

Gender and Physically Active Leisure: Testing Constraints as Mechanism

by

Ruth Feng

A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Master of Arts

in

Recreation and Leisure Studies

Waterloo, Ontario, Canada, 2022

© Ruth Feng 2022

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Most adults fail to achieve the minimum amount of exercise for an active lifestyle (Troiano et al., 2008), which is at least 150 minutes per week of moderate-intensity exercise or 75 minutes per week of vigorous-intensity exercise in order to receive the health benefits associated with an active lifestyle (U.S. Physical Activity Guidelines Advisory Committee, 2008). However, in an objectively measured sample, more than 95% of American adults fail to achieve 30 minutes per day on most days of the week (Troiano et al., 2008). Moreover, women tend to be less physically active than men across age groups, and women over 50 years old are more likely to be inactive than men of similar ages (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). This finding may be related to various phenomena. For example, a typical image of traditional gender roles for women is someone who is a "wilting violet" (Hochschild, 2002) who needs support from others to function fully; Women are expected to be mothers with children living at home who devote more time to housework and parenting and have less leisure time than fathers (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006); There is also an economic gender gap with inequalities in both the quantity and quality of women's economic involvement (Medina-Claros et al., 2021). In leisure studies research, Crawford and Godbey's leisure constraints (1987) may help explain some of these inequities in access to leisure related to gender. In addition to leisure constraints, I will draw on Henderson's (1994) five stages in feminist leisure research, Bem's (1993) gender role ideology, Huyck's gender-role socialization (1999) to help explain gendered patterns of leisure participation. The factors proposed to explain these gendered constraints are agency (intrapersonal), division of domestic labor (interpersonal), and socioeconomic status (structural). They were chosen to align with both the choices of earlier researchers and the headings in Crawford's leisure constraints model.

Keywords: leisure constraints, feminist leisure research, gender role ideology, gender-role socialization, gendered constraints, agency, division of domestic labor, socioeconomic status

Acknowledgements

To Dr. Steven Mock, my supervisor, thank you for your continued support to guide me and your enthusiasm towards this topic during the whole process. Always asking me to test various analyses. I also remember the dry jokes, which are helpful as well.

To my husband and parents thank you for your unconditional accompany and support all the time, so I could achieve this accomplishment today.

To Dr. Luke Potwarka, my committee member, thank you for being interested in my research and posing thoughtful questions.

To Dr. Lisbeth Berbary, my independent reader, thank you for always being open-minded.

To the University of Waterloo, especially Ron McCarville and Mary McPherson, thank you for sharing your profound knowledge and life experiences with me.

Table of Contents

Author's Declaration	ii
Abstract.....	iii
Acknowledgements	iv
List of Tables	vii
List of Figures	viii
1.0 Introduction.....	1
1.1 Purpose of the Study	2
2.0 Literature Review	4
2.1 Gender Disparity in Midlife Adults' Physical Activity.....	4
2.2 Leisure Constraints	6
2.3 Feminist Leisure Studies.....	7
2.4 Gender Role Socialization	7
2.5 Gender Role and Leisure	9
2.6 Gender-based Leisure Constraints	9
2.6.1 Agency	10
2.6.2 Division of Domestic Labor.....	11
2.6.3 Socioeconomic Status	12
2.7 Summary.....	12
2.7.1 Hypotheses.....	13
3.0 Methodology and Methods.....	15
3.1 Methodology	15
3.2 Data Source	15
3.3 Sample.....	16
3.4 Variables and Scales	16
3.5 Analysis Plan	18
4.0 Results.....	19
4.1 Descriptive Statistics.....	19
4.2. Correlation Analysis	20
4.3 Regression and Mediation Analysis.....	20
5.0 Discussion	25

5.1 Limitations and Future Research	26
5.2 Conclusion	27
References.....	28

List of Tables

Table 1. Means, percentages and standard deviations of descriptives	19
Table 2. Correlation of female, age, children, agency, division of domestic labor, SES, light physical activity, moderate physical activity, and vigorous physical activity	20
Table 3. Regression coefficients examining associations of light physical activity with “female”, by agency, division of domestic labor, SES and the control variable	21
Table 4. Total effects, direct effects, and bootstrap analysis of indirect effect for the association of light physical activity with "female" mediated by agency, division of domestic labor, and SES	21
Table 5. Regression coefficients examining associations of moderate physical activity with “female”, by agency, division of domestic labor, SES and the control variable	22
Table 6. Regression coefficients examining associations of vigorous physical activity with “female”, by agency, division of domestic labor, SES and the control variable	23
Table 7. Total effects, direct effects, and bootstrap analysis of indirect effect for the association of vigorous physical activity with "female" mediated by agency, division of domestic labor, and SES	23

List of Figures

Figure 1. Statistical diagram of the parallel multiple mediator model for gender's association to (light/moderate/vigorous) physical activities through agency, division of domestic labor, and SES	3
Figure 2. Association between "female" and light physical activity mediated by agency, division of domestic labor, and SES	22
Figure 3. Association between "female" and vigorous physical activity mediated by agency and SES	24

1.0 Introduction

The United States Department of Health and Human Services suggests that adults should do at least 150 minutes per week of moderate-intensity exercise or 75 minutes per week of vigorous-intensity exercise in order to receive the health benefits associated with an active lifestyle (Physical Activity Guidelines Advisory Committee, 2008). Yet, based on the objectively measured physical activity of a nationally representative sample, more than 95% of adults fail to achieve 30 minutes per day on most days of the week (Troiano et al., 2008). Moreover, women tend to be less physically active than men across age groups (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). The tipping point occurs in adolescence (Kimm et al., 2002). During this period, the importance of femininity is raised for girls (Choi, 2000). Unfortunately, in some people's minds, playing sports seems to be incompatible with femininity and may possibly decrease a girl's popularity (Slater & Tiggemann, 2010; Engel, 1994). In contrast, boys' participation in sport may help to increase their perceived manhood (Coakley & White, 1992; Videon, 2002). The lower rates of physical activity significantly affect women's health, with heart disease and cancer being the two most common causes of mortality among females across age groups (Warburton, Nicol, & Bredin, 2006). Risk for type-2 diabetes, the seventh leading cause of death of all women, is also linked to the rates of physical activity (Aune et al., 2015).

Literature regarding leisure constraints, feminist leisure, gender-role socialization, and gender-based leisure constraints will be used in the proposed thesis research to explain this phenomenon. Leisure constraints, or barriers to leisure (Samdahl, 2013), were more usefully described by Crawford and Godbey (1987) as "any factor which intervenes between the preference for an activity and participation in it" (pp.120). In 1987, Crawford and Godbey divided constraints into three categories: intrapersonal, interpersonal, and structural. Feminist approaches contribute to the understanding of gender disparity in midlife adults' physical activity. According to Henderson (1994) and Aitchison (2001), five stages cover the changes in feminist leisure research over time: researchers (a) generally ignore the idea of women's leisure, (b) acknowledge women but discuss them only as an addition to mainstream leisure literature, (c) examine women's leisure in relation to men, (d) move to understand women's leisure in different life contexts, (e) focus on how cultural meanings are related to expectations of the social construction pertaining to an individual's biological sex. The items in this list are similar to Bem's (1993) gender role ideology: androcentrism, gender polarization, and biological essentialism. The term "gender role" refers to "the social prescriptions or stereotypes associated

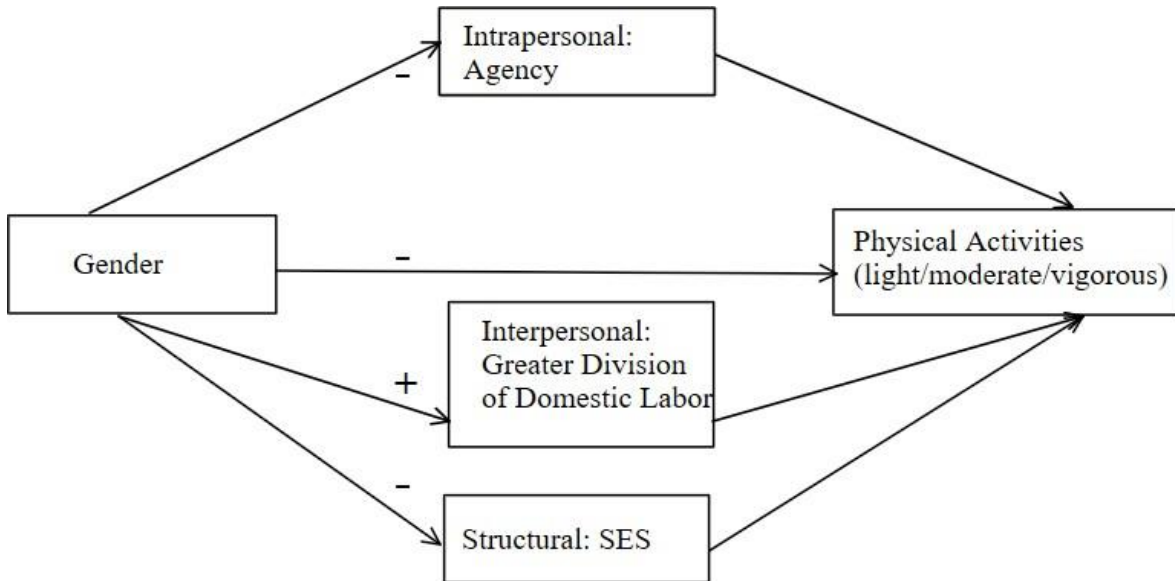
with each sex; it may also be used to describe the extent to which a particular individual complies with the social expectations" (Huyck, 1999. pp 209). The expectations of the gendered role of 'woman' include attracting a mate, bearing and taking care of children, doing housework, and being a caregiver (Huyck, 1999). These expectations can be barriers to leisure for women. Feminist approaches have expanded the understanding of leisure by exploring gender-related issues regarding constraints. The factors proposed to explain these gendered constraints are agency (intrapersonal), division of domestic labor (interpersonal), and socioeconomic status (structural). They were chosen to align with both the choices of earlier researchers and the headings in Crawford's leisure constraints model.

Data will be drawn from the Midlife in the United States study database (MIDUS 2) 2004-2006 [ICPSR 4652] to test these hypotheses. Data collection for that study was guided by the assumption that behavioral and psychosocial factors are consequential for physical and mental health (Ryff et al., 2017). Data for the MIDUS 2 study include related information on 4,032 Americans age 35 to 86 (Ryff et al., 2017). The modes of data collection were interviews and self-administered questionnaires. Our use of this database and other information about study process are covered in detail in the third chapter: Methodology and Methods.

1.1 Purpose of the Study

The research proposed in this paper is intended to update the earlier findings and determine whether anything has changed and, if so, on what scale. In doing so, the mediators influencing women's leisure will be examined in a quantitative study: agency, division of domestic labor, and SES. In it, agency is listed as an intrapersonal variable, division of domestic labor as interpersonal, and SES as structural.

Figure 1. Statistical diagram of the parallel multiple mediator model for gender's association to (light/moderate/vigorous) physical activities through agency, division of domestic labor, and SES



The rest of the thesis is organized as follows: 2.0 reviews previous literature related to my topic; 3.0 introduces the methodology used in my own research; 4.0 presents my research results, and 5.0 discusses the results, covers the study's limitations, and suggests possible areas for future research, before concluding the thesis.

2.0 Literature Review

Most adults fail to achieve the minimum amount of exercise for an active lifestyle (Troiano et al., 2008), which is at least 150 minutes per week of moderate-intensity exercise or 75 minutes per week of vigorous-intensity exercise in order to receive the health benefits associated with an active lifestyle (U.S. Physical Activity Guidelines Advisory Committee, 2008). However, in an objectively measured sample, more than 95% of American adults fail to achieve 30 minutes per day on most days of the week (Troiano et al., 2008). Moreover, women tend to be less physically active than men across age groups, and women over 50 years old are more likely to be inactive than men of similar ages (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). This finding may be related to various phenomena. For example, a typical image of traditional gender roles for women is someone who is a "wilting violet" (Hochschild, 2002) who needs support from others to function fully; Women are expected to be mothers with children living at home who devote more time to housework and parenting and have less leisure time than fathers (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006); There is also an economic gender gap with inequalities in both the quantity and quality of women's economic involvement (Medina-Claros et al., 2021). In leisure studies research, Crawford and Godbey's leisure constraints (1987) may help explain some of these inequities in access to leisure related to gender. In addition to leisure constraints, I will draw on Henderson's (1994) five stages in feminist leisure research, Bem's (1993) gender role ideology, Huyck's gender-role socialization (1999) to help explain gendered patterns of leisure participation. The factors proposed to explain these gendered constraints are agency (intrapersonal), division of domestic labor (interpersonal), and socioeconomic status (structural). They were chosen to align with both the choices of earlier researchers and the headings in Crawford's leisure constraints model.

2.1 Gender Disparity in Midlife Adults' Physical Activity

The United States Department of Health and Human Services suggests that adults should do at least 150 minutes per week of moderate-intensity exercise or 75 minutes per week of vigorous-intensity exercise in order to receive the health benefits associated with an active lifestyle (U.S Department of Health and Human Services, 2008). Yet, based on the objectively measured physical activity of a nationally representative sample, more than 95% of adults fail to achieve 30 minutes per day on most days of the week (Troiano et al., 2008). Moreover, women tend to be less physically active than men across age groups (Shiroma & Lee, 2010; Armstrong,

Bauman, & Davies, 2000).

The tipping point occurs in adolescence (Kimm et al., 2002). During this period, the importance of femininity is raised for girls (Choi, 2000). Adolescent girls start to learn how to live in a woman's body (Tolman et al., 2006). In a patriarchal society, this process requires the embodiment of femininity (Tolman et al., 2006). This process includes internalizing a male gaze, which means to evaluate and judge instead of feeling and experiencing their own body (Simone de Beauvoir, 1961). As a result, when girls start to develop women's bodies in their adolescence, many of them, to some extent or another, force themselves to move or not move in certain ways following either ladylike norms or sexually attractive behavior (Bartky, 1990; Tolman & Debold, 1993). Unfortunately, in some people's minds, playing sports seems to be incompatible with femininity and may possibly decrease a girl's popularity (Slater & Tiggemann, 2010; Engel, 1994). In contrast, boys' participation in sport may help to increase their perceived manhood (Coakley & White, 1992; Videon, 2002). These gender perceptions are often reinforced by advertising (Lorber, 2001) as well as people who are close to teenagers, such as parents, peers, and educators (Katz, 1986). Boys and girls are exposed to ritualized depictions of gender display (Goffman, 1979). After receiving messages of what is gender appropriate and what is not, they may maintain and confirm their gender status by practicing these thoughts and behaviors (Velding, 2017). For example, the media may tell girls that they should pay more attention to their appearance and image instead of sport (Velding, 2017). At the same time, girls who play sports with boys may be teased and called "tomboys" (Slater & Tiggemann, 2010). In this case, girls are likely to switch their use of time from doing sport to shopping or other passive leisure activities (Slater & Tiggemann, 2010).

Overall, women generally have less time to devote to leisure than men do (Mock et al., 2012), as demonstrated in an ethnographic study of American families (Beck & Arnold, 2009) and an analysis of data from over 20,000 married persons in ten Organization for Economic Cooperation and Development (OECD) countries (Brittman & Wajcman, 2000). Using indicators of the quantity and quality of leisure drawn from the Multinational Time Budget Data Archive and the Australian Time Use Survey, Brittman and Wajcman (2000) discovered that even though men and women own similar amount of free time, women still have less leisure time than men in advanced societies.

These lower rates of physical activity significantly affect women's health, with heart

disease and cancer being the two most common causes of mortality among females across age groups (Warburton, Nicol, & Bredin, 2006). Risk for type-2 diabetes, the seventh leading cause of death of all women, is also linked to the rates of physical activity (Aune et al., 2015). Therefore, exploring the reasons behind the lower rates of physical activity for women is important to enhancing women's health by improving their physical activity participation rates. The leisure constraints model will be used as an organizing framework to integrate, feminist perspectives on leisure, gender-role socialization, and gender-based leisure constraints better understand how gender may shape physically active leisure participation.

2.2 Leisure Constraints

Leisure constraints, or barriers to leisure (Samdahl, 2013) are a model developed within leisure studies by Crawford and Godbey (1987) and understood by them as "any factor which intervenes between the preference for an activity and participation in it" (pp.120). Crawford and Godbey divided constraints into three categories: intrapersonal, interpersonal, and structural. Intrapersonal constraints are defined as individual psychological traits that influence the development of leisure preferences (Crawford & Godbey, 1987). Examples of intrapersonal barriers are stress, anxiety, depression, and so on. Interpersonal constraints are regarded as social factors that influence the development of leisure preferences (Crawford & Godbey, 1987). For instance, individuals' preferences for specific leisure activities may be affected by their partners' attitudes. Structural constraints are the intervening elements between preference and participation (Crawford & Godbey, 1987). Examples of structural barriers include socioeconomic status, work schedules, weather, and so on. In 1991, Crawford, Jackson, and Godbey built on the previous argument and displayed their hierarchical model of leisure constraints. This model assumes that intrapersonal and interpersonal constraints influence leisure preferences, whereas structural constraints intervene between preferences and participation. Leisure constraints as they pertain specifically to women are explored in feminist leisure studies.

Even though my study mainly concerns white people living in Wisconsin, it is worth emphasizing that leisure constraints are closely related to demographic variables, such as gender, race, and ethnicity (Layland et al., 2008). For example, an American study, based on a national level household survey regarding outdoor recreation constraints, finds that African Americans, Native Americans, Asian Americans, Native Hawaiians, and women of all races, have more safety concerns than their European American, male counterparts (Ghimire et al., 2014). To be more specific, according to a systematic integrative literature review to identify barriers to

physical activity among Black women, the threats to safety that they face consist of verbal harassment, physical harm, and violence (Joseph et al., 2015).

2.3 Feminist Leisure Studies

Feminist approaches contribute to the understanding of gender disparity in midlife adults' physical activity. These approaches demonstrate how social structure, gender, and power relations affect women's leisure (Henderson, 2013). Feminism as a Western scholarly discipline began in 1848 (Delament, 2003) and is referred as "an ideology and a social political movement" (Henderson, 2013, pp4). A later offshoot, feminist leisure studies, which emerged in the 1980s, forms the major theoretical basis of the proposed research. The basis of this ideology originates in women's rights starting with Tetrault's feminist phase theory, which Henderson (1994) and Aitchison (2001) later used as basis for five stages covering changes in feminist leisure research over time. In the first stage, the idea of women's leisure is generally ignored. There is little related research before the early 1980s. In 1982, two articles about women were published in *Leisure Studies* (i.e., Deem, 1982; Glyotis & Chambers, 1982). Women are acknowledged but discussed as an addition to the mainstream of the leisure literature (Wimbush & Talbot, 1988) in the second phase. The third stage mainly examines women's leisure in relation to men. Then, the fourth stage moves to understand women's leisure in different life contexts. This approach opens the door to explore how family relationships and multiple identity characteristics influence women's everyday leisure. The fifth phase focuses on how cultural meanings are related to expectations of the social construction pertaining to an individual's biological sex. This perspective refers to the notion of gender role socialization.

2.4 Gender Role Socialization

Research records of activity patterns in heterosexual dual-income households consistently show that equal access to personal time is rarely achieved (Hochschild, 2002; Ferri & Smith, 1996). This discrepancy is detrimental to women's leisure. The cause of this disparity is not the workloads of each sex but the imbalanced loads of domestic responsibilities (Kay, 1998). This situation is regarded as a "stalled revolution", which means that when women go to work outside the home, their workplace, their culture, and their men do not adapt themselves to the new situation (Hochschild, 2002). This phenomenon has been shown to prevail in all countries examined to date.

Previous studies have demonstrated the important role of gender ideologies behind the division of housework (Deutsch, Lussier, & Servis, 1993; Greenstein, 2000; Gaunt, 2006).

Actually, the gender ideology perspective has been used as an explanation in terms of both occupational and marital domains. For instance, in working settings, gender ideologies were regarded as being associated with women's occupations (Crompton & Harris, 1997), job attitudes (Jones & McNamara, 1991), organizational commitment (Gray, 1989) and career advancement (Gammie & Gammie, 1997). In marriage contexts, earlier research has proved a relationship between gender ideologies and marital satisfaction (Vannoy & Cubins, 2001) and displayed how gender ideologies moderate the effects of wives' employment on marital stability and divorce (Greenstein, 1995; Kalmijn, De Graaf, & Poortman, 2004).

Gender role socialization will be used as a theory to guide this research. In this study, gender role socialization mainly refers to what Bem calls lenses of gender (1993). Lenses of gender are defined as "hidden assumptions about sex and gender [that] remain embedded in cultural discourses, social institutions, and individual psyches [and] that invisibly and systemically reproduce male power in generation after generation" (Bem, 1993, pp2). The first embedded lens is androcentrism or male-centeredness, which means that men are treated as human beings while women are regarded as "others". Gender polarization, the second lens, lays emphasis on how male-female difference impacts almost every aspect of life experience. Finally, biological essentialism justifies the previous two lenses by regarding them as the results of the biological traits of women and men.

Other than gender role socialization, people may understand gender difference in another way, called the biological-essentialist explanation. This explanation believes that the genetic and hormonal differences between females and males are the determining factors of masculinity and femininity (Dar-Nimrod & Heine, 2011; Fine, 2017; Richardson, 2013). This explanation is built on the existence of group-level sex differences in various areas, such as hormones and the structure and function of the brain. However, even though studies from neuroendocrinology and neuroscience reveal group-level gender differences, it does not mean that these differences are immutable. For example, in terms of hormones, while men's testosterone levels are generally higher than women's, this difference does not exist through all life stages, and considerable overlap exists in the distribution of testosterone levels (Granger et al., 2004). Regarding the structure and function of the brain, even though group-level differences exist in many brain measures, such as the size of specific brain regions and strength of connections between regions, noticeable overlap also exists between the distributions of women and men for each of these measures (Joel et al., 2015; Ritchie et al., 2018).

2.5 Gender Role and Leisure

The term "gender role" refers to "the social prescriptions or stereotypes associated with each sex; it may also be used to describe the extent to which a particular individual complies with the social expectations" (Huyck, 1999. pp 209). The expectation of the gendered role of 'woman' includes attracting a mate, bearing and taking care of children, doing housework, and being a caregiver (Huyck, 1999). This expectation has been widely held by men, women and society as a whole worldwide.

Gender role expectations can be barriers to leisure for women. For instance, mothers identify time, physical energy, money, and social support as constraints to joining active leisure activities (Brown et al., 2001). Moreover, it is not a trivial factor in women's identity. For instance, gender role expectations are likely to make mothers diagnosed with breast cancer assign lower priority to their own wellbeing (Mackenzie, 2014). In general, women are told to put other's needs before their own (Currie, 2009), which suggests that women tend to be more communal than men. This ideology affects both women's decision to attend physical activities and their enjoyment during events (Samdahl, 2013). In other terms, gender ideologies may lead to gender-based leisure constraints.

2.6 Gender-based Leisure Constraints

Feminist approaches have expanded the understanding of leisure by exploring gender-related issues regarding constraints. The comparative differences in leisure constraints for women and men are explored. Studies have repeatedly shown that women tend to perceive more leisure constraints than men (e.g., Harrington, Dawson, & Bolla, 1992; Henderson, 1991; Shaw, Bonen, & McCabe, 1991). Women are generally more constrained by time and money, more committed to family tasks, and more socialized into an ethic of care that makes them more likely to sacrifice themselves for others (Shaw, 1994). For example, young women in heterosexual relationships prioritize their leisure time spent with their boyfriends (Herridage, Shaw, & Mannell, 2003). Mothers often feel guilty when they spend their time on themselves (Miller & Brown, 2005). Moreover, leisure obstacles may vary between men and women and among groups of women due to their life contexts (Green, Hebron, & Woodward, 1987). These contexts include the personal, social, and situational characteristics that combine with gender to generate the setting for a person's lifestyle. Therefore, gender-based analysis should be conducted to understand the leisure constraints of individuals, and combined with an examination of selected contextual factors.

The factors proposed to explain these gendered constraints are agency (intrapersonal), division of domestic labor (interpersonal), and socioeconomic status (structural). Each factor is explored in depth in the next paragraphs. They were chosen to align with both the choices of earlier researchers and the headings in Crawford's leisure constraints model.

2.6.1 Agency

Another consequence of gender role socialization is gender differences in agency and communion. The typical image of a man is summed up in the poem *Invictus* by William Ernest Henley (1888), "I am the master of my fate and captain of my soul", which shows that the male speaker assumes full agency for his actions and future. In contrast, a typical image of a traditional woman is someone who is like a "wilting violet" (Hochschild, 2002) that needs support from others to function fully.

Gender role socialization influences men and women's behaviors, including their leisure activities, through gender stereotypes and gender identities. Agency and communion play important roles in this process. They are two fundamental human nature qualities representing self- versus other-orientation (Sczesny, Nater, & Eagly, 2019). Agentic content refers to "goal-achievement and task functioning (competence, assertiveness, decisiveness)," while communal content is "the maintenance of relationships and social functioning (benevolence, trustworthiness, morality)" (Abele & Wojciszke, 2014, pp.196).

Previous research has found related gender stereotypes holding that women are generally regarded as more communal and less agentic than men (Williams & Best, 1982; Rudman & Goodwin, 2004). The definition of gender stereotypes is "people's consensual beliefs about the attributes of women and men" (Sczesny, Nater, & Eagly, 2019, pp.103). In other words, this gender stereotype maintains that men are and should be assertive and competitive, while women are and should be socially sensitive and compassionate. Moreover, studies demonstrate that among those who value their gender identities, women may regard themselves as caring and compassionate while men see themselves as strong and competitive (Abrams, Thomas, & Hogg, 1990). This is a socialization process according to Bem's gender schema theory. It is taught that gender could be used as a way to process information about the world (Bem, 1983). Throughout this paper, gender identity should be understood as "individuals' self-definition as female or male, which is based on their biological sex as interpreted within their culture" (Sczesny, Nater, & Eagly, 2019, pp.106).

Gender stereotypes join gender identities to influence women's and men's behaviors (Sczesny, Nater, & Eagly, 2019). Like other affected behaviors, women's engagement in physical activities is generally lower than men's (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). For instance, men are likely to change their working schedules to accommodate their own hobbies due to their agency (Holt & Thaulow, 1996), while women are inclined to sacrifice their personal time for domestic demands (Kay, 2001). Men also tend to enjoy longer leisure time with relatively less disturbance, as their time may be regarded as autonomous and individual (Knights, 2006). In contrast, women's leisure time may be viewed as collective, shared, and linked to the needs of other family members due to the traditional belief that women are compassionate and kind (Knights, 2006). As a result, women's personal time is more likely to be affected by children and housework (Brittman & Wajman, 2000).

2.6.2 Division of Domestic Labor

Previous studies have demonstrated that mothers with children living at home devote more time to housework and parenting and have less leisure time than fathers (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006). Even among married or cohabitating couples without children, most employed women still invest more time doing domestic labor than men (Marshall, 2006). It seems that women's greater domestic workload in heterosexual relationships is part of "doing" gender (West & Zimmerman, 1987; Harrington, 2013).

There are several potential explanations. Women may feel an overall responsibility for household matters (Kay, 2001). This responsibility could be deeply planted in their gender identities and then reinforced through daily routines (Hilbrecht, 2013). In this case, women demonstrate what might be called proactive domesticity: Women identify necessary household duties and ensure that they are performed (Kay, 2001). When women do housework while men avoid it, they may unconsciously demonstrate to themselves and their partners that housework is women's work (Walby, 1990). When men and women interpret housework as women's work and behave accordingly, they probably have internalized this norm to regard housework as a part of female identity (Carriero, 2021). Moreover, women's work in the home is more arduous, less flexible, and more likely to be interrupted compared with men's (Milkie & Peltola, 1999). To be more specific, the typical men's household duties, such as lawn maintenance or repair work, are more sporadic and can be scheduled in their convenience. Yet, the common women's household activities, such as cooking, cleaning, and laundry, are usually

constant, repetitive, and unrelenting (Hochschild, 2002).

Consequently, at least three leisure barriers for women are caused by the unequal division of household duties and the recurring nature of those duties. First, women traditionally have less free time available, due to greater household workloads than men (Fast & Frederick, 2004; Gershuny, 2000; Hilbrecht, 2009). Second, women's leisure time is more likely to be fragmented because of their less flexible household duties (Hochschild, 2002). In other words, women are forced to split their leisure time into more episodes in order to fulfill their domestic labor. Last, it seems difficult for women to possess pure leisure. Pure leisure means "there is either no secondary activity or the secondary activity is also leisure" (Hilbrecht, 2013, pp.182). To put it another way, women's leisure is more likely to be contaminated by concurrent activities such as the need to prepare meals at set intervals.

2.6.3 Socioeconomic Status

In addition to the division of domestic labor, socioeconomic status (SES) also has a powerful influence on leisure participation (Crawford, Jackson & Godbey, 1991; Shaw 1994). SES refers to a measure of one's combined economic and social status (Baker, 2014). Previous studies have demonstrated that the economic gender gap exists with inequalities both in the quantity and quality of women's economic involvement (Medina-Claros et al., 2021).

In terms of the quantity of women's economic involvement, the gender gap remains in labor participation rates and remuneration. Even though 70% of women are willing to be breadwinners, only 50% of them achieve their goals versus 76% of men (Gallup and International Labour Organization, 2017). Furthermore, women are not only paid less than men on average (Titan et al., 2020), but their income is also lower for similar work (World Economic Forum, 2019). This difference in salary is predicted to be around 23% (International Labour Organization, 2016). Regarding the quality of women's occupations, their professions are primarily concentrated in low-paid niches, such as care-oriented tasks, administrative office work, or teaching, instead of high-ranking positions. As a matter of fact, women take less than 25% of management roles worldwide, 22% in ministerial and parliamentary positions (Desvaux et al., 2017) and 26% of all CEOs (International Labour Organization, 2015).

2.7 Summary

Based on previous studies, most adults fail to achieve the minimum amount exercise for an active lifestyle. Moreover, women tend to be less physically active than men across age

groups, and women over 50 years old are more likely to be inactive than men of similar ages. These lower rates of physical activity significantly affect women's health.

Feminist approaches contribute to the understanding of gender disparity in midlife adults' physical activity. These approaches demonstrate how social structure, gender, and power relations affect women's leisure. Research records of activity patterns in heterosexual dual-income households consistently show that equal access to personal time is rarely achieved. It is gender role expectations that are behind this phenomenon. The term "gender role" refers to "the social prescriptions or stereotypes associated with each sex; it may also be used to describe the extent to which a particular individual complies with the social expectations" (Huyck, 1999. pp 209). The expectations of the gendered role of 'woman' include attracting a mate, bearing and taking care of children, doing housework, and being a caregiver (Huyck, 1999). These expectations are, and always have been, widely held by men, women and society worldwide and can be barriers to leisure for women.

In 1987, Crawford and Godbey divided constraints into three categories: intrapersonal, interpersonal, and structural. Feminist approaches have expanded the understanding of leisure by exploring gender-related issues regarding constraints. This study is going to examine multiple mediators identified by past feminist leisure literature using Crawford's leisure constraints model. These mediators are agency (intrapersonal), division of domestic labor (interpersonal), and SES (structural). The diagram may be referred back to Figure 1.

2.7.1 Hypotheses

1. It is expected that women will do fewer lower light physical activities compared to men (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000).
 - a. It is expected that this relationship will be explained by their lower levels of agency (Holt & Thaulow, 1996; Knights, 2006).
 - b. It is expected that this relationship will be explained by their higher levels of domestic labor (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006).
 - c. It is expected that this relationship will be explained by their lower levels of SES (Crawford, Jackson & Godbey, 1991; Shaw 1994).

2. It is expected that women will do fewer lower moderate physical activities compared to men (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000).
 - a. It is expected that this relationship will be explained by their lower levels of agency (Holt & Thaulow, 1996; Knights, 2006).
 - b. It is expected that this relationship will be explained by their higher levels of domestic labor (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006).
 - c. It is expected that this relationship will be explained by their lower levels of SES (Crawford, Jackson & Godbey, 1991; Shaw 1994).
3. It is expected that women will do fewer lower vigorous physical activities compared to men (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000).
 - a. It is expected that this relationship will be explained by their lower levels of agency (Holt & Thaulow, 1996; Knights, 2006).
 - b. It is expected that this relationship will be explained by their higher levels of domestic labor (Bianchi, Wight, & Raley, 2005; Bianchi, Robinson, & Milkie, 2006; Craig, 2006).
 - c. It is expected that this relationship will be explained by their lower levels of SES (Crawford, Jackson & Godbey, 1991; Shaw 1994).

3.0 Methodology and Methods

3.1 Methodology

Ontologically, my research is led by a belief in a fundamental truth that is essentially universal. Epistemologically, my research leverages objectivism, which holds that an independently world of objective reality exists and can be discovered (Gray, 2014). This approach can be repeated to test the validity: when future researchers use the same data in the same way as an earlier study, the same results should be expected. Theoretically, as a post-positivism study, my research pursues reliable and generalizable truth (Crotty, 1998). I, as a researcher, try to be objective during the whole process of data collection, data analysis, and data interpretation. For instance, I have selected a database with a relatively large sample to strengthen my study's generalizability, use mainly surveys instead of interviews or observations to ensure reliability, leverage computer software to do the data analysis and so minimize researcher bias, and quantify my research results to make sure that they can be applied to other contexts.

3.2 Data Source

Data were drawn from the Midlife in the United States study (MIDUS 2) 2004-2006 [ICPSR 4652]. In 1995-1996, the MacArthur Midlife Research Network carried out the MIDUS 1 study, in which 6,329 participants completed interviews and self-administered questionnaires (Brim et al. 2020). All respondents were non-institutionalized, English-speaking adults aged 25 to 74 living in the U.S. (Brim et al. 2020). The purpose of this study was to investigate the role of behavioral, psychological, and social factors in understanding age-related differences in physical and mental health (Ryff et al., 2017). The National Institute on Aging supported MIDUS 2, a longitudinal follow-up of the original study conducted from 2004 to 2006. It was guided by the assumption that behavioral and psychosocial factors are consequential for physical and mental health (Ryff et al., 2017). Data for the MIDUS 2 study include related information on 4,032 Americans age 35 to 86 (Ryff et al. 2007). These respondents were first interviewed as part of the MIDUS 1 study, which was based on a nationally representative random-digit-dial (RDD) sample (Ryff et al., 2017). The modes of data collection were audio computer-assisted self-interviews (ACASIs), computer-assisted personal interviews (CAPIs), computer-assisted telephone interviews (CATIs), mail questionnaires, and telephone interviews (Ryff et al., 2017). Later, a small sub-sample of

African Americans were interviewed and filled in a questionnaire as part of the researchers attempt to refine the study by including African-American participants recruited in Milwaukee, Wisconsin.

This database has been selected for three reasons. First, MIDUS 2 has a relatively large sample of 4,032, which strengthens the generalizability of research results. Second, the Midlife in the United States study (MIDUS 3) 2013-2014 [ICPSR 36346] is available to provide data for longitudinal studies. Last, it contains all the variables that I want to test. I also considered other surveys done by Statistics Canada, such as the Canadian Community Health Survey (CCHS). However, they seem to lack certain intrapersonal and interpersonal variables, such as agency, and division of domestic labor.

3.3 Sample

As mentioned, the MIDUS 2 study contains information on 4,032 Americans age 35 to 86. The sub-sample selected for the current analyses from that total is the 978 married or cohabiting persons who work and who provided their leisure activity information. Only married or cohabiting persons who provide the details of their leisure activities will be included in our study. All this information is required to accommodate the interpersonal mediator and make clear the division of domestic labor.

3.4 Variables and Scales

Within MIDUS 2, *Gender* is denoted by female (1) and male (0). No alternative options for gender are available, such as transgender and non-binary. *Children* (1) indicates that participants had one or more children compared to not having any children (0). *Education* is coded to four levels: completed high school or less (1), some college (2), completed college or bachelor's degree (3), some graduate school or above (4). *Personal income* is coded to five levels: no income or less than \$20,000 (1), \$20,001 to \$40,000 (2), \$40,001 to \$60,000 (3), \$60,000 to \$80,000 (4), or more than \$80,000 (5).

SES created from combined educational attainment and personal income variables. The education and income scores were transformed to z-scores, and the mean of the z-scores was computed to form a single measure of current SES. Since education and annual income are measured on different scales, standardization of these variables allows them to be combined into a single variable. This method of standardizing and then combining variables has been used elsewhere to create a global SES value in adult developmental research (Westerhof & Barrett,

2005) and elsewhere in psychological research in general (McKenna & Bargh, 1998).

Agency was operationalized as "personal mastery," which was measured by four items: "I can do just about anything I really set my mind to"; "When I really want to do something, I usually find a way to succeed at it"; "Whether or not I am able to get what I want is in my own hands"; and "What happens to me in the future mostly depends on me." Responses were rated on a scale from 1 to 7 (e.g., 1=disagree strongly, 2=disagree somewhat, 3=disagree a little, 4=neither agree or disagree, 5=agree a little, 6=agree somewhat, 7=agree strongly) and coded such that higher values reflected having greater levels of personal mastery (Pearlin & Schooler, 1978).

Division of domestic labor was assessed with responses to the question, "Running a household involves a lot of chores (like cooking, shopping, laundry, cleaning, yard work, repairs, and paying bills), and couples vary in who does these things. Overall, do you do more of such chores, does your spouse or partner do more of them, or do you split them equally? If you have children, do not count childrearing tasks such as bathing them, taking them places, or helping them with their homework, but do include chores like doing their laundry, washing their dishes, or cooking for them." Responses were rated on a scale from 1 to 7 (e.g., 1= you do a lot more, 2= you do somewhat more, 3= you do a little more, 4= chores split evenly, 5= spouse does a little more, 6= spouse does somewhat more, 7= spouse does a lot more) and coded such that higher values reflected greater levels of domestic labor. This question has been asked in the same words by many researchers, including Gross, Neil, and Solon Simmons (2002) and Barrett and Raphael (2018).

Light physical activity was assessed with responses to the question regarding summer and winter, "How often do you engage in light physical activity that requires little physical effort? (Examples: light housekeeping like dusting or laundry; bowling, archery, easy walking, golfing with a power cart or fishing.) During your leisure or free time?" Responses were rated on a scale from 1 to 6 (e.g., 1= Several times a week, 2= Once a week, 3= Several times a month, 4= Once a month, 5= Less than once a month, 6= Never) and coded such that higher values reflected having greater levels of light physical activity. This question has been asked in the same words by many researchers, including Bae et al. (2017), Stephan et al. (2018), and Yemiscigil and Vlaev (2021).

Moderate physical activity was assessed with responses to the question regarding

summer and winter, "How often do you engage in moderate physical activity, that is not physically exhausting, but it causes your heart rate to increase slightly and you typically work up a sweat? (Examples: leisurely sports like light tennis, slow or light swimming, low impact aerobics, or golfing without a power cart; brisk walking, mowing the lawn with a walking lawnmower.) during your leisure or free time?" Responses were rated on a scale from 1 to 6 and coded such that higher values reflected having greater levels of moderate physical activity. This question has been asked in the same words by many researchers, including Bae et al. (2017), Stephan et al. (2018), and Yemiscigil and Vlaev (2021).

Vigorous physical activity was assessed with responses to the question regarding summer and winter, "How often do you engage in vigorous physical activity that causes your heart to beat so rapidly that you can feel it in your chest and you perform the activity long enough to work up a good sweat and are breathing heavily? (Examples: competitive sports like running, vigorous swimming, or high intensity aerobics; digging in the garden, or lifting heavy objects.) During your leisure or free time?" Responses were rated on a scale from 1 to 6 and coded such that higher values reflected having greater levels of vigorous physical activity. This question has been asked in the same words by many researchers, including Bae et al. (2017), Stephan et al. (2018), and Yemiscigil and Vlaev (2021).

3.5 Analysis Plan

Descriptive statistics will be computed for all study variables, including the mean values of light physical activity, moderate physical activity, vigorous physical activity, age, income, and education, in addition to the percentage of female (in comparison to male) and children (in contrast to no children) in the sample. Moreover, correlations for all the above variables will be conducted, excluding income and education as SES will be utilized instead.

Linear regression models will then be constructed to determine the association of gender and the control variable with physical activity participation. The control variable age and children will be included in Model 2; potential mediators, agency, division of domestic labor, and SES will be added in Model 3. Next, by utilizing PROCESS, the total, direct, and indirect effects will be calculated with the indirect effect bootstrapped to ensure the existence of all the mediators' effects on the relationship (Preacher & Hayes, 2004; Hayes, 2017).

4.0 Results

4.1 Descriptive Statistics

44.89% of participants within the sample were female. Of the total respondents, 90.49% had one or more children (Table 1). The average age was 50.90 years. The average income was roughly \$40,000 to \$60,000, and the average educational attainment was between some college and completed college or a bachelor's degree. From a six-point scale, the average participation frequency score for light physical activity was 5.13 (SD=1.36), for moderate physical activity was 4.20 (SD=1.71), and for vigorous physical activity was 3.63 (SD=1.81).

Table 1. Means, percentages and standard deviations of descriptives

Variable	<i>M</i>	<i>SD</i>
Light Physical activity	5.13	1.36
Moderate Physical Activity	4.20	1.71
Vigorous Physical Activity	3.63	1.81
Socio-Demographics		
Age	50.90	9.91
Income	3.04	1.43
Educational Attainment	2.41	1.13
	%	
Female	44.89	
Children	90.49	

4.2. Correlation Analysis

The correlation analysis demonstrated that "female" was significantly correlated to age, agency, division of domestic labor, SES, light physical activity and vigorous physical activity (Table 2). The correlation between "female" and vigorous physical activity was negative, while the one between "female" and light physical activity was positive.

Table 2. Correlation of female, age, children, agency, division of domestic labor, SES, light physical activity, moderate physical activity, and vigorous physical activity

Variables	Correlations								
	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Female	--	--	--	--	--	--	--	--	--
2. Age	-.09**	--	--	--	--	--	--	--	--
3. Children	.01	.15***	--	--	--	--	--	--	--
4. Agency	-.07*	-.02	-.01	--	--	--	--	--	--
5. Division of Domestic Labor	-.53***	.08*	.02	.08*	--	--	--	--	--
6. SES	-.22***	.01	-.09**	.12***	.21***	--	--	--	--
7. Light Physical Activity	.08**	-.08*	-.03	.11***	-.08*	.17***	--	--	--
8. Moderate Physical Activity	-.03	-.13***	-.01	.13***	-.03	.19***	.50***	--	--
9. Vigorous Physical Activity	-.10**	-.17***	-.04	.15***	.03	.21***	.33***	.69 ***	--

*p < 0.05, **p < 0.01, ***p < 0.001.

*Higher value of division of labor means that the participant's spouse does more housework

4.3. Regression and Mediation Analysis

The regression analysis for light physical activity demonstrated that the control variable, children, was insignificant. Older respondents (compared to younger respondents) do less light physical activity (Table 3). Female respondents (compared to male respondents) do more light physical activity (Table 3). Agency was positively associated with light physical activity (Table 3: Model 3; Figure 2), which means that participants with higher agency do more light physical activity. Division of domestic labor was negatively associated with light physical activity (Table 3: Model 3; Figure 2), which means that participants with less housework do more light physical activity. SES was positively associated with light physical activity (Table 3: Model 3; Figure 2), which means that participants with higher SES do more light physical activity. Several of the indirect effects were demonstrated to be

significant, and although for the c-path, the association of being female with increased light physically active leisure increased with the addition of the mediators, those statistically significant indirect effects suggest potential explanations for why women are more likely to engage in light physically active leisure (Table 4).

Table 3. Regression coefficients examining associations of light physical activity with “female”, by agency, division of domestic labor, SES and the control variable

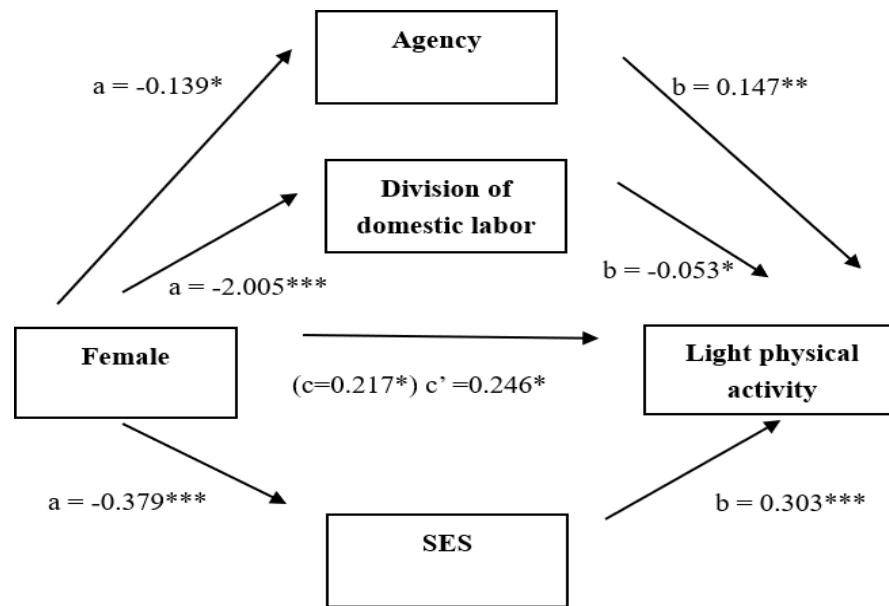
Independent Variables	Model 1		Model 2		Model 3				
	coeff.	S.E.	coeff.	SE	coeff.	SE			
Constant	5.02	***	0.06	5.65	***	0.26	4.87	***	0.39
Female	0.23	**	0.09	0.22	*	0.09	0.25	*	0.10
Age	--			-0.01	*	0.00	-0.01	*	0.00
Children	--			-0.13		0.15	-0.04		0.15
Agency	--			--			0.15	**	0.05
Division of Domestic Labor	--			--			-0.05	*	0.03
SES	--			--			0.30	***	0.05
Adjusted R^2	.006			0.011			0.056		

*p < 0.05, **p < 0.01, ***p < 0.001.

Table 4. Total effects, direct effects, and bootstrap analysis of indirect effect for the association of light physical activity with "female" mediated by agency, division of domestic labor, and SES

	Bootstrapping			
	Effect	SE	Lower Limit	Upper Limit
Total Effect (c)	0.217	0.088	--	--
Direct Effect (c')	0.246	0.102	--	--
Indirect Effect (ab)				
Total	-0.030	0.058	-0.144	0.084
Agency	-0.021	0.013	-0.056	-0.003
Division of domestic labor	0.105	0.053	0.004	0.216
SES	-0.115	0.024	-0.172	-0.074

Figure 2. Association between "female" and light physical activity mediated by agency, division of domestic labor, and SES



*p < 0.05, **p < 0.01, ***p < 0.001.

The regression analysis for moderate physical activity demonstrated that gender was not significantly related to rates of moderate physically active leisure participation (Table 5). This result does not align with the expectation and an explanation will be expanded on in the discussion section.

Table 5. Regression coefficients examining associations of moderate physical activity with “female”, by agency, division of domestic labor, SES and the control variable

Independent Variables	Model 1		Model 2		Model 3				
	coeff.	S.E.	coeff.	SE	coeff.	SE			
Constant	4.24	***	0.07	5.40	***	0.32	4.41	***	0.48
Female	-0.08		0.11	-0.12		0.11	-0.10		0.13
Age	--		--	-0.02	***	0.01	-0.02	***	0.01
Children	--		--	0.06		0.19	0.18		0.19
Agency	--		--	--		--	0.20	***	0.06
Division of Domestic Labor	--		--	--		--	-0.08	*	0.03
SES	--		--	--		--	0.40	***	0.07
Adjusted R ²	.000			0.016			0.066		

*p < 0.05, **p < 0.01, ***p < 0.001.

The regression analysis for vigorous physical activity demonstrated that the control variable, children, was insignificant. Older respondents (compared to younger respondents) do less vigorous physical activity (Table 6). Female respondents (compared to male respondents) do less vigorous physical activity (Table 6). Agency was positively associated with vigorous physical activity (Table 6: Model 3; Figure 3), which means that participants with higher agency do more vigorous physical activity. SES was positively associated with vigorous physical activity (Table 6: Model 3; Figure 3), which means that participants with higher SES do more vigorous physical activity. After bootstrapping, the indirect effects were demonstrated to be significant, suggesting partial mediation (Table 7).

Table 6. Regression coefficients examining associations of vigorous physical activity with “female”, by agency, division of domestic labor, SES and the control variable

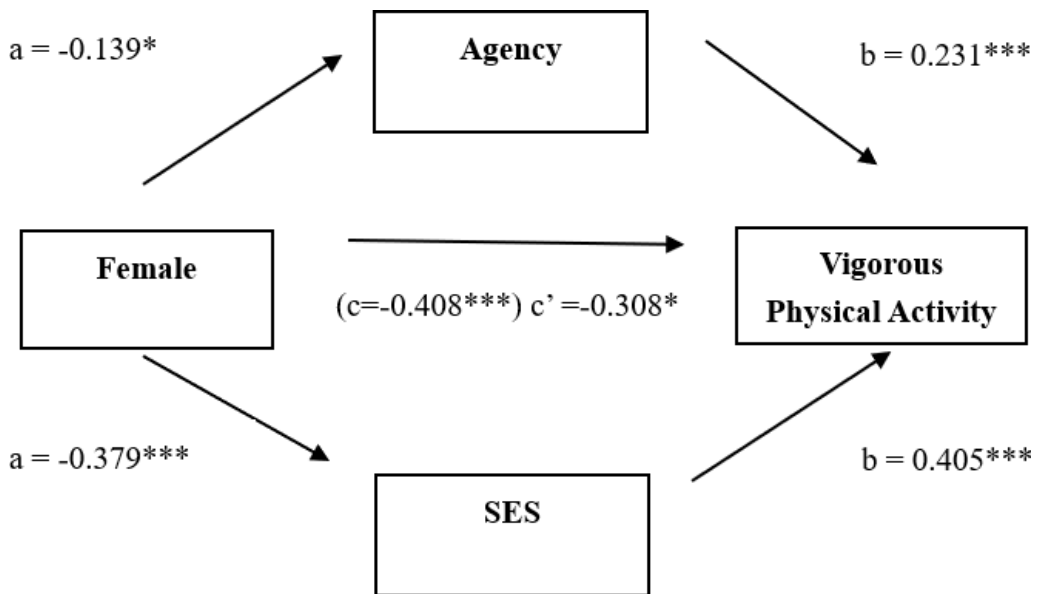
Independent Variables	Model 1		Model 2		Model 3				
	coeff.	S.E.	coeff.	SE	coeff.	SE			
Constant	3.79	***	0.08	5.53	***	0.34	4.16	***	0.51
Female	-0.35	**	0.12	-0.41	***	0.12	-0.31	*	0.13
Age	--			-0.03	***	0.01	-0.03	***	0.01
Children	--			-0.03		0.20	0.08		0.20
Agency	--			--			0.23	***	0.06
Division of Domestic Labor	--			--			-0.04		0.04
SES	--			--			0.41	***	0.07
Adjusted R^2	.008			0.039			0.088		

*p < 0.05, **p < 0.01, ***p < 0.001.

Table 7. Total effects, direct effects, and bootstrap analysis of indirect effect for the association of vigorous physical activity with "female" mediated by agency, division of domestic labor, and SES

	Bootstrapping			
	Effect	SE	Lower Limit	Upper
Total Effect (c)	-0.410	0.115	--	--
Direct Effect (c')	-0.308	0.134	--	--
Indirect Effect (ab)				
Total	-0.100	0.081	-0.260	0.055
Agency	-0.032	0.017	-0.074	-0.006
Division of domestic labor	0.085	0.074	-0.052	0.235
SES	-0.153	0.034	-0.230	-0.093

Figure 3. Association between "female" and vigorous physical activity mediated by agency and SES



* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5.0 Discussion

This study set out to examine gendered patterns in rates of physically active leisure participation with population-based data and an exploration of potential explanatory factors. The analyses were informed by Crawford and Godbey's model of leisure constraints (1987), Henderson's (1994) five stages in feminist leisure research, Bem's (1993) gender role ideology, Huyck's gender-role socialization (1999), and gender-based leisure constraints. To be specific, I examined the relationship between gender and physical activity and the mediators influencing women's leisure: agency (intrapersonal), division of domestic labor (interpersonal), and socioeconomic status (structural). They were chosen to align with both the choices of earlier researchers and the headings in Crawford's leisure constraints model.

A key question I sought to address was whether women tend to be less engaged in physically active leisure compared to men. Interestingly, I found that women do more light physical activities compared to men. This finding contradicts expectations drawn from previous literature (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). The results from the mediation analyses show that women do more light physical activities compared to men, in part, due to woman's lower levels of agency and SES and higher load of domestic labor. Despite about 40 years having passed since the first research on this topic, my research confirms that very little has changed for the majority of women. Compared to men, women tend to have lower self-rated agency, hold multiple roles, and have lower socioeconomic status. However, the result demonstrate that women may be doing their best to adapt themselves to physical activities that work for them within their constraints. This possibility could explain why women may do more light physical activities, such as walking and bowling, as these are the activities that they find most accessible.

No gender differences were found for participation in moderate levels of physically active leisure. However, I found that women are less engaged in vigorous physical activities compared to men, which is consistent with previous findings (Shiroma & Lee, 2010; Armstrong, Bauman, & Davies, 2000). The results from the mediation analyses suggest that women do fewer vigorous physical activities compared to men, in part, due to women's lower levels of agency and SES. Surprisingly, the division of domestic labor is not confirmed as one of the explanatory factors. According to Hochschild's book, *The Second Shift*, one of women's biggest struggles is having multiple roles. This finding may indicate that women have so internalized the idea of doing the majority of housework that they do not even regard it as a leisure constraint in

terms of vigorous physical activities, whereas men are not so constrained.

The finding that there were no gender differences in terms of participation moderate levels of physically active leisure was unexpected. As with the finding that women are more engaged than men in lower intensity physically active leisure, this partially dispels the notion that there are gender differences in rates of physically active leisure participation. Thus, when examining the ways gender shapes physically active leisure participation, it is important to take into account the nature of that physically active leisure. It also suggests that women may be negotiating leisure constraints.

However, despite about 40 years having passed since the first research on this topic, some of the findings confirms that women still face barriers to physically active leisure participation, particularly the more vigorous forms. However, the results demonstrate that women may be doing their best to adapt themselves to physical activities that work for them within their constraints. There is also a possibility that women have so internalized the idea of doing the majority of housework that they do not even regard it as a leisure constraint in terms of vigorous physical activities, while men are not constrained in the same way.

5.1 Limitations and Future Research

Firstly, the nature of the data limited this study. As only secondary data was used, my analyses were run just with items available within the database, constraining the ability to have multi-item measures. As a result, some single-item measures have been used. Future studies would benefit from researchers using explanatory factors such as the division of domestic labor that have multiple indicators.

Secondly, the data are cross-sectional, which precludes causal claims. To address this limitation, longitudinal datasets should be used to explore causal pathways. Suitable datasets do exist for such longitudinal studies, but such an investigation was beyond the scope of this current study.

Third, this dataset focuses only on midlife adults in America, which may affect the generalization of findings. Future studies would benefit from researchers using different datasets covering diverse age ranges and regions. The situation may be very different in less developed countries where women's work in particular tends to be less supported by labor-saving devices and access to vehicles.

Lastly, it is an interesting finding that the division of domestic labor is related to gender but not to the physical activities. It may indicate that women have so internalized the idea of doing the majority of housework that they do not even regard it as a leisure constraint, while men are not constrained. Hence, future studies would benefit from researchers exploring more in this field.

5.2 Conclusion

This study has both practical and academic implications. In terms of practical implications, educators should be careful not to discourage girls, especially in adolescence, from doing sports or telling them that they should behave more ladylike. Instead, they should do their best to provide fair access to various sports to all teenagers regardless of their gender. For example, girls should be able to play on a rugby team based on their own will instead of only being allowed to be cheerleaders in the match. Leisure service providers may provide more user-friendly hours and prices to help more women to overcome time and financial constraints. For instance, a single mother is more likely to attend free yoga classes at night instead of expensive ones offered during daytime.

Other than practical implications, this study also provides academic contribution. Reviewing the literature, this thesis research has found that a scholarly trend focused on examining women and their leisure constraints as a research topic produced numerous papers and research between roughly 1980 and 2000. To a large extent, this research is driven by the feminist movement and growth in feminism studies examining all aspects of women's lives. However, to the best of my knowledge, this study represents one of the first attempts to examine the ways gender shapes physically active leisure with a systematic analysis of potential mediators informed by the leisure constraints model, the notion of gender role socialization, and feminist approaches to leisure studies. By addressing this gap, this paper has updated the earlier finding that women do fewer vigorous physical activities than men and partially explained why this situation persists.

References

- Abele, A. E., & Wojciszke, B. (2014). Communal and Agentic Content in Social Cognition. In *Advances in Experimental Social Psychology*. Elsevier Science & Technology.
- Abrams, D., Thomas, J. & Hogg, M. A. (1990). Numerical distinctiveness, social identity and gender salience. *British Journal of Social Psychology*, 29(1), 87–92.
- Aitchison, C. (2001). Gender and Leisure Research: The "Codification of Knowledge." *Leisure Sciences*, 23(1), 1–19.
- Armstrong, Bauman, & Davies (2000). Physical activity patterns of Australian adults: results of the 1999 National Physical Activity Survey. *Australian Institute of Health and Welfare*, 17.
- Aune, D., Norat, T., Leitzmann, M., Tonstad, S., & Vatten, L. J. (2015). Physical activity and the risk of type 2 diabetes: a systematic review and dose-response meta-analysis. *European Journal of Epidemiology*, 30(7), 529–542.
- Bae, W., Ik Suh, Y., Ryu, J., & Heo, J. (2017). Physical Activity Levels and Well-Being in Older Adults. *Psychological Reports*, 120(2), 192–205.
- Baker, E. H. (2014) Socioeconomic Status, Definition. *The Wiley Blackwell Encyclopedia of Health, Illness, Behavior, and Society*.
- Barrett, A. E., & Raphael, A. (2018). Housework and Sex in Midlife Marriages: An Examination of Three Perspectives on the Association. *Social Forces*, 96(3), 1325–1350.
- Bartky, S. L. (1990). *Femininity and domination: Studies in the phenomenology of oppression*. New York: Routledge.
- Beck, M. E., & Arnold, J. E. (2009). Gendered time use at home: an ethnographic examination of leisure time in middle-class families. *Leisure Studies*, 28(2), 121–142.
- Bem, S. L. (1993). *The lenses of gender: transforming the debate on sexual inequality*. Yale University Press.
- Bem, S. L. (1983). Gender Schema Theory and Its Implications for Child Development: Raising Gender-Aschematic Children in a Gender-Schematic Society. *Signs: Journal of Women in Culture and Society*, 8(4), 598–616.

- Bianchi, S. M., Robinson, J. P., & Milkie, M. A. (2006). *Changing rhythms of American family life*. Russell Sage Foundation.
- Bianchi, S., Wight, V., & Raley, S. (2005). *Maternal employment and family caregiving: Rethinking time with children in the ATUS*, paper presented at ATUS Early Results Conference, Bethesda MD, Dec. 2005.
- Bittman, M., & Wajcman, J. (2000). The Rush Hour: The Character of Leisure Time and Gender Equity. *Social Forces*, 79(1), 165–189.
- Brim, Orville Gilbert, Baltes, Paul B., Bumpass, Larry L., Cleary, Paul D., Featherman, David L., Hazzard, William R., ... Shweder, Richard A (2020). Midlife in the United States (MIDUS 1), 1995-1996. Inter-university Consortium for Political and Social Research.
- Brown, D. R., Yore, M. M., Ham, S. A., & Macera, C. A. (2005). Physical activity among adults ≥ 50 yr with and without disabilities, BRFSS 2001. *Medicine and Science in Sports and Exercise*, 37(4), 620–629.
- Brown, P. R., Brown, W. J., Miller, Y. D., & Hansen, V. (2001). Perceived Constraints and Social Support for Active Leisure Among Mothers with Young Children. *Leisure Sciences*, 23(3), 131–144.
- Carriero. (2021). The role of culture in the gendered division of domestic labor: Evidence from migrant populations in Europe. *Acta Sociologica*, 64(1), 24–47.
- Choi. (2000). *Femininity and the physically active woman*. Routledge.
- Coakley, & White, A. (1992). Making Decisions: Gender and Sport Participation among British Adolescents. *Sociology of Sport Journal*, 9(1), 20–35.
- Craig, L. (2006). Children and the revolution: a time-diary analysis of the impact of motherhood on daily workload. *Journal of Sociology (Melbourne, Vic.)*, 42(2), 125–143.
- Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9(2), 119–127.
- Crawford, D. W., Jackson, E. L., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13(4), 309–320.

- Crompton, R., & Harris, F. (1997). Women's Employment and Gender Attitudes: A Comparative Analysis of Britain, Norway and the Czech Republic. *Acta Sociologica*, 40(2), 183–202.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Sage.
- Currie, J. (2009). Managing Motherhood: Strategies Used by New Mothers to Maintain Perceptions of Wellness. *Health Care for Women International*, 30(7), 653–668.
- Dar-Nimrod, & Heine, S. J. (2011). Genetic Essentialism: On the Deceptive Determinism of DNA. *Psychological Bulletin*, 137(5), 800–818.
- Deem, R. (1982). Women, leisure and inequality. *Leisure Studies*, 1(1), 29–46.
- Deutsch, F. M., Lussier, J. B., & Servis, L. J. (1993). Husbands at Home: Predictors of Paternal Participation in Childcare and Housework. *Journal of Personality and Social Psychology*, 65(6), 1154–1166.
- Desvaux, G., Devillard, S., Zelicourt, A., Kossoff, C., Labaye, E., & Sancier-Sultan, S. (2017). Women matter: time to accelerate, ten years of insights on gender diversity. *McKinsey&Company*, October 04.
- Engel. (1994). II. Sex Roles and Gender Stereotyping in Young Women's Participation in Sport. *Feminism & Psychology*, 4(3), 439–448.
- Fast, J., & Frederick, J. A. (1998). *The Time of our lives: juggling work and leisure over the life cycle*. Statistics Canada, Housing, Family & Social Statistics Division.
- Ferri, E., & Smith, K. (1996). *Parenting in the 1990s*. Joseph Rowntree Foundation, York.
- Fine C. (2017). *Testosterone Rex: Myths of sex, science, and society*. WW Norton & Company.
- Gallup and International Labour Organization. (2017). *Towards a Better Future for Women and Work: Voices of Women and Men*. Geneva: ILO.
- Gammie, B., & Gammie, E. (1997). Career progression in accountancy - the role of personal and situational factors. *Women in Management Review* (Bradford, West Yorkshire, England: 1992), 12(5), 167–173.

- Gaunt, R. (2006). Couple Similarity and Marital Satisfaction: Are Similar Spouses Happier? *Journal of Personality*, 74(5), 1401–1420.
- Gershuny, J. (2003). *Changing times: work and leisure in postindustrial society*. Oxford University Press.
- Ghimire, R., Green, G., Poudyal, N., & Cordell, K. (2014). An Analysis of Perceived Constraints to Outdoor Recreation. *Journal of Park and Recreation Administration*, 32(4), 52-67.
- Goffman. (1979). *Gender advertisements*. Harper & Row.
- Granger, D. A., Shirtcliff, E. A., Booth, A., Kivlighan, K. T., & Schwartz, E. B. (2004). The "trouble" with salivary testosterone. *Psychoneuroendocrinology*, 29, 1229–1240.
- Gray, D. E. (1989). Gender and Organizational Commitment Among Hospital Nurses. *Human Relations (New York)*, 42(9), 801–813.
- Gray, D. (2004). *Doing Research in the Real World*. SAGE.
- Green, E., Hebron, S., & Woodward, D. (1987). Leisure and gender: a study of Sheffield women's leisure experiences. Sports Council and Economic & Social Research Council.
- Greenstein, T. N. (1995). Gender Ideology, Marital Disruption, and the Employment of Married Women. *Journal of Marriage and Family*, 57(1), 31–42.
- Greenstein, T. N. (2000). Economic Dependence, Gender, and the Division of Labor in the Home: A Replication and Extension. *Journal of Marriage and Family*, 62(2), 322–335.
- Gross, Neil, and Solon Simmons (2002), "Intimacy as a Double-Edged Phenomenon? An Empirical Test of Giddens", *Social Forces*, 81, 531-555.
- Harrington, M. (2013). Families, Gender, Social Class, and Leisure. In V. J. Freysinger, S. M. Shaw, K. A. Henderson, & M. D. Bialeschki (Eds.), *Leisure, women, and gender* (pp. 326–342). Venture Publishing.
- Harrington, M., Dawson, D., & Bolla, P. (1992). Objective and Subjective Constraints on Women's Enjoyment of Leisure. *Loisir et Société*, 15(1), 203–221.

- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. Guilford Press.
- Henderson, K. A. (1991). The Contribution of Feminism to an Understanding of Leisure Constraints. *Journal of Leisure Research*, 23(4), 363–377.
- Henderson, K. A. (1994) 'Broadening an Understanding of Women, Gender and Leisure', *Journal of Leisure Research*, 26 (1), 1–7.
- Henderson, K. A. (2013). Feminist Leisure Studies: origins, accomplishments and prospects. In T. Blackshaw (Eds.), *Routledge handbook of leisure studies* (pp. 26–39). Routledge, Taylor & Francis Group.
- Hilbrecht, M. (2009). *Parents, employment, gender and well-being: A time use study*. Ph.D. Thesis, University of Waterloo.
- Hilbrecht, M. (2013). Time use in daily life: Women, families, and leisure. In V. J. Freysinger, S. M. Shaw, K. A. Henderson, & M. D. Bialeschki (Eds.), *Leisure, women, and gender* (pp. 177–191). State College, PA: Venture Publishing.
- Hochschild, A. R. (2002). *The second shift: working parents and the revolution at home*. Viking.
- Holt, H. & Thaulow, I. (1996). Formal and Informal Flexibility in the Workplace. In *The Work—Family Challenge: Rethinking Employment*. SAGE Publications Ltd.
- Huyck, M. H. (1999). Gender Roles and Gender Identity in Midlife. In *Life in the Middle*. Academic Press.
- International Labour Organization. (2016). *Women at Work: Trends 2016*. Geneva: ILO.
- International Labour Organization. (2015). *Women in Business and Management: Gaining Momentum*. Geneva: ILO.
- Joel, D., Berman, Z., Tavor, I., Wexler, N., Gaber, O., Stein, Y., Shefi, N., Pool, J., Urchs, S., Margulies, D. S., Liem, F., Hänggi, J., Jäncke, L., & Assaf, Y. (2015). Sex beyond the genitalia: The human brain mosaic. *Proceedings of the National Academy of Sciences*, 112(50), 15468-15473.
- Jones, B. H., & McNamara, K. (1991). Attitudes toward women and their work roles: effects of intrinsic and extrinsic religious orientations. *Sex Roles*, 24(1-2), 21–29.

- Joseph, R. P., Ainsworth, B. E., Keller, C., & Dodgson, J. E. (2015). Barriers to physical activity among African American women: An integrative review of the literature. *Women & Health, 55*(6), 679–699.
- Kalmijn, M., De Graaf, P. M., & Poortman, A.R. (2004). Interactions Between Cultural and Economic Determinants of Divorce in The Netherlands. *Journal of Marriage and Family, 66*(1), 75–89.
- Katz P. (1986). Gender identity: development and consequences. In *The Social Psychology of Female-Male Relations*, ed. R Ashmore, F Del Boca, pp. 21-67. New York: Academic.
- Kay, T. (2001). New women, same old leisure: The upholding of gender stereotypes and leisure disadvantage in contemporary dual earner households. In S. Clough, & J. White *Women's leisure experiences: Ages, stages and roles*. Vol. 70, (pp. 113-128). Eastbourne, UK: Leisure Studies Association.
- Kay, T. (1998). Having It All or Doing It All? The Construction of Women's Lifestyles in Time-Crunched Households. *Loisir et Société, 21*(2), 435–454.
- Kimm, S. Y., Glynn, N. W., Kriska, A. M., Barton, B. A., Kronsberg, S. S., Daniels, S. R., Crawford, P. B., Sabry, Z. I., & Liu, K. (2002). Decline in Physical Activity in Black Girls and White Girls during Adolescence. *The New England Journal of Medicine, 347*(10), 709–715.
- Knights, D. (2006). Passing the Time in Pastimes, Professionalism and Politics: Reflecting on the ethics and epistemology of time studies. *Time & Society, 15*(2-3), 251–274.
- Layland, Stone, G. A., Mueller, J. T., & Hodge, C. J. (2018). Injustice in Mobile Leisure: A Conceptual Exploration of Pokémon Go. *Leisure Sciences, 40*(4), 288–306.
- Lorber. (2001). *Gender inequality: feminist theories and politics*. Roxbury Pub.
- Mackenzie, C. R. (2014). "It is hard for mums to put themselves first": How mothers diagnosed with breast cancer manage the sociological boundaries between paid work, family and caring for the self. *Social Science & Medicine, 117*, 96–106.
- Marshall, K. (2006). *Converging gender roles*. Statistics Canada.

- McKenna, K. Y. A., & Bargh, J. A. (1998). Coming out in the age of the internet: Identity demarginalization through virtual group participation. *Journal of Personality and Social Psychology*, 75(3), 681–694.
- Medina-Claros, S., García-Pardo, F., Pérez-Moreno, S., & Bárcena-Martín, E. (2021). Economic gender gap: Which countries are falling behind? *Panoeconomicus*, 68(2), 213–230.
- Milkie, M. A., & Peltola, P. (1999). Playing All the Roles: Gender and the Work-Family Balancing Act. *Journal of Marriage and Family*, 61(2), 476–490.
- Miller, Y. D., & Brown, W. J. (2005). Determinants of Active Leisure for Women with Young Children-an "Ethic of Care" Prevails. *Leisure Sciences*, 27(5), 405–420.
- Mock, S. E., Shaw, S. M., Hummel, E. M., & Bakker, C. (2012). Leisure and diversity in later life: Ethnicity, gender, and sexual orientation. In H. Gibson and J. Singleton (Eds.), *Leisure and Aging: Theory and Practice*, (pp. 111-125). Windsor, ON: Human Kinetics.
- Physical Activity Guidelines Advisory Committee report, 2008. To the Secretary of Health and Human Services. Part A: executive summary. (2009). *Nutrition Reviews*, 67(2), 114–120.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior* 19, 2-21.
- Richardson, S. S. (2013). *Sex itself: The search for male and female in the human genome*. University of Chicago Press.
- Ritchie, Cox, S. R., Shen, X., Lombardo, M. V., Reus, L. M., Alloza, C., Harris, M. A., Alderson, H. L., Hunter, S., Neilson, E., Liewald, D. C. M., Auyeung, B., Whalley, H. C., Lawrie, S. M., Gale, C. R., Bastin, M. E., McIntosh, A. M., & Deary, I. J. (2018). Sex differences in the adult human brain: Evidence from 5216 UK biobank participants. *Cerebral Cortex*, 28(8), 2959–2975.
- Rudman, L. A., & Goodwin, S. A. (2004). Gender Differences in Automatic In-Group Bias: Why Do Women Like Women More Than Men Like Men? *Journal of Personality and Social Psychology*, 87(4), 494–509.

- Ryff, Carol, Almeida, David M., Ayanian, John, Carr, Deborah S., Cleary, Paul D., Coe, Christopher, ... Williams, David (2017). Midlife in the United States (MIDUS 2), 2004-2006. Inter-university Consortium for Political and Social Research.
- Samdahl, D. (2013). Women, gender, and leisure constraints. In V. J. Freysinger, S. M. Shaw, K. A. Henderson, & M. D. Bialeschki (Eds.), *Leisure, women, and gender* (pp. 109–126). State College, PA: Venture Publishing.
- Sczesny, S., Nater, C., & Eagly, A.H. (2019). Agency and Communion: Their Implications for Gender Stereotypes and Gender Identities. In A. E. Abele, B. Wojciszke (Eds.), *Agency and Communion in Social Psychology* (pp. 103–116). State College, PA: Venture Publishing.
- Shaw, S. M. (1994). Gender, Leisure, and Constraint: Towards a Framework for the Analysis of Women's Leisure. *Journal of Leisure Research*, 26(1), 8–22.
- Shaw, S. M., Bonen, A., & McCabe, J. F. (1991). Do More Constraints Mean Less Leisure? Examining the Relationship between Constraints and Participation. *Journal of Leisure Research*, 23(4), 286–300.
- Shiroma, E. J., & Lee, I.M. (2010). Physical Activity and Cardiovascular Health: Lessons Learned from Epidemiological Studies Across Age, Gender, and Race/Ethnicity. *Circulation (New York, N.Y.)*, 122(7), 743–752.
- Simone de Beauvoir, S. (1961). *The second sex*. New York: Bantam Books.
- Slater, & Tiggemann, M. (2010). "Uncool to do sport": A focus group study of adolescent girls' reasons for withdrawing from physical activity. *Psychology of Sport and Exercise*, 11(6), 619–626.
- Stephan, Y., Sutin, A. R., Luchetti, M., Bosselut, G., & Terracciano, A. (2018). Physical Activity and Personality Development over Twenty Years: Evidence from Three Longitudinal Samples. *Journal of Research in Personality*, 73, 173–179.
- Tolman, D. L., & Debold, E. (1993). Conflicts of body and image: Female adolescents, desire, and the no-body body. In P. Fallon, M. Katzman, & S. Wooley (Eds.), *Feminist perspectives on eating disorders* (pp. 301–317). New York: Guilford.

- Tolman, D.L., Impett, E. A., Tracy, A. J., & Michael, A. (2006). Looking Good, Sounding Good: Femininity Ideology and Adolescent Girls' Mental Health. *Psychology of Women Quarterly*, 30(1), 85–95.
- Troiano, R. P., Berrigan, D., Dodd, K. W., Msse, L. C., Tilert, T., & McDowell, M. (2008). Physical Activity in the United States Measured by Accelerometer. *Medicine and Science in Sports and Exercise*, 40(1), 181–188.
- Vannoy, D., & Cubbins, L. A. (2001). Relative Socioeconomic Status of Spouses, Gender Attitudes, and Attributes, and Marital Quality Experienced by Couples in Metropolitan Moscow. *Journal of Comparative Family Studies*, 32(2), 195–217.
- Velding. (2017). Depicting Femininity: Conflicting Messages in a "Tween" Magazine. *Youth & Society*, 49(4), 505–527.
- Videon. (2002). Who Plays and Who Benefits: Gender, Interscholastic Athletics, and Academic Outcomes. *Sociological Perspectives*, 45(4), 415–444.
- Walby, S. (1990) *Theorizing Patriarchy*. Oxford: Basil Blackwell.
- Warburton, D. E. R., Nicol, C. W., & Bredin, S. S. D. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association Journal (CMAJ)*, 174(6), 801–809.
- West, C., & Zimmerman, H.D. (1987). Doing gender. *Gender & Society*, 1, 125–151.
- Westerhof, G. J., & Barrett, A. E. (2005). Age Identity and Subjective Well-Being: A Comparison of the United States and Germany. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 60(3), 129–136.
- Williams, J. E., & Best, D. L. (1990). *Measuring sex stereotypes: a multination study*. Sage.
- Wimbush, E., & Talbot, M. (1988). *Relative freedoms: women and leisure*. Open University Press.
- World Economic Forum. (2019). *Global Gender Gap Report 2020*. Geneva: World Economic Forum.
- Yemiscigil, A., & Vlaev, I. (2021). The bidirectional relationship between sense of purpose in life and physical activity: a longitudinal study. *Journal of Behavioral Medicine*.