of 18 living in the home, and active, meaning that they self-reported a minimum of 150 minutes of moderate to vigorous physical activity per week for at least 6 months (Canadian Society for Exercise Physiology, 2011).

Women were recruited through physical activity related organizations and websites as well as university campuses in a large urban city. A total of 97 participants were recruited; however, 31 women did not meet one or more of the inclusion criteria or were unable to commit to the time requirements of the study. The final sample consisted of 66 women with a mean age of 42.56 years ($SD = 5.61$). The participants were mostly Caucasian (89%), well-educated (82% with bachelor's degree or higher) and worked 37.78 paid hours per week ($SD = 3.47$) plus an additional 2.90 hours of reported unpaid work per day ($SD = 1.73$). The women had an average of two children ($SD = .93$) with a mean age of 10.42 years ($SD = 4.97$) and 82% were legally married or living common-law. The women were also very active overall, with a mean baseline score of 59.71 on the Godin Leisure Time Exercise Questionnaire ($SD = 21.01$; range 14-130; Godin & Shephard, 1985), and a healthy Body Mass Index of 22.59 on average ($SD = 2.68$).

Procedures

In the present study, two different methods of data collection were used which consisted of (a) completion of validated paper questionnaires at the start of the study (baseline session) and at the end of the study two weeks later (endpoint session), and (b) computerized Experience Sampling (Csikszentmihalyi & Larson, 1987; Barrett & Barrett, 2001) requiring participants to respond, over a two-week period, to daily questionnaires pre-programmed into an electronic device.

Interested participants contacted the lead researcher by telephone or email and were given a brief description of the study and invited to a baseline research session of approximately 50 minutes in length. Upon arrival, a more detailed explanation of the study protocol was provided. Each participant was then asked to provide written informed consent to participate in the study. Afterwards, participants were asked to complete the baseline measures (described below). Verbal and written instructions were provided regarding how to use the electronic device (iPod Touch or iPhone) for the experience sampling portion of the study. Participants either used their own iPhone or iPod Touch or were loaned a device and asked to sign an agreement to help ensure that the device was returned at the end of the study. The device was loaded with a custom designed application to support the study's questionnaire requirements.

Participants were instructed to begin the experience sampling component of the study the next day and to continue collecting self-report data for 14 consecutive days. After two weeks, they were asked to return the device (if applicable) and complete a final series of paper questionnaires (endpoint session). The participants were debriefed and given the opportunity to ask questions.

Baseline Measures

At the first session, all participants responded to the measures that follow. These questionnaires were preceded by a basic *intake assessment form whereby* participants reported demographic information about themselves including age, occupation, education, income, ethnicity, hours of paid and unpaid work, marital status, and the number and age of their children. They also reported their level of physical activity.

Physical activity levels. *The Godin Leisure-time Exercise Questionnaire* (LTEQ; Godin & Shephard, 1985) was used to evaluate participants' current physical activity levels. The LTEQ has been used in active populations (Duncan, Hall, Wilson, & O, 2010) and has fared well in measuring self-reported physical activity when compared to other measures (Jacobs, Ainsworth, Hartman, & Leon, 1993). Specifically, participants were asked to report the number of days they engaged in light, moderate and strenuous physical activity in a typical week in the last six months. Frequency scores were multiplied by intensity values (three, five and nine) and the sum provided a total activity score for a one-week period.

Time constraints. Participants were asked to rate their level of satisfaction with the amount of time they have available for passive and physically activity leisure respectively on scales of -3 = *Dissatisfied - Too Little Time* to +3 = *Dissatisfied - Too Much Time*, with *Satisfied* rated in the middle as 0. For the purposes of this study, the negative values were reverse scored and the responses for the physically active and passive leisure scores were averaged and used in the final analysis as a measure of total time constraint.

Self-Determined and non-self-determined motivation toward physical activity. The Behavioural Regulations in Exercise Questionnaire (BREQ; Markland & Tobin, 2004) is a 15-item questionnaire that measures different types of motivation toward physical activity. The

types of motivation are those described in SDT on a continuum from intrinsic motivation (four items; e.g., “I get pleasure/satisfaction from engaging in physical activity”) to external regulation (four items; e.g., “I feel under pressure from others to engage in physical activity”). Participants were asked to respond to the items based on the stem: “Why do you engage in physical activity?” The BREQ has been shown to have good psychometric properties in active individuals (Hall, Rodgers, Wilson, & Norman, 2010), and active women specifically (Markland, 2009). Wilson, Rodgers, Loitz, and Scime (2006) added four items to the BREQ to assess integrated regulation and these items were included for the present study (e.g., “I consider physical activity to be part of my identity”).

For each regulation, the means of the items were computed. Then, two composite variables were formed in accordance with descriptions of self-determined and non-self-determined forms of motivation given by Deci and Ryan (1991, 2008) and with previous research in SDT (Barbeau et al., 2010). Namely, to create the “self-determined motivation for physically active leisure” variable, the means of the identified, integrated, and intrinsic regulation scales were summed and then divided by three. External regulation and introjected regulation were summed and divided by two to create the mean score for non-self-determined motivation. Cronbach’s alphas in the present study were 0.86 for self-determined and 0.79 for non-self-determined motivation for physically active leisure.

Self-Determined non-self-determined motivation toward passive leisure. Across all instruments in this study, passive leisure was referred to as “non-physically active leisure” to clarify the intended meaning among this active cohort. Participants were first asked to list two to three non-physically active (passive) leisure activities in which they typically participate. To ensure intra-individual consistency in the operational definition of passive leisure for the

duration of the study, subsequent questions regarding passive leisure asked participants to reflect upon the activities they initially identified.

The Leisure Motivation Scale (LMS-28; Pelletier, Vallerand, Green-Demers, Blais, & Briere, 1996) was used to measure motivation toward passive leisure. The LMS-28 is a 28-item scale used to assess the different types of motivation toward leisure activities in which individuals most commonly participate. Items cover the continuum of regulations from Intrinsic Motivation (four items; e.g., “Because I experience a lot of pleasure and satisfaction in learning new things.” to external regulation (four items e.g., “To show others that I am a dynamic person”). Responses for each item range from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). The scale has demonstrated acceptable reliability and validity (Pelletier et al., 1996).

A similar approach to that used for the BREQ was applied to the LMS-28 to create two variables for passive leisure motivation. First, the mean of the items for each motivational subscale was calculated. Then, by taking the mean of the intrinsic and identified subscales a variable for “self-determined motivation toward passive leisure” was produced. The mean of the introjected and external motivation subscales provided a measure of “non-self-determined motivation toward passive leisure”. Cronbach’s alphas in the present study were 0.94 for self-determined and 0.68 for non-self-determined motivation for passive leisure.

Experience Sampling Measures

Days engaged in physically active and passive leisure. The electronic device carried by participants was programmed to prompt them at the end of randomly selected days to indicate whether they had engaged in physically active or passive leisure activities that day. The number of days participants indicated that they had participated in the domain of interest was divided by the number of days they were randomly prompted to respond. For example if a participant

reported that they had engaged in passive leisure on 8 days and physical activity on 6 days out of 10 days that they were asked, the ratios equaled 0.80 for passive leisure and 0.60 for physically active leisure. The purpose of computing ratios for the number days having engaged in each domain was to provide two measures of relative engagement.

Endpoint Measures (two weeks post-baseline)

Goal conflict. Participants were asked to respond to a version of the Intergoal Relations Questionnaire (IRQ; Riediger, 2001) as a measure of conflict between the goals of engaging in both physically active leisure and passive leisure. The IRQ evaluates three different forms of interference among goals, namely time constraints, energy constraints and financial constraints, by using statements of the form: “In the last two weeks, how often did it happen that because of the pursuit of [physical activity], you did not invest as much time/energy/money into [non-physically active leisure] as you would like to?” Then the question is asked a second time with the positions of physical activity and non-physically active leisure reversed. Response options ranged from 1 (*Never/Very Rarely*) to 5 (*Very Often*). An aggregate goal conflict score was then calculated by taking the mean of the six item responses. Cronbach’s alpha in the present study was 0.69.

Subjective well-being. Upon recommendations of Wilson and Rodgers (2007), well-being was assessed using a composite of two instruments, the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) and the vitality subscale of the Short-Form Health Survey of the Medical Outcomes Study (SF-36; Ware Jr & Sherbourne, 1992). Both scales have been shown to be valid and reliable measures (Diener et al., 1985; Thøgersen-Ntoumani, Fox, & Ntoumanis, 2005; Vuillemin, et al., 2005; Ware & Sherbourne 1992). The SWLS asks participants to respond to five statements about their satisfaction with their lives on a

Likert-scale from (1) *strongly disagree* to (7) *strongly agree*. Cronbach's alpha for the SWLS in the current sample was 0.85.

The vitality subscale of the SF-36 contains four items assessing feelings of energy and aliveness on a scale from (0%) *none of the time* to (100%) *all of the time*. Cronbach's alpha for the vitality subscale was 0.83. Scale scores (i.e., SWLS, vitality subscale) were standardized and averaged to develop a composite score of subjective well-being.

Data Analysis

All data from baseline and endpoint questionnaires were entered into SPSS Statistics Version 20.0.0. A second researcher manually checked all data entry and ensured that all variables fell within possible ranges. Electronic sampling data were transferred automatically from the devices to a secure server and then downloaded by the researchers as Excel files which were then imported to SPSS for analysis. Due to technical challenges with data capture and transfer, the experience sampling data for four participants could not be used. These four participants were excluded from the last regression analysis examining goal conflict and well-being (described below).

Composite scores were calculated prior to conducting all analyses. Standard data cleaning protocols as described by Tabachnick and Fidell (2007) were followed. Data were evaluated to meet the assumptions of the correlation and regression analyses used to test the hypotheses. The variable for goal conflict was moderately skewed therefore a square root transformation was performed to achieve a normal distribution (Hair, Anderson, Tatham, & Black, 1998).

To test purpose one, a Pearson's correlation coefficient was used to determine the relationship between time constraints to pursue both physically active and passive leisure and

reported conflict between these two domains. For purpose two, multiple regression was used to determine if any of the four composite self-determination scores (self-determined and non-self-determined motivation for physically active and passive leisure) predicted goal conflict between the two domains. And finally, hierarchical regression analysis was applied to determine the influence of goal conflict on well-being (step 2) beyond any influence of the two ratios of days engaged in physically active and passive leisure collected through experience sampling (step 1). The proportion of variance explained was determined using R square statistic.

Results

Time Constraints and Goal Conflict

The results demonstrated a significant positive correlation between time constraints for physically active and passive leisure and the goal conflict score between these two domains ($r = .26, p = .02$). This indicated that as time constraints for both physically active and passive leisure increased, reported conflict between these two domains also increased.

Self-Determined Motivation and Non-self-determination for Leisure and Goal Conflict

Results of the regression analysis showed that two of the four motivation variables explained 13.9% of the variance in goal conflict, $R^2 = .37, F(2, 66) = 5.09, p < .01$. Specifically, non-self-determined motivation for physically active leisure ($\beta = .33, p < .01$), and self-determined motivation for passive leisure ($\beta = .24, p < .05$) were both significant predictors of conflict between the two domains. The results show that non-self-determined motivation for physically active leisure and self-determined motivation for passive leisure predict increased goal conflict between physically active and passive leisure pursuits.

Goal Conflict and Well-being

In step one of the hierarchical regression analysis, the ratios of days engaged in physically active and non-physically active leisure were entered to determine their influence on well-being. The result revealed that the ratio of days engaged in physically active leisure positively predicted well-being ($\beta = .31, p < .05$) and accounted for 10.9% of its variance, $F(1, 62) = 6.03, p < .05$. However, engaging in passive leisure did not provide a similar explanatory contribution, ($\beta = .13, p = .28$) and was removed before conducting the next step. The inclusion of goal conflict in step two provided a significant improvement in model fit ($\Delta R^2 = .12, p < .01$) and revealed that it was a significant negative predictor ($\beta = -.34, p < .01$) of well-being. The final model predicted 20.9% of the variance in well-being, showing that goal conflict had a negative influence on well-being when controlling for engagement in physically active leisure, $F(2, 62) = 5.09, p < .01$.

Discussion

In a sample of middle class physically active working mothers, this study first attempted to determine whether time constraints were related to goal conflict between physically active and passive leisure. Then, the aim was to determine the influence of self-determined and non-self-determined motivation for these two types of leisure on conflict between them. The final goal of the study was to examine the influence of goal conflict between physically active and passive leisure on well-being while controlling for engagement in these two types of leisure over a two-week period.

With respect to the first purpose, a positive correlation supported the stated hypothesis that an increase in perceived time constraints would be associated with increased reported goal conflict between physically active and passive leisure. To our knowledge, no studies have

looked at the relationship between time constraint and goal conflict within the leisure context. This result is consistent with the findings of Maes and Gerbardt (2000) that goal conflict can arise when resources like energy and time are limited. Given evidence of time constraints as established by Statistics Canada in 2010, which showed that women 25 to 44 years reported insufficient time for 'fun', the correlation results were as expected (Statistics Canada, 2011). The results confirm the reality of time constraints and conflict among a group of middle class women managing careers, motherhood and regular engagement in physical activity. Prior goal conflict research has focused on conflict between leisure and other life domains (Ratelle et al., 2005) and has not taken time constraints into account. Thus, this study expands on previous work by establishing an association between resource limitations (time) and goal conflict between different forms of leisure, physically active and passive, that have not been contrasted before.

In addition to looking at time constraints, the present investigation also sought to determine whether self-determined and non-self-determined motivation for physically active and passive leisure influenced conflict between these two domains. The results partially supported the initial hypothesis and SDT. We found that non-self-determined motivation for physically active leisure predicted more goal conflict. This is in line with past research examining the role of self-determined motivation in school-leisure conflict (Ratelle et al. 2005) and family-work conflict (Senecal et. al. 2001) where lower levels of self-determined motivation were associated with increased conflict between the study domains.

However, not in accordance our initial hypothesis, is the finding that self-determined motivation for passive leisure predicted goal conflict, thus the more a participant chose to engage in passive leisure like reading or listening to music because of inherent enjoyment or because it

as in-line with their values, the more conflict they experienced between the goals of engaging in these passive leisure activities versus physically active leisure pursuits. Ratelle et. al (2005) found that leisure motivation did not influence school-leisure conflict. They hypothesized that one reason for this was that school is a less self-determined context overall – study participants were motivated to pursue their academic goals for external reasons such as parental expectations - and therefore it was the obligation to engage in something that was not deemed as fun (i.e., school) relative to other activities (i.e. leisure) that explained the conflict to some degree.

In this study, looking at two types of leisure within the larger leisure domain, the results indicate that opposing motivations (non-self-determined toward physically active and self-determined toward passive leisure) increased goal conflict suggesting that feeling obligated to do one thing (non-self-determined physically active leisure e.g. going for a run) when you would really like to do something else (self-determined passive leisure e.g. reading a book) can lead to conflict. One other study looking at conflict between life contexts suggests a similar conclusion with respect to opposing motivations. Boiché and Sarrazin (2007) in a study of conflict between sport and other life contexts among adolescents also found that while increased self-determined motivation toward school negatively predicted school-sport conflict, increased self-determined motivation toward sport positively predicted school-sport conflict again suggesting that opposing motivations may lead to conflict.

Self-determination theory posits that more self-determined forms of motivation lead to more positive outcomes. In this study, the increase in goal conflict predicted by non-self-determined motivation for physically active leisure is consistent with the theory. However, self-determined motivation for passive leisure also predicted increased goal conflict, which is counter to the predictions of self-determination theory. Prior studies (Ratelle et. al. 2005; Senecal et al.,

2001) propose that self-determination provides a degree of protection against goal conflict, suggesting that the more self-determined an individual is toward each of the potentially conflicting life contexts (school, leisure, work) the less conflict arises among those domains. However, the results presented here and consistent with Boiche and Sarrazin (2007), suggest that opposing motivations between two contexts – self-determined versus non-self-determined or desire versus obligation - may contribute to goal conflict and counter some of these proposed protective effects. The inclusion of another theoretical perspective may provide insight into the inconsistent results reported to date.

The Dualistic Model of Passion proposed by (Vallerand, et al., 2003) provides a theoretical framework to look at the influence of harmonious versus obsessive passion toward leisure activities. Harmonious passion comes from a self-determined internalization of an activity in-line with one's core values whereas obsessive passion comes from a non-self-determined internalization of an activity that is in conflict with one's self-concept. In a study of conflict and passion in leisure, Stenseng (2008) concluded that conflict mediated the influence of passion on outcomes in life domains such as family, work and relationships, namely that obsessive passion was associated with negative outcomes e.g. negative influences on their relationship with their family. In the present study, passion for the physically active or passive leisure activities in addition to motivation may be influencing the resulting goal conflict between these two domains. A future study may wish to include passion in the examination of conflict, leisure engagement and well-being to provide further insights into the relationship between these factors.

The final purpose of the study was to examine the influence of goal conflict between physically active and passive leisure on well-being. As hypothesized, higher goal conflict was

associated with lower well-being. This result is consistent with Riediger and Freund's work demonstrating the negative influence of goal conflict on well-being (Riediger & Freund, 2004, 2008) as well as the conclusion by Bailis & Thacher's (2011) among university students, namely that increased distress can result from goal conflict involving physical activity. However, this study expands on these prior results by comparing two contexts traditionally thought to contribute to well-being, physically active and passive leisure (Biddle & Mutrie, 2008; Brajsa-Zganec, Merkas, & Sverko, 2011) and does so in a another population, namely physically active working mothers. The results provide a unique look at the negative influence of goal conflict between physically active and passive leisure on well-being, after controlling for leisure activity engagement, in a sample of women who may already be at higher risk of conflict due to their multiple life roles and a propensity to feel obligated to engage in health-promoting leisure activities (Vancour, 2009). However, the data suggest that the simple addition of leisure activities may not always result in increased well-being and that conflict between these activities and other life domains need to be considered.

Practical Applications

The results provide a novel opportunity to better understand the factors that can influence the well-being of middle class physically active working mothers. These factors may be worthwhile to consider in developing or improving interventions to enhance well-being in this population. Health promotion activities often focus on the need to incorporate physical activity (Canadian Society for Exercise Physiology, 2011) and other leisure pursuits (Canadian Index of Wellbeing, 2012) to enhance physical health and well-being. Given the study results however, when time resources are limited and the potential for increased goal conflict is high, strictly

adding activities typically thought to have a positive influence on well-being may result in increased conflict with other life goals and a subsequent decrease in well-being.

The results raise the question of whether well-being could be optimized simply by addressing the time constraint felt by physically active working mothers. The accompanying decrease in goal conflict may increase well-being independent of adding any well-being enhancing activities. For middle class working mothers, guidance to ‘make time’ for physical activity or passive leisure with the aim of improving well-being needs to be balanced with the removal or moderation of other time consuming activities (e.g. housework, commuting, child care) to allow for leisure to occur without amplifying perceptions of time constraints and goal conflict. This could take the form of incorporating physical activity into one’s daily commute to work or hiring help with housekeeping activities to free up more time for leisure.

Strategies to reduce conflict between physically active and passive leisure goals by bringing together elements of each into a single activity may also be effective in enhancing well-being. For example, combining physical activity with socializing by exercising in the company of others or listening to a book while out on a run may reduce conflict between physically active and passive leisure goals and result in increased well-being. These strategies may also address the motivational conflict between physically active and passive leisure by making their physical activity more enjoyable thus increasing self-determined motivation to be physically active.

Limitations and Future Directions

In determining the influence of goal conflict on well-being, we controlled for the relative number of days participants engaged in physically active and passive leisure in our analyses. The results showed that engaging in passive leisure was not a significant predictor of increased well-being. This lack of influence, while not expected, could be the result of the lack of

sensitivity of the passive leisure engagement measure. Indeed, having a more precise measure of engagement such as minutes/day of leisure engagement as opposed to days engaged in leisure over the 14-day experience sampling period may have provided a more sensitive measure to capture inter-participant variation in leisure engagement and its influence on well-being.

Recruiting from a population who, by the inclusion criteria of the study, already had very full schedules, did present a challenge. However, a larger sample size would have permitted more comprehensive modeling of relationships between time constraints, motivation, conflict, and well-being and the inclusion of other predictors such as passion discussed previously.

While this study provides unique insights regarding physically active, middle class working mothers as a distinct group of individuals, it limits the generalizability of the results to a broader population. Studying a more culturally diverse population of women of varied race, class, marital status, and region would make a valuable contribution to this field of research and further inform interventional strategies for promoting well-being in mothers. Similarly, previous research has also demonstrated that motivation, conflict and the consequences of conflict can vary across genders (Senecal et al., 2001). Repeating a similar study in a population of men would make a valuable contribution to this field of research and further inform interventional strategies for promoting well-being across genders.

The purpose of this study was to better understand the relationships between time constraints, goal conflict and motivation for physically active and passive leisure and the influence of conflict on well-being. The results call for the need to address both the availability of time for leisure and motivation for leisure activities when designing interventions to enhance well-being in women with multiple life roles. Notwithstanding certain limitations, the present study should propel important future work of its kind to better our understanding of the

role of self-determination in goal conflict and inform interventions focused on enhancing well-being.

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Chapter III - Supplementary results

This chapter contains further socio-demographic descriptive statistics of the study participants at the time of participation in the study. While these details could not be included in the main analysis of the article, they add context to the study sample and interpretation of results.

Time constraints and supports

The value for time constraints was determined from questions asking participants how satisfied they were with the time they had available for physically active and passive leisure. With 0 representing *Satisfied* and 3 representing *Unsatisfied*, mean satisfaction with time scores for both physically active leisure (0.81 +/- .75) and passive leisure (0.71 +/- .82) were similar with participants on average falling closer to the satisfied end of the scale.

Additionally, participants also appeared quite satisfied with the level of support they received both inside and outside the workplace. When asked on a scale of 1 (*Not at all Satisfied*) to 7 (*Very Satisfied*) how satisfied they were with the physical and emotional assistance they received, participant mean ratings for supports in their home life and work life were 5.56 ($SD = 1.29$) and 5.29 ($SD = 1.15$) respectively. The average category for participant annual household income was \$100,000 and \$124,999

Other Correlations with time constraints and goal conflict

While the sample size did not allow for the inclusion of additional variables in the main analysis of the article, further correlations were conducted to determine if there were significant relationships between socio-demographic characteristics of the participants and the time constraints and goal conflict variables. Correlations were conducted between time constraints and each of the following four variables: children's age, hours of paid work, hours of unpaid work, and hours of unpaid childcare. No statistically significant relationships were found. A

similar analysis correlating goal conflict with the same four socio-demographic variables yielded the same result.

Chapter IV - General Discussion

Overview of Results

The general purpose of the study was to examine influences on goal conflict between physically active and passive leisure and the relationship between goal conflict and the well-being of physically active working mothers. More specifically, the study had three aims: 1) to determine if there was a relationship between time constraints for participation in physically active and passive leisure and goal conflict between these two leisure domains; 2) to evaluate the influence of self-determined and non-self-determined motivation for each of the leisure domains on goal conflict between them and; 3) to determine if goal conflict between physically active and passive leisure had any influence on well-being when controlling for the positive effects expected as a result of participation in each of these two leisure domains.

The expected results were as follows: 1) Due to the anticipated limited time resources available within the sample and consistent with work by Maes and Gebhardt (2000) a positive correlation between time constraints to engage in physically active and passive leisure activities and reported conflict between these domains was expected; 2) Self-determined motivation toward physically active and passive leisure was expected to be associated with decreased conflict as predicted by SDT (Deci & Ryan, 2000) and reported by Ratelle et al. (2005) in their school-leisure conflict work; 3) Goal conflict between physically active and passive leisure was expected to be negatively associated with well-being when controlling for the expected positive influences of participation in physically active and passive leisure. This is consistent with literature on the relationship between goal conflict and well-being, particularly that of Riediger and Freund (2004).

With respect to the relationship between time constraints and goal conflict, a significant positive correlation was found between time constraints for physically active and passive leisure and conflict between these two leisure domains. This result supports the initial hypothesis and demonstrates that despite relatively high levels of satisfaction with time available for leisure, women with multiple life roles experience increased conflict between physically active and passive leisure when time constraints are high. Additional correlations of both the time constraints and goal conflict variables with each of four socio-demographic characteristics of the study participants (children's age, hours of paid work, hours of unpaid work and hours of unpaid childcare) did not uncover any other significant relationships.

With regards to purpose two, results of the regression analysis to determine the influence of self-determined and non-self-determined motivation for physically active and passive leisure on conflict between the two were partially consistent with the expected results based on SDT and prior goal conflict research. Contrary our initial hypothesis, self-determined motivation for passive leisure was associated with an increase in goal conflict. Meanwhile, self-determined motivation for physically active leisure did not show any association with goal conflict but non-self-determined motivation for physically active leisure was associated with increased goal conflict as expected. These results suggest that opposing motivational orientations (self-determination for passive leisure and non-self-determined motivation for physically active leisure) increase goal conflict between these two leisure domains.

Finally, with respect to the influence of goal conflict between physically active and passive leisure on well-being, our initial hypothesis was supported showing that conflict between these two domains had a negative influence on well-being.

Strengths

This study offers unique theoretical and practical contributions. Prior research in the area of goal conflict has tended to compare conflict between two very different contexts e.g work-family, school-sport (Senecal et al., 2000; Ratelle et al., 2005). This study is the first of its kind to look at conflict within the context of leisure itself and specifically to look at the influence of conflict between two types of leisure (physically active and passive) both traditionally thought to contribute to well-being. Additionally, this study is the first of its kind to look at the role of self-determined and non-self determined motivation on conflict between active and passive leisure, the influence of time constraints on this conflict and the subsequent influence well-being.

The study offers conclusions about the relationships among time constraints, leisure goal conflict and well-being within a sample of physically active women with multiple life roles and makes a novel contribution to research on the well-being of women. By examining the influence of goal conflict between physically active and passive leisure pursuits on well-being, the study provides evidence for practical interventions to decrease conflict and optimize well-being for similar individuals.

The study employed a use of electronic experience sampling which permitted the application of hierarchical regression that controlled for engagement in physically active and passive leisure in determining the influence of goal conflict on well-being. In addition, by asking participants to evaluate goal conflict experienced during the two-week experience sampling period, the engagement and goal conflict measured referenced a recent and consistent period of time.

The method of data collection for the experience sampling portion of the study was chosen to decrease the burden of data capture on the part of participants and reduce the risk of

error by researchers in the transfer of data for analysis. Participants reported very few challenges with using the custom made application for the iPod Touch or iPhone throughout the two-week period of data collection. Those who had very little experience using similar devices also reported this positive feedback. This anecdotal evidence supports the use of similar devices as a sound method of data capture for experience sampling studies among time constrained subjects.

Contributions to the Literature and Theoretical Implications

Time constraints and goal conflict. The positive correlation between time constraints and goal conflict establishes that time constraints for leisure influence goal conflict between physically active and passive leisure in women with multiple life roles. This result demonstrates the potential consequences of women's lack of available time for leisure as reported by Statistics Canada survey results (Statistics Canada, 2011) and similarly reported in Western European countries (Gimenez-Nadal and Sevilla-Sanz, 2010). Similarly Pearson (2008), in a study of employed women in the US, found a positive correlation between role overload and lower leisure satisfaction which is particularly concerning given the propensity for women to adopt multiple life roles (Vancour, 2009) that may tax the time resources they have available for physically active and passive leisure.

Self-determined and non-self-determined motivation and goal conflict. The results of this thesis challenge some aspects of prior studies that have used HMIEM and SDT to explore the influence of contextual motivational orientation on goal conflict. To date, two studies have proposed a protective effect of self-determination on goal conflict (Ratelle et. al. 2005; Senecal et al., 2001). They concluded that consistent with SDT, the more self-determined an individual is toward the contexts involved, the less conflict results. The increase in goal conflict predicted by non-self-determined motivation for physically active leisure in this study is consistent with

these prior conclusions. The more the women were motivated to engage in physically active leisure out of a sense of obligation as opposed to an inherent desire, the more conflict they felt between their physically active and passive leisure goals.

However, with respect to passive leisure, self-determined motivation predicted goal conflict. The more the women were motivated to engage in passive leisure because of an inherent desire or out of choice, the more they felt conflict between their physically active and passive goal pursuits. This result runs contrary to SDT and particularly organismic integration theory that postulates more positive outcomes (less conflict) as a result of more self-determined motivational orientations. The theory suggests that the more harmonious the integration of behaviours into an individual's life (i.e. the more self-determined), the more harmonious and less conflicting are the relationships between the related goals and values thus less goal conflict arises (Deci & Ryan, 2000).

The results support a notion that conflicting motivational orientations – self determined versus non-self-determined – or feeling obligated to engage in one activity (physically active leisure) but really wanting to do another (passive leisure), actually contributes to contextual goal conflict. While these results seem to run contrary to SDT, Boiché and Sarrazin (2007) found similar results in their study of sport and life contexts where they found opposition in motivational orientations (self-determined motivation toward sport and non-self-determined motivation toward school) also predicted school-sport conflict. The results presented here further support the work of Boiché and Sarrazin (2007) however, they also concluded that the divergence of their study results from those predicted by SDT may be explained by methodological considerations

Boiché and Sarrazin (2007) used a customized measure of goal conflict for their study different from the Intergoal Relations Questionnaire used here and in Ratelle et al. (2005), and different again from the custom designed goal conflict measure used by Senecal et al. (2001). This variation in goal conflict measurement is one explanation provided by Boiché and Sarrazin (2007) for the inconsistency in results between their study and other investigations of the influence of motivational orientation on goal conflict. However, the study presented here used the same validated measure used by Ratelle et al. (2005) and yet the outcome was consistent with Boiché and Sarrazin that opposing motivational orientations predict goal conflict calling for further consideration of this result. Indeed it does not seem unreasonable to conceive that when a time-constrained woman with little time for leisure must choose between two activities – one that she feels obligated to do and one that she wants to do for the innate satisfaction and enjoyment - that conflict between the goals of engaging in each may conflict.

Goal Conflict and Well-being. The study confirmed the expected negative influence of goal conflict between physically active and passive leisure on well-being and the finding is consistent with previous studies on goal conflict and well-being (Riediger & Freund, 2004; Pearson, 2008). Given the importance of leisure in positively influencing the psychological health of women with multiple life roles (Pearson, 2008), this finding is an important consideration in understanding the leisure-well-being relationship. The body of literature supporting the importance of physically active and passive leisure on well-being is well established (Brajsa-Zganec et al., 2011; Iwasaki et al., 2006; Trenberth & Dewe, 2002; Tkach and Lyubomirsky, 2006) and yet the results suggest that the perception that one leisure activity is conflicting with another can negatively influence the positive influence of leisure and may result in lower levels of well-being. The mechanism at work can only be hypothesized, however other

studies on leisure in women have associated leisure with negative feelings when it conflicts with other life roles. Gahagan, Loppie, Rehman, Maclellan and Side (2007) in their Canadian study of the impact of leisure on women's health highlighted that a lack of resources – a known precursor to conflict - to fulfill caregiving responsibilities made leisure feel like it was an additional burden or task that the women were required to complete that simply added stress to their day. Maguire (2008) in her examination of the fitness industry found that that commercialization of fitness has transformed physical activity into another obligation that women are expected to fulfill. For middle class, physically active, working mothers it can be hypothesized that efforts to fit different forms of leisure into their already full lives may act like a burden and result in lower well-being.

In conducting the analysis to determine the influence of conflict on well-being, the relative number of days participants engaged in physically active and passive leisure was controlled for. In the first step of the regression analysis, physically active and passive leisure were both added into the regression. As expected, days engaged in physically active leisure positively influenced participant well-being indicating that the more days the participants engaged in physically active leisure, the higher their well-being scores. This is consistent with the extensive body literature demonstrating the positive influences of physically active leisure on well-being (Biddle & Mutrie, 2008; Penedo & Dahn, 2005; Warburton, Nicol, & Bredin, 2006). While prior research has reported the positive influence of both physically active and passive leisure on well-being, engaging in passive leisure was not a significant predictor of increased well-being in this study. This lack of significance, while not expected, could be the result of the lack of sensitivity of the passive leisure engagement measure that only measured the number of days in which participants engaged in passive leisure. While the experience sampling portion of

the study was designed to capture the number of minutes engaged in passive leisure at the end of day, the resulting data set was missing large amounts of data.

On average, 57% of the days when participants responded ‘Yes’ to whether they had engaged in passive leisure that day, they did not provide the number of minutes. Two factors may have played a role in this poor response rate. Despite not asking about leisure participation on every day of the experience sampling portion of the study, there may still have been too many questions included in the end of day survey leading to respondent burden (Backor, Golde, & Nie, 2007). Secondly, participants may have found it challenging to estimate the number of minutes of passive leisure they engaged in during a single day. In contrast to physically active leisure, passive leisure is more likely to take the form of many short bouts throughout the day requiring extensive reflection on the day’s events in order to recall the length of each bout and to estimate a total for the day.

Further adding to the challenge of determining whether passive leisure contributed to well-being, the breadth of activities that could be considered passive leisure is quite broad. Some passive leisure activities may have a greater impact on well-being than others. Taken to an extreme, some passive leisure activities could also have a negative impact on well-being such as computer use to the point of addiction (Stenseng, 2008). Future research should explore optimal methods of capturing passive leisure engagement. This and other future research recommendations are included in the next section.

Limitations and Future Research

While this study provides unique insights regarding physically active, middle class mothers, caution with respect to applying the results more broadly is warranted. The sample itself was made of up predominantly married or common-law women who were quite satisfied

with the time they had available for leisure and with the physical and emotional assistance they received both in the home and the work place. On average, the women came from homes with a household income of greater than \$100,000/year and were of a healthy BMI. Different results might be expected among a group of women with a different socioeconomic status, class, region, race. Additionally less physically active women or women who felt more time constrained or less supported in either their workplace or home may have responded quite differently. A similar study involving a more diverse sample of woman may reveal different relationships among time constraints, motivation, conflict and well-being. Similarly, previous research has also demonstrated that motivation, conflict and the consequences of conflict can vary across genders (Senecal et al., 2001). Repeating a similar study in a population of men would make a valuable contribution to this field of research and further inform interventional strategies for promoting well-being across genders.

Boiché and Sarrazin (2007) made reference to the breadth of methods used to date to measure goal conflict making the comparison of results across studies challenging. Given the number of measures available for use and the lower than desirable Cronbach's alpha for the Intergoal Relations Questionnaire used in this study, further development of validated goal conflict measures could assist in improving the validity of goal conflict assessment and support better comparability of study results. Additionally, this study only evaluated goal conflict between physically active and passive leisure however, as per HMIEM, facilitative interactions can also occur between two contexts therefore there may be times when one leisure activity may meet the needs of another. A more comprehensive examination of physically active and passive leisure goals could include a measure of goal facilitation to evaluate when one leisure activity e.g. running with a friend, may help to meet another goal e.g. social interaction that could be met

via active or passive means. A qualitative component consisting of participant interviews could also facilitate a more in depth understanding of the goal conflict experience and help identify further variables that may influence it.

While not a specific goal of this study, a further evaluation of the contribution of both physically active and passive leisure to well-being to determine if there is an ideal balance of the two to optimize well-being would certainly better inform the leisure well-being relationship. Future research may consider collecting leisure engagement at a finer level of detail by asking participants to record minutes of leisure engagement using an experience sampling method. While participants were asked to list examples of passive leisure activities and to reflect on those listed throughout the study, to ease the response burden and improve the completeness of the captured data, participants could be asked identify primary specific leisure activities for them to track over the two week period.

Additionally, Keyes (2002) highlights the importance of both eudemonic and hedonic elements of well-being in achieving mental health and moving toward a state of ‘flourishing’ as opposed to ‘languishing’. While this study used a compilation of a eudemonic and hedonic measure of well-being, a factor analysis to examine the influence of physically active and passive leisure engagement and conflict between the two on each of these well-being components may provide additional insight into the mechanisms at work.

Based on the HMIEM, this study focused strictly at the influence of SDT’s contextual motivations on conflict between the two leisure contexts of physically active and passive leisure. Situational motivational factors were not included but certainly present opportunities for further study. For instance, applying an experience sampling methodology to measure situational motivation and goal conflict prior to engaging in physically active and passive leisure activities

would provide insight into the variability of the relationship between motivational orientation and goal conflict and further support or refute to role of opposing motivational orientations in predicting goal conflict.

Another opportunity to expand on this research and further understand situational motivation and conflict is via research on the self. Specifically O'Connor, De Dreu, Schroth, Barry Lituchy and Bazerman (2002), looked at role of the 'want self' versus the 'should self' during times of interpersonal conflict. In participant recall of prior occasions of interpersonal conflict, the authors found the 'want self' generated a far more emotional response from participants and was a better predictor of behaviour than the more rational responses associated with the 'should self'. These proposed constructs parallel the motivational orientations of SDT where the *should* response might be expected to result from non-self-determined motivation and the *want* response from self-determined motivation. Applying similar methods to those used by O'Connor et al. (2002) to evaluate the *should* and *want* reactions of women during times of leisure conflict might provide insight as to the role of the self and emotionality in predicting physically active versus passive leisure conflict and engagement.

The Dualistic Model of Passion proposed by (Vallerand, et al., 2003) is an additional theoretical framework through which conflict between physically active and passive leisure and its outcomes can be examined. The model provides the opportunity to add the influence of harmonious versus obsessive passion toward leisure activities to the study of leisure conflict and well-being. Vallerand's model proposes two different types of passion – harmonious and obsessive. Harmonious passion is characterized by a desire to engage in an activity that is important to the individual and in harmony with their identity and other aspects of their life. In contrast, obsessive passion is characterized by an intra or interpersonal pressure to engage in the

activity that might stem from feelings of social acceptance or self-esteem. Although they may like an activity, individuals tend to feel an uncontrolled compulsion to engage where obsessive passion is present. This lack of control is postulated to lead to conflict with other activities in a person's life (Vallerand et al., 2003). In addition to conflict, Rousseau and Vallerand (2008) found that obsessive passive was associated with decreases in subjective well-being whereas harmonious passion was associated with increases in well-being.

In a prior study using the Dualistic Model of Passion to look at the outcomes of conflict between leisure and other life domains, Stenseng (2008) concluded that conflict mediated the influence of passion on the life domain outcomes of family, work/studies and partner/spouse relationships. The study concluded that obsessive passion for leisure was associated with negative outcomes in all of the life domains studied. A future study may wish to include passion for both physically active and passive leisure in the examination of conflict, leisure engagement and well-being as this may provide further insight into the relationship between these factors.

While recruiting from a population who, by the inclusion criteria of the study, already had very full schedules, did present a challenge, a larger more diverse sample of mothers would have permitted more comprehensive modeling of relationships between time constraints, conflict, motivation and well-being using multiple predictors and controlling for socioeconomic characteristics.

Practical Applications

Despite its limitations, the results suggest a number of practical applications worth exploring. Given the negative influence of goal conflict between leisure contexts on well-being, efforts to reduce this conflict are warranted. The correlation between time constraints for leisure and goal conflict, suggests that encouraging lifestyle changes that involve the addition of leisure

activities to balance physically active and passive leisure pursuits should not be done in isolation of evaluating the time available for such activities. In a population of physically active, middle class working mothers, the decision to add more passive leisure activities such as reading or meditation should take into consideration the leisure time currently allocated to physical activity and other life roles. Identifying opportunities to reduce time commitments to some goals such as physique ambitions may reduce the perception of time constraints and the risk of conflict arising between the leisure activities.

Bringing together elements of both physically active and passive leisure into a single activity may also be effective in enhancing well-being. For example, combining physical activity with socializing by exercising in the company of others or listening to a book while out on a run may actually contribute to goal facilitation by reducing the time required for each type of leisure and contribute to a reduction in goal conflict between physically active and passive leisure goals.

Other strategies to reduce conflict between physically active and passive leisure may come from efforts to reduce opposing motivational orientations. Given the pressure some women feel to engage in health promoting behaviours such as physical activity and stress management (Vancour, 2009) and the active promotion of physical activity for health, the motivational orientation to engage in physically active leisure can tend toward the non-self-determined end of the SDT autonomy continuum. Similar to the strategies proposed to reduce time constraints, adding enjoyable elements of passive leisure to physically active leisure sessions by exercising with friends or listening to books while working out, may make physically active leisure more enjoyable and foster increased self-determined motivation. Additional strategies that target increasing self-determined motivation for physically active leisure may

include encouraging women to select day-to-day leisure activities based more on what they feel like doing (self-determined motivation) and less on what a structured training schedule dictates (non-self-determined motivation). For some physically active mothers, this may require adopting more moderate or flexible physical training schedules and goals.

Conclusion

The purpose of this study was to better understand the relationships between time constraints, motivation and goal conflict between motivation for physically active and passive leisure and the influence of this conflict on well-being. The results suggest that time constraints for leisure increase conflict between physically active and passive leisure and that this conflict is increased by opposing motivational orientations toward these two type of leisure. And finally conflict between physically active and passive leisure negatively influences well-being.

The study challenges the conclusions drawn from the majority of the SDT based motivation-conflict studies to date that self-determined motivation results in less goal conflict and calls for improved goal conflict measures and further research to explore this relationship. The results propose a need to address both the availability of time for leisure and motivation for leisure activities when designing interventions to enhance well-being in physically active, middle class mothers. Notwithstanding certain limitations, the present study should propel important future work of its kind to better our understanding of the role of self-determination in goal conflict and inform interventions focused on enhancing well-being.

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Appendix A – Contributions of the Authors

The contributions of the three authors (Tamara Williams, Eva Guerin and Michelle Fortier) referenced on the journal article comprising this thesis are outlined in this appendix.

All three authors played major roles in all stages of the research project and the preparation of the journal article. This thesis was part of a larger research project conceptualized by Dr. Fortier and Eva Guerin. The specific topic for this thesis was decided upon through collaborative discussions between Dr. Fortier and myself based on an interest I had in whether squeezing physical activity into the already full schedules of working mothers with multiple life roles had the potential for negative consequences.

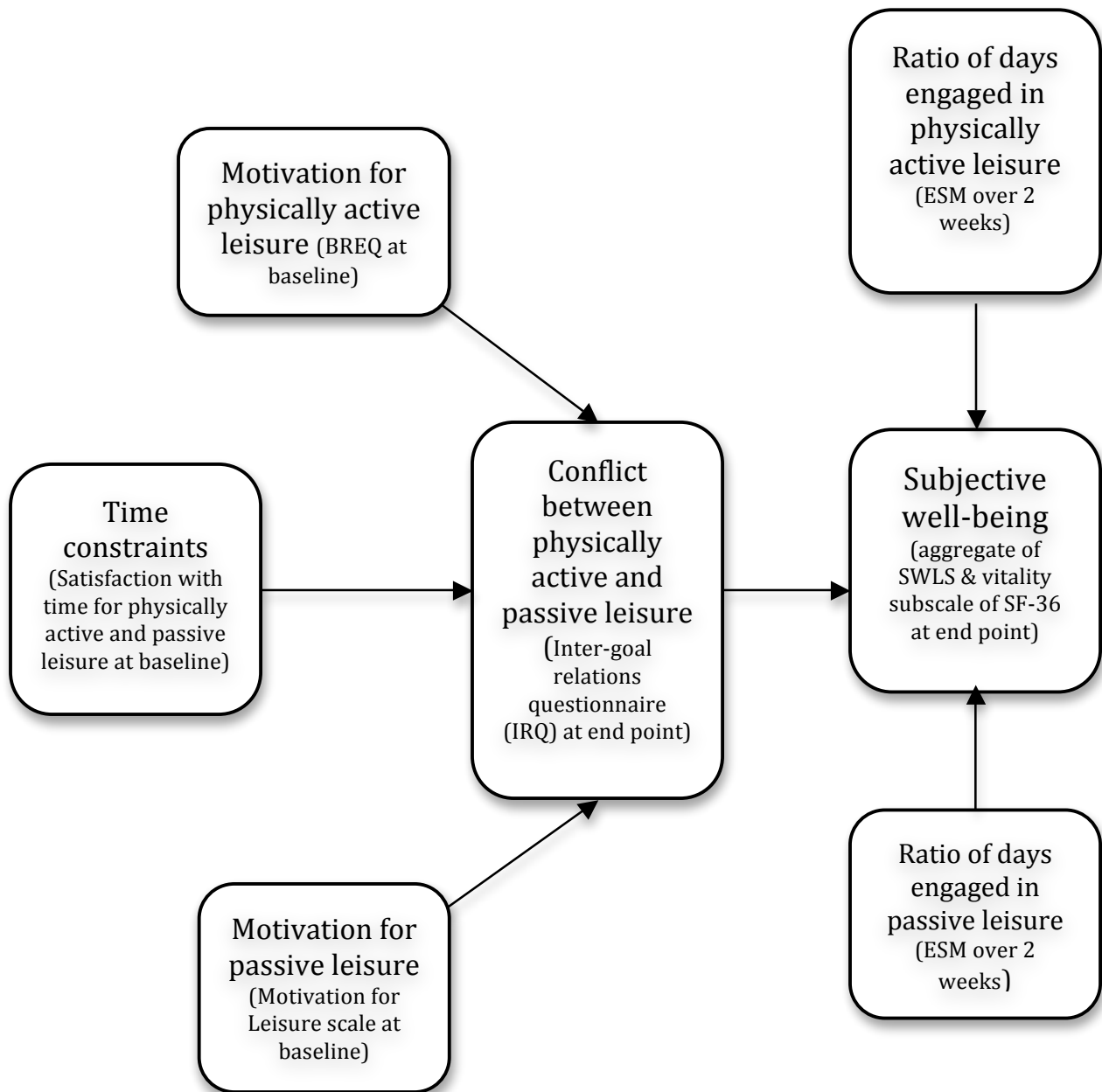
While some questionnaires were already established as part of the larger study, I worked with Dr. Fortier to identify and adapt existing, or develop new, questionnaires required to address the research questions we had established and determine where they would fit into the larger study design. Under the supervision of Dr. Fortier, Eva Guerin took the lead in finalizing the protocol for the larger study and working with a software developer to design and test the mobile application used for the Electronic Experience Sampling. I assisted in reviewing the protocol and in some preliminary testing of the application. Eva and I worked together to identify opportunities for participant recruitment and follow up with organizations willing to support us in our recruiting efforts. All interested participants contacted Eva for scheduling and we shared data collection duties as our availability permitted.

In terms of data management, we had a research assistant to support us in entering the results of the baseline and end point questionnaires. I then took the lead in reviewing

the data entry to verify its accuracy. Further data cleaning activities were divided between Eva and myself. I was primarily responsible for conducting the data analysis for the thesis under the guidance of Dr Fortier to determine the direction of further analysis, address data challenges and assist with the interpretation of results.

The journal article was a collaborative effort of all three authors. I was responsible for producing the initial drafts of all sections, which were subsequently reviewed by both Eva and Dr. Fortier and returned to me for revisions. The final article contained in this document is the product of this collaboration and has been submitted to *Applied Psychology: Health and Well-being*.

Appendix B - Diagrammatic representation of relationships studied



Appendix C - Questionnaires

Baseline Questionnaires

Demographics Form

Participant Number: _____ (provided by research team)

1. Age: _____

2. Your occupation: _____

3. Education level (select highest achieved):

No diploma or certificate

High School degree

Apprenticeship or trades certificate

College or CEGEP degree (≤ 1 year)

College or CEGEP degree (≥ 1 year)

Some university studies (minimum of 1 year)

Bachelor's degree

Master's degree

Degree in medicine, dentistry, veterinary medicine, or optometry

Doctorate degree

4. Total Household Income (select one):

$< \$20,000$ $\$20,000 - 29,999$ $\$30,000 - 39,999$ $\$40,000 - 59,999$

$\$60,000 - \$79,999$ $\$80,000 - 89,999$ $\$90,000 - 99,999$ $\$100,000 -$

$124,999$ $\$125,000 - 149,999$ $> \$150,000$

5. Hours of paid work/week: _____

6. a) Indicate approximately how many hours you spend per day (typical weekday) on unpaid household work (cooking/washing up, housekeeping, maintenance and repair, shopping):

1 hour or less 2 hours 3 hours 4 hours 5 hours 6 hours or more

b) Indicate approximately how many hours you spend per day (typical weekday) on unpaid child care (select one):

1 hour or less 2 hours 3 hours 4 hours 5 hours 6 hours or more

7. Ethnicity (select all that apply):

First Nations (North American Indian), Métis or Inuk (Inuit) White Black

South Asian (e.g. East Indian, Pakistani, Sri Lankan, etc.) Southeast Asian (e.g.

Vietnamese, Cambodian, Malaysian, Laotian, etc.) West Asian (e.g., Iranian, Afghan, etc.)

Korean Japanese Arab Chinese Latin American Filipino Other –

Specify _____

8. Marital status:

€ Single € Never legally married € Legally married (and not separated) € Separated, but still legally married € Divorced € Widowed € Common-law (**refers to two people who live together as a couple but who are not legally married to each other**)

9. Number of children: _____ (**living in the home, under the age of 18)

10. Age of children (list): _____

11. Do you have family members living in your home that require additional care due to physical, mental or cognitive health limitations (e.g., child, parent, etc.)?

Yes No

If Yes, Please specify: _____

12. a) In general, how satisfied are you with the amount of social support in your home life, that is, the physical and emotional assistance given to you by your family, friends, and others? (circle)

NOT AT ALL SATISFIED

1

2

3

4

5

VERY SATISFIED

6

7

b) In general, how satisfied are you with the amount of social support in your work/professional context, that is, the physical and emotional assistance given to you by your co-workers and/or friends? (circle)

NOT AT ALL SATISFIED

1

2

3

4

5

VERY SATISFIED

6

7

Godin Leisure-time Exercise Questionnaire (LTEQ; Godin and Shephard, 1985)

For all questionnaires in this study, **physical activity** occurs in your free/leisure time, lasts 20 minutes or more and is defined as:

*Bodily movement produced by the muscles resulting in expending energy. Physical activity may be classified in a number of ways such as sports (e.g., soccer), active recreational activities (running, yoga), and exercise (planned, structured, repetitive, such as weight training or a “body pump” class). This definition **EXCLUDES** occupational physical activity (e.g., instructing a spinning class) and physical household tasks (e.g., cleaning).*

1. Considering **A TYPICAL WEEK in the past 6 months**, how many times on average do you do the following kinds of exercise for more than 20 minutes during your free time? (**Write the appropriate number of times per week on the line.**)

A) STRENUOUS/VIGOROUS PHYSICAL ACTIVITY (HEART BEATS RAPIDLY)

(e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)

_____ Times per Week

B) MODERATE PHYSICAL ACTIVITY (NOT EXHAUSTING)

(e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)

_____ Times per Week

C) MILD PHYSICAL ACTIVITY (NOT EXHAUSTING)

(e.g., yoga, archery, fishing from a river bank, bowling, horseshoes, golf, snow-mobiling, easy walking)

_____ Times per Week

2. Considering a **TYPICAL WEEK in the past 6 months**, during your leisure-time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?

(Select one box)

Often

Sometimes

Never/Rarely

Satisfaction with Time Engaged in Physical Activity

3. How satisfied are you with the amount of time you spend engaging in physical activity? _____

**DISSATISFIED
TOO LITTLE TIME**

-3

-2

VERY SATISFIED

-1

0

+1

**DISSATISFIED
TOO MUCH TIME**

+2

+3

Behavioural Regulations in Exercise Questionnaire-2 (BREQ-2; Markland & Tobin, 2004)

Directions: We are interested in the reasons underlying peoples' decisions to engage, or not engage in physical activity. Using the scale below, please indicate to what extent each of the following items is true for you. Please note that there are no right or wrong answers and no trick questions. We simply want to know how you personally feel about physical activity.

| Not true for me | | Sometimes true for me | | Very True for me |
|-----------------|---|-----------------------|---|------------------|
| 0 | 1 | 2 | 3 | 4 |

WHY DO YOU ENGAGE IN PHYSICAL ACTIVITY?

- ___ 1. I consider physical activity a fundamental part of who I am.
- ___ 2. I can't see why I should bother engaging in physical activity.
- ___ 3. I get pleasure/satisfaction from engaging in physical activity.
- ___ 4. I engage in physical activity because it's fun.
- ___ 5. I feel under pressure from others to engage in physical activity.
- ___ 6. I consider physical activity to be part of my identity.
- ___ 7. I feel ashamed when I miss my physical activity.
- ___ 8. I don't see the point in engaging in physical activity.
- ___ 9. It's important to make the effort to engage in physical activity.
- ___ 10. I value the benefits of physical activity.
- ___ 11. It's important to me to engage in physical activity regularly.
- ___ 12. I engage in physical activity because my friends/family/partner say I should.
- ___ 13. I think that engaging in physical activity is a waste of time.
- ___ 14. I get restless if I don't engage in physical activity regularly.
- ___ 15. I enjoy my physical activity sessions.
- ___ 16. I feel guilty when I don't engage in physical activity.
- ___ 17. I engage in physical activity because other people say I should.
- ___ 18. I consider physical activity to be consistent with my values.
- ___ 19. I engage in physical activity because others will not be pleased with me if I don't.
- ___ 20. I engage in physical activity because it is consistent with life goals.
- ___ 21. I find physical activity a pleasurable activity.
- ___ 22. I feel like a failure when I haven't engaged in physical activity.

____ 23. I don't see why I should have to engage in physical activity.

Leisure Intake Questions

Non-physically active leisure activities are those that you choose to engage in during your free time and that do not include any significant movement (little physical energy). They can include socializing with family and friends, reading, surfing the internet, using Facebook, engaging in hobbies, games and other mentally stimulating activities. It can also include activities that are relaxing such as watching television or movies, meditating, listening to the radio or listening to music.

1) On a typical weekday or weekend day/night, indicate the non-physically active leisure activities that you have done most often in the last month, and to which you will **refer to throughout the questionnaire** (e.g., reading, watching TV, having coffee with friends). List a few:

2) Referring to your list of non-physically active leisure activities, on a typical **weekday** (i.e., Mon-Fri, day/night):

a. How much time do you spend engaging in non-physically active leisure? (Insert "0" for none, .5 for half hours, .25 for quarter of an hour, etc).

_____ **hour(s)**

b. What percentage of the above time do you spend engaging in non-physically active leisure that does not involve your children? (circle)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

c. In general, how satisfied are you with the amount of time you spend on non-physically active leisure overall during the week (i.e., Mon-Fri)? (circle)

**DISSATISFIED:
TOO LITTLE TIME**

VERY SATISFIED

**DISSATISFIED:
TOO MUCH TIME**

-3

-2

-1

0

+1

+2

+3

3) Referring to your list of non-physically active leisure activities, on a typical **weekend** day:

a. How much time do you spend engaging in non-physically active leisure? (Insert "0" for none, .5 for half hours, .25 for quarter of an hour, etc).

_____ **hour(s)**

c. What percentage of the above time do you spend engaging in non-physically active leisure that does not involve your children? (circle)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

- d. In general, how satisfied are you with the amount of time you spend on non-physically active leisure overall during the **weekends**? (circle)

DISSATISFIED:
TOO LITTLE TIME

VERY SATISFIED

DISSATISFIED:
TOO MUCH TIME

-3

-2

-1

0

+1

+2

+3

Leisure Motivation Scale (LMS-28; Pelletier et al., 1996)

Instructions: Referring to your list of typical non-physically active leisure activities, and using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons for which you practice this leisure. Please **circle** the appropriate number.

| Does not correspond at all | Corresponds a little | | Corresponds moderately | | Corresponds a lot | | Corresponds exactly |
|-----------------------------------|-----------------------------|----------|-------------------------------|----------|--------------------------|----------|----------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7 |

WHY DO YOU GENERALLY DO YOUR LEISURE ACTIVITIES?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. To avoid doing other tasks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Because I experience a lot of pleasure and satisfaction in learning new things. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Because in my opinion, it is a good way to develop social, physical or intellectual abilities that will be useful to me later. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. For the pleasure I feel in living exciting experiences. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I can't come to see why I do leisure activities, and frankly I don't really care. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. For the satisfaction I feel when I try to overcome interesting challenges. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Because it is very important for me to fill my free time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Because I don't like to appear as someone who does nothing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. For the pleasure of knowing more about subjects that appeal to me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Because it's one of the ways that I have chosen to make improvements on a personal level. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. For the sense of freedom that I experience while doing the activity. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I don't really know; I don't think that leisure activities suit me | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. For the pleasure I feel when I outdo myself in interesting activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. Because in life you absolutely need leisure activities to be happy. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Because sometimes it allows me to be appreciated by others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Because it allows me to deepen my understanding of subjects that interest me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Because it's the way I've chosen to acquire | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| abilities in other areas that are important to me | | | | | | | |
| 18. Because my leisure activities give me a real "high". | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. I don't really know; I have the impression that there isn't any activity that I could do very well. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. For the pleasure of surpassing myself while doing activities that are challenging for me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Because I absolutely must feel busy. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. To show others that I am a dynamic person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Because it allows me to explore many interesting domains. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Because doing leisure activities is one of the ways that allows me to develop other aspects of myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. For the simple pleasure of feeling deeply relaxed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Honestly, I don't know; I have the impression that I'm wasting my time when I do leisure activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. For the satisfaction I get while trying to master complex activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. Because I absolutely must have my leisure time to be in a good mood. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Experience Sampling Questions

1. 1) Did you engage in non-physically active leisure today?

a) YES b) NO

2. 2) If yes, how much time did you spend engaging in non-physically active leisure?

Hours _____ Minutes _____

Endpoint Measures

I. The Satisfaction with Life Scale (SWLS; Diener et al., 1985).

Directions: Below are five statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

| | | | | | | |
|--------------------------|-----------------|--------------------------|-----------------------------------|-----------------------|--------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Strongly disagree | Disagree | Slightly disagree | Neither agree nor disagree | Slightly agree | Agree | Strongly agree |

- ___ 1. In most ways my life is close to my ideal.
- ___ 2. The conditions of my life are excellent.
- ___ 3. I am satisfied with my life.
- ___ 4. So far I have gotten the important things I want in life.
- ___ 5. If I could live my life over, I would change almost nothing.

II. Vitality Subscale of the SF-36 (Ware & Sherbourne, 1992).

Directions: These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling, using the scale:

| | | | | | | | | | | |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|

| | | | | | |
|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|------------------------|
| None of the time | A little of the time | Some of the time | A good bit of the time | Most of the time | All of the time |
|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|------------------------|

HOW MUCH OF THE TIME DURING THE PAST 4 WEEKS:

- ___ 1. Did you feel full of pep?
- ___ 2. Did you have a lot of energy?
- ___ 3. Did you feel worn out?

___4. Did you feel tired?

III. Intergoal Relations Questionnaire (IRQ; Riediger, 2001).

1) In the last two weeks, how often has it happened that because of the pursuit of physical activity, you did not invest as much time into non-physically active leisure as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**

2) In the last two weeks, how often has it happened that because of the pursuit of non-physically active leisure, you did not invest as much time into physical activity as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**

3) In the last two weeks, how often has it happened that because of the pursuit of physical activity, you did not invest as much energy into non-physically active leisure as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**

4) In the last two weeks, how often has it happened that because of the pursuit of non-physically active leisure, you did not invest as much energy into physical activity as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**

5) In the last two weeks, how often has it happened that because of the pursuit of physical activity, you did not invest as much money into non-physically active leisure as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**

6) In the last two weeks, how often has it happened that, because of the pursuit of non-physically active leisure, you did not invest as much money into physical activity as you would have liked? (circle)

NEVER/VERY RARELY **VERY OFTEN**
1 **2** **3** **4** **5**