Perceptions of Body Image and Food Choices

Among Urban and Rural Manitoban Baby Boomer Women

By

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Abstract

Introduction: Literature on body image and body satisfaction of baby boomer women (BBW - born between 1946-1965) is limited. **Objectives:** To examine body image perceptions, weight attitudes and eating behaviours of BBW residing in rural and urban Manitoba. **Methods:** 1083 participants completed an online survey (completion rate= 87%), consisting of 46 multiple choice, open-ended and visual analog scale (VAS) questions addressing demographics, self-rated body satisfaction and health, body work practices, appearance pressures, and eating habits. **Results:** Body dissatisfaction (BD) was common among BBW with weight as a greater concern than overall appearance. Body work and dieting behaviours were used to mitigate BD, and media was associated with both body satisfaction and food choices. **Conclusion:** Healthcare professionals need to better understand body image concerns of aging women and specialized community services are required to address BD and clarify confusing media and food industry messages regarding health and nutrition.

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Dedication

This thesis is dedicated to my dear friend, mother-in-law, and study participant Doreen Webb whom regrettably passed away shortly after this project was proposed. You were my cheerleader. Always the most eager to hear about the progression of my research and never turning down the opportunity to listen to me practice for presentations. I am so sad you are not here to listen to the results you have contributed to, but I am fortunate to have had your presence with me throughout this entire experience. Thank you for your tireless support, love, and generosity, your kind spirit will never be forgotten. Love you forever.

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List of Abbreviations

AN	Anorexia nervosa
BN	Bulimia nervosa
BBW	Baby Boomer Women
BMI	Body Mass Index
BD	Body Dissatisfaction
CCHS	Canadian Community Health Survey
CI	Confidence Interval
DE	Disordered Eating
DWC	Desired Weight Change
ED	Eating Disorder
GRC	Gender Role Conflict
kg	Kilograms
lbs	Pounds
MB	Manitoba
MC	Multiple choice
mm	Millimeter
NA	North America
OBBW	Older Baby Boomer Women
OR	Odds Ratio
PA	Physical Activity
PRA	Prairie Research Associates
RD	Registered Dietitian
SES	Social Economic Status
SNS	Social Networking Sites
YBBW	Younger Baby Boomer Women
VAS	Visual Analog Scale

CHAPTER 1

INTRODUCTION

Overview

The Canadian population is aging and people are living longer (Statistics Canada, 2016a). As of 2016, the baby boomer generation (individuals born between 1946 – 1965) made up 26% of the Canadian population (Statistics Canada, 2017a). This large cohort is highly educated, affluent, and is challenging the traditional attitudes toward aging (Biggs, Phillipson, Leach, & Money, 2007; Centre on Aging, 2011) and thus, are shaping Canadian food trends with a heightened awareness of food-health relationships (Agriculture and Agri-Food Canada, 2011; 2014a).

Despite longevity and a greater awareness of health-conscious behaviours, baby boomers are undergoing a number of physical and psychological changes associated with aging which are not always positively welcomed in today's society, especially by baby boomer women (BBW) (Lewis & Cachelin, 2001; Liechty, 2012; Sabik, 2013). To counteract these physiological processes, women are engaging in potentially detrimental health behaviours such as dieting and restrictive eating, which may put them at risk for nutrient deficiencies, osteoporosis, poor glucose regulation, decreased immune function, and malnutrition (Marshall, Lengyel, & Utioh, 2012). The cyclical nature of dieting begins and ends with body dissatisfaction (BD) as dieting is often unsuccessful, resulting in unenjoyable attitudes toward food and psychological implications such as depression, anxiety, poor self-esteem, reduced quality of life, and social isolation due to failure which exacerbates BD (Lewis & Cachelin, 2011; Lietchy, 2012; Marshall et al., 2012). This detrimental cycle arises because females in Western society, and particularly in North America (NA), have long been socialized to believe that they are to be thin and

beautiful in a way that resembles females in media advertisements and that status is gained through their appearance (Clarke 2001; 2002). Therefore, as women age and move further away from the societal beauty ideals they may be at risk for BD, disordered eating (DE), or eating disorders (ED) (Ferraro, Muehlenkamp, Painter, Wasson, Hager, & Hoverson, 2008; Winterich, 2007; Myers & Crowther, 2007). In a similar way to the psychological implications of BD, middle-aged and older women who report ED tendencies are more likely to experience depression, anxiety, and alcohol abuse than women without ED symptoms (Gadalla, 2008). Regardless of age, females report greater BD and weight preoccupations compared to their male counterparts (Peat, Peyerl, & Muehlenkamp, 2008; Marshall et al., 2012; Ferraro et al., 2008) and media pressures are argued to be the strongest correlate for BD (Bedford & Johnson, 2006).

The combination of a higher level of education, health conscious behaviours of BBW, the growth of mass media outlets and unrealistic standards imposed by advertising provide further complexity to how BBW view food, nutrition, health, and body image (Marshall et al., 2012). Body image is a multidimensional construct involving anthropometric, perceptual, emotional, developmental, sociocultural, behavioural, and health-related components, which when negatively impacted can result in BD (Sarwer & Crerand, 2004; de Souto Barreto, P., Ferrandez, A., & Guihard-Costa, A., 2011).

Currently, there is limited consensus within the literature with respect to the importance of body image and body satisfaction across groups of girls and women (young, middle-aged, or older), and little is known about what body image means to older women, those 50 years and older (Liechty, 2012); however, we do know that that body image issues, weight preoccupation, and eating disturbances can persist throughout the lifespan or even commence in older age,

affecting young and older women to a similar degree (Lewis & Cachelin, 2001; Webster &

Tiggemann, 2003; Mangweth-Matzek et al., 2006, 2014; Gadalla, 2008).

Research Objectives

The research objectives of this study with BBW residing in rural and urban Manitoban

communities are:

1. To examine body image satisfaction, weight attitudes, and aging concerns;

2. To examine eating behaviours and factors that may influence food choices and preference

   for local, organic, and functional food products;

3. To determine availability and opinions related to community health and nutrition

   services.

Research Questions

This study seeks to answer the following questions:

1. What are the characteristics of BBW residing in rural and urban Manitoba (MB)?

2. Are there associations between body satisfaction and sociodemographic, environmental,

   or health/behaviour-related factors for BBW in MB?

3. What are the predictors of body satisfaction for Manitoban BBW?

4. Are there differences in sociodemographic, environmental, or health/behaviour-related

   factors among older and younger BBW residing in rural vs urban areas in MB?

5. Are there associations between food choices (preference for local, organic, or functional

   foods) and health/behaviour-related factors for BBW in MB?

6. From a consumer perspective, are there services and resources related to nutrition and

   body image available to BBW in both rural and urban Manitoban communities?

Significance of Research

Literature on body image and body satisfaction among adolescents and young women is ubiquitous (Grippo & Hill, 2008; Hurd, 2000; Marshall et al., 2012; Cash & Henry, 1995); however, limited for aging adult women (Hurd, 2000; Allaz, Bernstein, Vannes, Rouget, & Morabia, 1998; Hurd Clarke & Korotchenko, 2011) with no studies addressing the issues of body satisfaction and the interconnection of food choices of BBW independently of other female generations. The scarcity of the literature, in addition to inconsistencies in the findings (Peat et al., 2008) warrants greater research that fully examines the course and outcomes of body image and BD in women over 50, especially at a time when the baby boomer generation accounts for almost 30% of the Canadian population (Statistics Canada, 2017a).

The results of this study will provide Registered Dietitians (RD) and other health care professionals with a better understanding of what body image means to women over 50 and the challenges their clients may be facing, and assist in the development of educational strategies. In addition, the food industry may use the new information to better meet consumer demands of Canadian BBW.

Chapter Summary

This thesis is structured as a paper-based manuscript and includes the following chapters:

Chapter 2 is a comprehensive literature review describing the demographics of baby boomers, their perceived body image and body satisfaction, as well as their food choices.

Chapter 3 outlines the theoretical framework used to guide this study and the methodology employed in this research.

Chapter 4 presents the manuscript titled "Body Image Perceptions, Weight Attitudes, and Aging Concerns of Baby Boomer Women in Manitoba".

Chapter 5 presents the manuscript titled "Exploring the Food Choices of Baby Boomer Women in Manitoba".

Chapter 6 provides a general discussion of the main study findings.

CHAPTER 2

LITERATURE REVIEW

Demographics

The Baby Boomers. A baby boom is defined by Statistics Canada as "a sudden rise in the number of births observed from year to year", and ends with a sudden drop in the number of births (Statistics Canada, 2015). The baby boom lasted 20 years in Canada. The largest annual increase in births occurred between 1945 and 1946 (an approximate 15% increase), which marked the advent of the baby boom period. The end of the baby boom period was marked by the largest relative decrease (-8%) in births, which occurred between 1964 and 1965. Over 8.2 million babies were born during the baby boom, an average of 412,000 per year, in comparison to 377,886 births in 2008 when the population was twice as large as it was during the baby boom (Statistics Canada, 2015).

Baby Boomer Generation. The baby boomer cohort is one of the most fascinating population groups in contemporary history for two unique reasons. First, they are credited as having a youthful approach to culture, and are often regarded as having a hopeful outlook on a better society due to being children of post-war opportunities that were different from previous generations (Biggs et al., 2007). The historical and social shifts that took place at the time baby boomers were coming of age invoked a sense of generational identity and collective awareness which has been argued to result in a radical, liberal, and 'youthful' cultural status of this generation (Biggs, et al., 2007). Second, baby boomers are among the largest cohort to survive into later life, provoking an image of a fitter and richer cohort than preceding ones, whereby they are challenging the traditional attitudes toward aging (Biggs et al., 2007). The 2016 Canadian census provides the most recent statistics regarding the baby boomer generation and at that time,

baby boomers made up 26% of the Canadian population (Statistics Canada, 2017a), illustrating a significant proportion of the Canadian population who are undergoing both physical and psychological changes associated with aging (Lewis & Cachelin, 2001). Additionally, with the first baby boomers turning 65 in 2011, Canada experienced the largest increase (+20%) in the number of individuals 65 years and older for the first time in 70 years (Statistics Canada, 2017a,b). The 2016 census also enumerated more individuals 65 years and older (5.9 million) than children 14 years and younger (5.8 million) (Statistics Canada, 2017a). This growth in the senior population will likely account for interesting shifts in the country's labour force, health care system, and food industry as the baby boomer cohort is re-defining what it means to age, yet juggling new obstacles not previously observed by preceding generations (Biggs et al., 2007).

A notable change associated with the baby boomers are additional stressors such as identifying as a member of the "sandwich" generation (Centre on Aging, 2011). This generation describes individuals who are caught between the demands of caring for one or more dependent children as well as caring for aging parents (Boyczuk & Fletcher, 2016). The "sandwich" generation resulted in several North American trends such as: the baby boomer cohort reaching advanced age, higher life expectancies, later child bearing, and a decrease in number of children per family (Boyczuk & Fletcher, 2016). These trends have led to an increase in the number of aging seniors and a reduced number of adults available to provide care, which is why many baby boomers are caring for aging parents (Boyczuk & Fletcher, 2016). In Remennick's (1999) study, the pressing responsibilities of sandwiched women caregivers in particular, resulted in negative effects on overall wellbeing, as caregiver burden was identified as leading to chronic fatigue, reduced social integration, poor health habits, and less time for one's self. In a more recently published longitudinal study comparing the health habits of sandwiched caregivers, parent-only

caregivers, child-only caregivers, and non-caregivers, the results demonstrated that caregivers who were sandwiched were less likely to check food labels compared to the other groups, were significantly less likely to choose foods based on health reasons, and greater emphasis was placed on the health or wants of others (Chassin, Macy, Seo, Presson, & Serman, 2010). This is concerning as food and health are strongly correlated, and caregiver satisfaction and wellbeing should not be compromised when an individual is caring for others.

Male and Female Baby Boomers. Differences among men and women of the baby boomer cohort have spanned across a variety of areas such as education, income, management of caregiver burden, spending patterns, and overall health and weight (Centre on Aging, 2011; Biggs et al., 2007; Chassin et al., 2010). As a whole, the baby boomer generation has shown greater levels of education than previous generations and the gap seen between younger boomer men and women's education levels is almost negligible (Statistics Canada, 2016c). However, Manitoban men aged 65 and older were more likely than women of this cohort to have obtained a university certificate, diploma or degree (Centre on Aging, 2011). In 2005, Manitoban women aged 55-64 had lower annual incomes than men aged 45-64 ($27,165 versus $47,072), which is likely due to more female boomers (13.6%) being retired than men (3.9%) (Centre on Aging, 2011). Women also identified more often than men that caring for a family member or friend was the reason for early retirement. In addition, women experienced caregiver burden more so than their male counterparts (Boyczuk & Fletcher, 2016), which they accompanied with a decrease in social interactions and time available to spend with children (Centre on Aging, 2011). Spending patterns were similar for men and women, whereby both genders identified the same top three areas of spending as shelter, followed by food and transportation; however, dollar allocation varied by gender whereby men identified spending a larger proportion of total

consumption on recreation compared to women (8.3% versus 5.8%) (Centre on Aging, 2011). With respect to overall health and weight in 2007, 41%, of Manitoba's baby boomers were classified as overweight, with more men (48%) than women (34%), respectively (Centre on Aging, 2011). Despite the relatively high prevalence of overweight boomers, 53.4% described their health as excellent or very good in the 2007 Canadian Community Health Survey (cited in Centre on Aging, 2011). This was also exemplified among overweight older male participants (84% of male participants) of an American study whereby the overweight men did not show any differences in body shape measures compared to normal-weight male participants, indicating a lack of weight related health concerns among males (Ferraro et al., 2008). Finally, an important area where gender differences did not appear evident for baby boomers was with respect to men and women's attitudes regarding other people's opinions about themselves (Biggs et al., 2007). Both genders agreed to being at ease with their current age (Biggs et al., 2007).

Health of Canadian Adults

The percentage of overweight and obese Canadian adults is at 64%, a substantial increase since the late 1970s (Statistics Canada, 2018). Excess weight is a risk factor for type 2 diabetes, cardiovascular disease, hypertension, some cancers, and functional limitations (Statistics Canada, 2008; 2018). Cancer and heart disease are leading causes of death for Canadians 45-64 and women are more likely to die from cancer than men while men are more likely to succumb to heart disease (Centre on Aging, 2011). Increasing age is associated with an increase in chronic conditions. Almost one-third of Manitoban's 45-64 have one chronic health condition and 23.3% of Manitobans 75 years and older have four or more chronic health conditions compared to 5% of individuals 45-64 (Centre on Aging, 2011). The most common chronic health conditions for Manitobans 45-64 are hypertension, arthritis, and back problems (Centre on Aging, 2011).

Nutrition and Baby Boomers. As previously mentioned, baby boomers are increasingly aware of health-conscious behaviours to prevent chronic disease, maintain health, and prolong life (Business Development Bank of Canada, 2013; Biggs et al., 2007). Participants in the study by Biggs et al. (2007), showed that a healthy diet appears to be one of the main ways in which baby boomers could take control of health issues and promote longevity. In addition, participants reported that as they aged, they were increasingly aware of what constituted a healthy diet and the positive effects eating well had on health outcomes (Biggs et al., 2007). Even though rates of obesity among Canadian adults is high (Centre on Aging, 2011; Statistics Canada, 2014, Statistics Canada, 2018; Business Development Bank of Canada, 2013), there appears to be a heightened awareness of food-health relationships (Agriculture & Agri-Food Canada, 2014b). Specifically, there is a current growing interest in functional food products such as fibre, vitamins and minerals, protein, and omega-3s and projected increased demand for glucosamine, probiotics, and sterol esters in the coming years (Agriculture & Agri-Food Canada, 2014b). Local and organic food products are also trending amongst Canadians (Food Matters Manitoba, 2015; Agriculture and Agri-Food Canada, 2014c) with supposition that marketing to specific demographics, such as the aging population, may be contributing to this growing demand and interest (Agriculture & Agri-Food Canada, 2014b).

Canadian Food Trends

Functional Foods. Canada is a global supplier of functional foods and natural health products, with over 750 Canadian companies specializing in the area and generating more than $11 billion in revenues. It is a rapidly growing sector within the Canadian food industry and functional foods can be found almost anywhere groceries are sold. They are often purchased without the consumer being aware because many functional foods are conventional or similar in appearance

to conventional foods and are consumed as a part of a normal diet. These foods; however, demonstrate physiological benefits and/or reduce the risk of chronic disease beyond basic nutritional functions (Pelletier, Kundrat, & Hasler, 2002). Fortification of dairy and non-dairy beverages with vitamins and minerals, the addition of bioactive ingredients such as probiotics in yogurts, or special livestock feeding techniques (e.g., eggs with omega-3) are some examples of commonly found fortified foods in Canada (Agriculture and Agri-Food Canada, 2015).

Local Foods. In Canada, interest in locally sourced food is now one of the largest movements shaping consumer food behaviour, and is one of the five current trends shaping retail markets (Food Matters Manitoba, 2015). Local foods do not have a universal definition; however, they are often described as foods from the country, region, province, or municipality/city one lives in (Business Development Bank of Canada, 2013). Food Matters Manitoba (2015), narrows down that definition to provincial boundaries or radius around an institution (e.g., 200 km from the institution). The benefits of procuring local foods include: supporting local business, building relationships between the buyer and supplier, supporting agricultural practices, encouragement of consuming healthier, fresher foods that are less processed, building equitable food systems, and finally to create a sense of pride, satisfaction and trust within institutions (Food Matters Manitoba, 2015). According to the Business Development Bank of Canada's Report (2013), 2 out of 5 Canadians consider local production an important factor in their purchasing decisions, and many Canadians are willing to pay more for groceries and meals at a restaurant if the food is locally sourced. In addition, Canadians believe that food from Canada is safer than food sourced from abroad (Business Development Bank of Canada, 2013).

Organic Foods. Since the 1980s, Canada has seen a small but increasing organic agriculture sector; however, recently there has been a sharp growth in organic food consumption, which is

developing even faster than the rate of production (Agriculture and Agri-Food Canada, 2014b). Organic foods are foods that are grown without the use of pesticides, synthetic fertilizers, or antibiotics and growth hormones (Dietitians of Canada, 2015). Organic farmers rely on crop rotation, recycling plant and animal waste, and natural pesticides to enrich the soil and grow their products. Currently, grains, vegetables, tree fruit, grapes and berries, beef, pork, poultry, milk and maple syrups are organic foods produced in Canada (Dietitians of Canada, 2015). To make an organic food claim, producers must meet the requirements established by the Canadian Food Inspection Agency and certified organic foods and products must have a special logo on the packaging to identify them as such (Dietitians of Canada, 2015).

Implications for Healthcare, Food Industry, and Education

The 2011 year marked the first year that baby boomers turned 65 years of age, which has prompted research on topics such as social concern and financial strain regarding healthcare needs following retirement (Centre on Aging, 2011). The baby boomer generation appears to be somewhat fear driven toward preventative health measures such as a healthy diet, regular exercise, and routine physician check-ups, as they often saw their parents die young (Biggs et al., 2007). The Business Development Bank of Canada Report (2013); however, attributed this rise in health awareness to the upsurge of health care concerns surrounding type 2 diabetes, heart disease, obesity, and hypertension. This heightened awareness is projected to continue to rise as the Canadian population ages (Business Development Bank of Canada, 2013). One major Canadian trends is the translation of health-related concerns and preoccupations to new consumer behaviours and habits, which is completely transforming food demand toward specialty, natural, organic and functional foods (Business Development Bank of Canada, 2013; Agriculture & Agri-Food Canada, 2011). This is opening a large niche market for the food

industry to develop specific products based on the demand of the baby boomer cohort. Traditional marketing as well as marketing through social media and other digital avenues creates multiple opportunities to familiarize baby boomers with such products. Participants in Biggs et al.'s (2007) study identified that society has increased the emphasis of health-related issues through magazines, booklets and advertisements aimed at diet, exercise, and health reports. Many participants identified taking the advice to maintain their health as they "…are more sort of body conscious… trying to prolong [their] lives…" (Biggs et al., 2007). Since consumers are guided by both credible and non-credible information sources, education by RDs and other health care professionals is necessary to ensure that consumers are in fact making healthful food and lifestyle choices that are sustainable over time.

Body Image and Body Dissatisfaction Among Baby Boomers

Body image refers to "an individual's thoughts, perceptions, feelings, and evaluations of his or her own body and plays an important role in our everyday lives" (Liechty, 2012). It is something that develops throughout life as a product of sensory and behavioural experiences, which include physical appearance, societal norms, and cultural ideals (Hurd, 2000).

BD occurs when someone has negative beliefs about their body, often believing certain body parts are too big (Myers & Crowther, 2007) or believing that they are too heavy (Martijn, Alleva, & Jansen, 2015). Women have been known to be dissatisfied with their bodies because they are unable to meet the beauty ideals prescribed by cultural standards (Myers & Crowther, 2007; Ferraro et al., 2008). Media pressures have been suggested to be the strongest correlate for BD, explaining 31% and 17% variance in dissatisfaction for both younger and older women, respectively (Bedford & Johnson, 2006). Other correlates for BD in women include: age, age associated physical changes, menopause, life events (e.g., divorce or caregiver burden), family

and social relationships, ethnicity and culture, as well as socioeconomic status (SES) (Marshall et al., 2012).

Prevalence of BD. Presently, the emphasis on appearance remains highly correlated with thinness and youthfulness (Bedford & Johnson, 2006; Wilcox, 1997; Hurd Clarke & Griffin, 2008; Levine, 2009). This notion places enormous pressure on women in today's society to strive to achieve an unrealistic body ideal, when in fact the average female body size is increasing and the ideal is shrinking (Liechty, 2012; Slevec & Tiggemann, 2011; Urquhart & Mihalynuk, 2011). Particularly since the 1960s, society has presented the message to women that in order to be successful they need to be thin, youthful and in control (Liechty, 2012; Levine; 2009). Thus, for decades, women have been striving to reach an ideal that is unattainable, resulting in feelings of failure and dissatisfaction (Liechty, 2012).

BD refers to the discrepancy between one's current and ideal self (Bedford & Johnson, 2006) and has been so prevalent since the 1980s that it has been described by researchers as a "normative discontent" (Marshall et al., 2012 from Rodin et al., 1984), whereby women appear to accept disliking their bodies as a normal fact of life. A number of possible mechanisms have been postulated for the transmission of the thin ideal (e.g., through friends, peers, family members, etc.); however, research indicates that advertisements and marketing via mass media are likely the most powerful conveyers of sociocultural ideals and are; therefore, argued to play a significant role in BD (Slevec & Tiggemann, 2011). Many researchers have argued that the prevalence of BD amongst the female population is as high as it is (illustrated in some studies to range from 40%-92%) (Mangweth-Matzek et al., 2006; Grippo & Hill, 2008; Liechty, 2012) due to the pervasive nature of societal messages that persist throughout the life course (Brown & Knight, 2015; Selvec & Tiggemann, 2011; Ferraro et al., 2008; Grippo & Hill, 2008). Women

are currently living in a society where the ideal body size is reflected in a BMI of approximately 18 kg/m^2, when in fact the average BMI of Canadian women is more accurately represented by 24 kg/m^2 (Urquhart & Mihalynuk, 2011). This large discrepancy between women's current body size and the societal ideal is speculated to lead to unhealthy eating behaviours and body work practices to narrow that gap.

Consequences of BD. Unfortunately, a vicious cycle occurs when girls and women are socialized to think that success is only achievable if they are thin and youthful. This thought process has the potential to lead to BD, prompting dieting behaviours which can include DE or even EDs. Serious consequences can occur when experiencing BD which Marshall et al. (2012) reviewed and identified that women (45-65 years of age and 65 plus) affected by BD had lower self-reported happiness, avoided physical intimacy, displayed anxiety, depression, poor self-esteem, and a decreased quality of life. Furthermore, the researchers illustrated that BD promotes body shame, which can render women to feel socially isolated as they avoid social activities due to poor self-image (Marshall et al., 2012). The consequences of BD also appear to be somewhat consistent throughout the lifespan, affecting older and younger girls and women to a similar degree (Peat et al., 2008; Bedford & Johnson, 2006; Grippo & Hill, 2008).

Eating Behaviours and Body Work Practices Among Baby Boomer Women. While limited epidemiological studies exist examining eating behaviours and body image in aging women (Mangweth-Matzek et al., 2006), it has been identified that poor eating behaviours previously identified (DE and/or EDs), can result in nutrient deficiencies and physiological disturbances that may lead to muscle loss, osteoporosis, poor glucose regulation, a decrease in immune function, and possibly weight loss (Marshall et al., 2012). A low BMI in women over 50 has been shown to be a risk factor of morbidity and mortality (Allaz et al., 1998). It is well known that dieting

practices are not sustainable (Urquhart & Mihalynuk, 2011), and the majority of adults who lose

weight re-gain it, perpetuating a cycle of "yo-yo dieting" or "weight cycling" (Brownell &

Rodin, 1994). This cyclical pattern that often ends in greater BD, is prompted by a failure of

dieting which creates unenjoyable feelings toward eating as well as negative psychological

implications (Peat et al., 2008; Marshall et al., 2012). The majority of women in Hurd's (2000)

study (aged 61-92) stated they used formal and informal dieting regimens to lose weight.

Similarly, Bedford & Johnson (2006) noted the most common weight control practices for both

young (19-23 years) and older (65-74 years) participants were exercising, dieting, and use of

herbal/health food store supplements. In addition, as the number of weight control practices

increased, BD scores became more negative, indicating greater dissatisfaction (Bedford &

Johnson, 2006). Despite the relatively small proportion of BBW who are practicing extreme

unhealthy eating behaviours such as DE and EDs, it is important to stress that these are not only

issues of younger generations but may persist or even commence in older age (Mangweth-

Matzek et al., 2006, 2014; Gadalla, 2008; Urquhart & Mihalynuk, 2011; Marshall et al., 2012).

EDs can include Anorexia Nervosa (AN), Bulimia Nervosa (BN), or Binge Eating

Disorder (BED). According to the DSM-5 criteria, diagnosis of AN includes persistent restriction

of energy intake leading to low body weight for age, sex, and physical health; either an intense

fear of weight gain, or persistent behaviour that interferes with weight gain; and a disturbance in

the way one perceives their body weight or shape (Eating Disorders Victoria, 2011). Diagnosis

of BN must include both episodes of binge eating followed by compensatory behaviours to

counteract the binge. The binging and compensatory behaviours must both be present at least

once a week for at least three months for diagnosis (Eating Disorders Victoria, 2011). BED

differs from BN whereby the binge eating behaviour is not accompanied by inappropriate compensatory methods.

Unlike EDs, DE does not have a universal definition; therefore, for the purposes of this research, DE will refer to habitual abnormalities in eating attitudes and behaviours. These include methods of both unhealthy and extreme weight control behaviours (regularly skipping meals, self-induced vomiting, chronic dieting, obsessive calorie counting, misuse of laxatives or diuretics, fasting, or restrained eating), basing self-worth on body shape and weight, binge eating, and orthorexia nervosa (an obsession with eating foods one thinks are healthy) (Urquhart & Mihalynuk, 2011; Eating Disorders Victoria, 2011).

More than half (56%) of the participants in Mangweth-Matzek et al.'s (2006) community study (women aged 60-70, n= 1000) admitted to restricting their diet to prevent weight gain, and weight control practices included: weight checks (71%), regular physical activity (69%), fasting (10%), laxative or diuretic use (6%), and vomiting/spitting out food (1%). Among this participant group, 18 presented with an ED: 1 with AN, 2 with BN, and 15 with eating disorders not otherwise specified (which included 5 with BED) (Mangweth-Matzek et al., 2006). Similarly, in a more recent study conducted by Mangweth-Matzek et al. (2014), 10% of participants (n= 715), aged 40-60 had an ED (5%) or subthreshold ED (5%) (not meeting all DSM-V criteria). Forty-six percent of those with an ED and 32% of those with a subthreshold ED were between 50-60 years old. Those women with subthreshold EDs showed virtually the same levels of associated pathology as those with a diagnosed ED; however, these women whom would benefit from professional help are likely being missed in clinical settings (Mangweth-Matzek et al., 2014).

Eating behaviours and body work practices are seen as ways to mitigate BD. Body work or appearance work practices are commonplace practices and refer broadly to any management, maintenance, and/or modification to one's body or appearance (Marshall, 2014). Body work comprises of any "technique, strategy, practice, product, or procedure adopted to maintain, change or alter one's external appearance" (Marshall, 2014). Examples that have been described in the literature include: hair dying, dieting and exercise, sun-tanning, using make-up, altering appearance through fashion, as well as cosmetic and non-cosmetic procedures such as Botox® or injectable fillers, cosmetic plastic surgery, and anti-wrinkle creams (Slevec & Tiggemann, 2010; Hurd Clarke & Korotchenko, 2011; Hurd Clarke & Bundon, 2009; Hurd, 2000).

It has been observed that more women than men engage in body work practices to combat the physical signs of aging (Mangweth-Matzek et al., 2006). This is likely due to the historical context from which the use of cosmetics stems (Hurd Clarke & Bundon, 2009) as well as the fact that women are socialized to be more concerned about their appearance (Hurd Clarke & Griffin, 2008). Cosmetic use is argued as an "internalization of pervasive ageist and patriarchal ideologies that equate [women's] social worth with their ability to achieve and maintain the ideal female body…" (Hurd Clarke & Bundon, 2009). Although women are entitled to choose to engage in body work practices, such choices are heavily, if not solely determined by powerful social norms (Hurd Clarke & Bundon, 2009). Hurd Clarke & Bundon (2009) evaluated the body work practices of older women (aged 71-93) and in their qualitative findings denoted that body work practices changed over time and those who identified wearing more makeup did so because of an increase in physical changes such as wrinkles and age spots. Those who decreased makeup use did so due to a reduction in social outings and/or physical challenges such as reduced vision or tremors, not because they had a new acceptance for how they looked (Hurd

Clarke & Bundon, 2009). Participants in this study also identified that they viewed wearing makeup as a way to show they cared about how they looked to others in public, additionally, because it made them appear healthy and independent to family, friends, and healthcare professionals (Hurd Clarke & Bundon, 2009). These reflections demonstrate how women use body work to respond to gendered ageism, make themselves more visible to others, and enhance self-esteem (Hurd Clarke & Griffin, 2008). Women also appear to alter their choice of body work practice depending on their age, stage of career, or security within a domestic partnership (Hurd Clarke & Griffin, 2008). Finally, depending on one's personal level of appearance investment, women selected to engage in more radical body work practices such as non-surgical and surgical procedures if they were more invested (Hurd Clarke & Griffin, 2008).

Factors Associated with BD

Societal Pressures, Being Female, and Experiencing Menopause. Regardless of age, girls and women report greater BD and weight preoccupations than their male counterparts (Peat et al., 2008; Marshall et al., 2012; Ferraro et al., 2008). Girls and women are socialized very differently than boys and men in NA. Western society emphasizes that being thin and beautiful will equate to success; therefore, women in Western cultures tend to gain status through their appearance (Clarke, 2001; 2002). It is therefore not surprising that a perceived loss of beauty due to the normal aging process could increase BD and DE behaviours (Ferraro et al., 2008; Winterich, 2007). The physical signs of aging are more harshly judged in women than men, which further increases the aging woman's struggle to achieve and maintain cultural standards of physical attractiveness (Hurd, 2000; Chonody & Teater, 2016). For men in Western society, status is gained through intelligence, wealth, and power (Wilcox, 1997) not through appearance, illustrating that men and women are stereotyped differently (Ferraro et al., 2008). The impact of

socialization and cultural norms is well demonstratd by Ferraro and colleagues (2008), whereby older men and women rated body image and shape based on line-figure drawings. The older women of this study endorsed thinner line-figure drawings compared to the older men, whereby they saw them as more socially acceptable, thus confirming that body image remains a pervasive lifetime concern for women (Ferraro et al., 2008). In addition, older women were more concerned about their body shape than men and perceived their body image as "a little too big", whereas their male counterparts perceived their body image as "just the right size" (Ferraro et al., 2008). These results demonstrate that there is a strong impact from Western culture, which older women are susceptible to, that suggest that thinness is socially acceptable and attractive (Ferraro et al., 2008). Not only are women socially led to strive for a thin body, they are primed to continue to look young as they age (Chonody & Teater, 2016; Clarke 2001; 2002; Brown & Knight, 2015). Chonody and Teater's (2016) cross-sectional descriptive study exemplified that women have more social expectations and pressure to look young compared to their male counterparts, and they also have more fears about looking old, which greatly increased aging anxiety among the female participants. Although men do not appear to feel as much pressure from society regarding their appearance (Davison & McCabe, 2005), it should not be mistaken, men are not exempt from body image concerns (Murray & Lewis, 2014).

All women do not perceive their bodies in the same way as body image is not static, it changes in a developmental nature based on personal history, psychological and biological factors, attitudes and feelings toward body weight, and cultural and social norms (Hurd, 2000). Women's rating of appearance importance has been shown to decrease with age (Hurd, 2000; Slevec & Tiggemann, 2011), suggesting that older age may create a protective barrier against BD. In Hurd's (2000) qualitative study, which examined how behaviours and identities are

constructed and interpreted through social interactions, women aged 61-92 took part in semi-structured interviews to decipher how older women feel about their bodies. Sixty-eight percent of participants described an internalization of cultural norms regarding body image and expressed normative poor body image, using terms such as 'ugly', 'sagging', awful', and 'a disaster' to describe the typical older woman's body (Hurd, 2000). However, 82% of women "expressed pragmatism in terms of the loss of physical beauty" (Hurd, 2000) and described the aging process as natural. These women believed that their changes in appearance with age resulted outside of their control such that there was a counter-balance between their negative feelings and acceptance of the aging process (Hurd, 2000). The consideration of age in self-evaluations has allowed women to accept "their bodies in an 'imperfect' state" by recognizing that physical changes are to be expected and unavoidable (Liechty, 2012). A greater number of studies contradict findings by Hurd (2000) and Liechty (2012) and illustrate that older women do feel pressure to conform to cultural ideals of thinness and continue to present with BD as they age (Bedford & Johnson, 2006; Hurd Clarke & Bundon, 2009; Swami et al., 2010; Marshall et al., 2012; Brown & Knight, 2015; Hofmeier et al., 2017). In addition, Sabik (2013) noted that changes in the body associated with menopause may serve as a risk factor for BD and DE, and may also affect body perceptions in a new way for the aging woman.

Media. Even before the turn of the 21st century, mass media's influence on body image and eating was recognized in the literature (Wilcox, 1997, Levine, 2009). Women today continue to live in a society where they are inundated with sophisticated and targeted marketing, reminding them that aging is problematic, reinforcing how unforgiveable it is to show signs of aging (Levine, 2009; Brown & Knight, 2015) and that old age should be avoided (Wilcox, 1997). These messages become of particular concern for women categorized as "young-old" (65-75

years of age), as it is at this age where signs of aging become more pronounced and the correlation between youthfulness and attractiveness is stressed even more (Bedford & Johnson, 2006). Paralleling the wrong to show one's age, is the lack of older women in media images (Brown & Knight, 2015). With limited older women in main stream media, there is a misrepresentation of variety in women's physical appearance that can threaten the average woman's sense of body satisfaction and acceptance (Hofmeier et al., 2017). It is important to note that media are powerful information sources, which act to modify cultural beliefs and consumer behaviour through advertisements and celebrity endorsements (Lindner, 2004).

It is evident that print advertisements that promote social pressures to remain youthful and thin have increased since the 1960s (Brown & Knight, 2015). In a 50-year comparison of print advertisements between two popular Australian magazines, *The Australian Women's Weekly*, and *The Australian Vogue*, Brown and Knight (2015) sought to analyze the representation of older women in advertisements specific to appearance and aging. They divided their results into two sections representing two periods of social change from 1960-1989 and 1990-2010. During the first period, advertisements presented women as wives and mothers, emphasizing the responsibility for women to retain "...beautiful and perfect looking skin" (Brown & Knight, 2015). Advertisements acted as a voice of advice and focused their messages on control and effort (Brown & Knight, 2015). It was not until the early 2000s, when aging was presented as problematic and both magazines began to use the terms 'anti-aging' or 'age-defying' (Brown & Knight, 2015). Anti-aging products presented a solution to a fixable problem and their efficacy was often backed-up by linking them to science and medicine (Brown & Knight, 2015). Slevec and Tiggemann (2010) proposed that media act as sources of aging anxiety in this way by pressuring women to defy the natural aging process. Moreover, in the

1990s, visual ads became more vibrant and featured slim, youthful bodies as opposed to simply showing the face and shoulders present in the 1960s and 1970s ads (Kozar & Damhorst, 2009; Brown & Knight, 2015). The endorsement by celebrities, which became more prominent in the 1990s, encouraged consumers to feel more comfortable about trusting and purchasing a product (Brown & Knight, 2015). Finally, unique challenges have been created for older women given the fact that models in their 20s and 30s are often used in magazines to target women in their 40s and 50s (Bessenoff & Del Priore, 2007). These are not only un-relatable figures for women of this age group, but images are often re-touched with airbrushing, encouraging readers to strive for a body image that is not real or obtainable (Liechty, 2012). Print advertisements are increasing in magazines (Brown & Knight, 2015) and with the inclusion of texts stating that aging is problematic (Liechty, 2012; Brown & Knight, 2015), women are bombarded with the message that aging equates to failure, re-enforcing BD and appearance investment behaviours.

It is difficult for fashion magazine readers to remain unaffected by societal ideals because of how explicitly they are depicted (Tiggemann, 2005). However, it has been shown that magazine reading has an indirect effect on BD because it is moderated by the internalization of the thin ideal (Tiggemann, 2005; Slevec & Tiggemann, 2011). On the contrary, television watching has been shown to have a direct effect on BD among older women (Tiggemann, 2005; Hefner et al., 2014). The reasons for this may be due to an underrepresentation of older women in print advertisements and relevant age-appropriate actors on television (Slevec & Tiggemann, 2011; Hofmeier et al., 2017). Although age-appropriate, the women depicted in television shows are more often than not, those with ultra-thin bodies that resemble more closely their younger counterparts than the average woman, sending the message that thin is what is achievable and expected, further promoting the fear of aging (Slevec & Tiggemann, 2011). The majority (60%)

of middle-aged women (35-55 years of age) in Slevec and Tiggemann's (2011) study, reported wanting to look like Jennifer Aniston, Angelina Jolie, or Elizabeth Hurley when asked the question: "If you could look like anyone who would it be?" Rationale for selecting these actresses were almost solely (95%) based on their attractive appearance (slim, beautiful hair, gorgeous figure, natural beauty, and looking good for her age). This response creates concern as these are role models who are made up for television and movies using stylists, makeup artists, film editing, etc. In contrast, older women are also commonly depicted on television with health problems, as less attractive, or retired (Rodgers, Paxton, McLean, & Damiano, 2016; Hofmeier et al., 2017). These misrepresentations of middle-aged and older women in film and television may lend to self-criticism and negative feelings about body image amongst the general population.

Another important subsection of television is the increase in reality makeover shows geared toward middle-aged women. Two programs were discussed in the literature, *The Biggest Loser* and *Extreme Makeover*, which present average people achieving their "perfect" face and body through strict dietary and exercise regimes and/or intense cosmetic surgery (Slevec & Tiggemann, 2011). This type of programming allows women to believe that being average is something that you can and should improve upon, and that such transformations will result in a "better you" (Banet-Weiser & Portwood-Stacer, 2006). Even if women are able to see through the unrealistic portrayal of women in magazines and on screen, they may have a difficult time disregarding the messages that makeover shows present, as regular people are the focus. In fact, television exposure was shown to have a direct effect on cosmetic surgery attitudes of middle-aged women, (Slevec & Tiggemann, 2010).

The traditional forms of media mentioned above are viewed in a passive nature by

consumers; however, social networking sites (SNS) on the contrary, are viewed by users in an active way, whereby they decide how they want to 'participate' (Holland & Tiggemann, 2016). Active participation includes searching for people or groups of interest, sharing photos/videos as well as general information about oneself (Holland & Tiggemann, 2016). This becomes important when considering 'new' forms of media and how this interaction may shape body image perceptions by its users. Therefore, it is important to understand that SNS allow for appearance-based social comparison on an unprecedented scale, different to anything seen in traditional media forms (Stronge et al., 2015). For example, as Facebook® is widely available for use on a global scale, the opportunity for relevant, age-appropriate social comparisons could change the way in which BD is experienced by users of all ages (Stronge et al., 2015). However, having noted that, research regarding SNS and their effects on body image and satisfaction is scarce and to date, rarely focuses on older women. One study conducted by Stronge et al. (2015) aimed to evaluate reported BD among New Zealanders (based on a national probability sample) across age cohorts in the face of an increasingly media saturated environment and the rise of social media use. The researchers tested cross-sectional links between being a Facebook® user and body satisfaction for both men and women and discovered that Facebook® users, regardless of gender, reported significantly lower body satisfaction than non-users based on curvilinear effects using a Bayesian regression model (Stronge, et al., 2015). Of particular interest however, was the U-shaped curvilinear relationship noted between age and body satisfaction for women, illustrating that the gap between users and non-users was exacerbated among middle-aged women. These findings raise concern as they suggest that middle-aged women may be less satisfied with their body image compared to other age cohorts for two reasons: 1) they are more likely to compare themselves with others on Facebook® and; 2) they are less likely to meet

societal standards for appearance ideals than younger women, which could then increase the number of older women struggling with BD in the future (Stronge, et al., 2015). These findings also suggest that age, which has previously been considered to have a protective effect on body satisfaction (Hurd, 2000), may in fact be 'interrupted' by being a Facebook® user and that SNS may be a forum for increased social comparison and potential cause of changes in BD among users of increasing age (Stronge et al., 2015).

Ethnicity. In a review by Marshall et al. (2012) it was identified that in general, Caucasian women express more negative views regarding body image, greater BD, place a higher value on thinness, and display greater dieting behaviours than women of other ethnic backgrounds. This was consistent with findings from an international study from ten world regions which identified differences in BD across all regions, with greater BD among women from the Americas; however, there was a negligible difference observed in body weight ideals (Swami et al., 2010). Sabik and Cole (2017) also observed no difference in weight satisfaction among their European American and African American participants 65 years and older; however, African American women reported higher average satisfaction on measures of physical appearance, cosmetic features, and physical function. It is postulated that the variations by ethnicity in BD may soon diminish as 'new' media reaches all ends of the globe. In fact, relatively recent research illustrates that cosmetic surgical procedures are becoming increasingly more popular among women of colour, exemplifying that Western standards can translate to different cultures (Slevec & Tiggemann, 2010). In addition, according to the American Society of Plastic Surgeons (2008), eye reshaping was the second most common procedure among Asian American women, and breast augmentation was also popular among all ethnic groups.

Level of Education and Socioeconomic Status. Research on level of education and food choices suggest that women with greater educational attainment perceive a greater sense of control over their food choices and better quality diets (Barker et al., 2009). Barker and colleagues (2009) also illustrated a connection between SES and level of education. The women in this study who identified as having a lower educational level (based on government recommendations) as well as lower income, felt as though financial constraints decreased the control and choice they had in what they fed themselves and their families. On the other hand, those women with higher educational attainment and fewer financial constraints appeared to have more support from their partners in terms of balanced meals and greater access to personal resources to accomplish healthy eating behaviours (Barker et al., 2009). There is; however, research that supports an increase in BD and weight preoccupation with higher levels of education and income (Barker et al., 2009; Swami et al., 2010). In Swami et al.'s (2010) study, participants in Britain and Malaysia with higher SES were found to idealize slim women with a normal to low BMI, and participants from rural Malaysia with low SES rated women with a BMI of 23-24 as most attractive. Socioeconomic status; however, may impact different areas of body image satisfaction and associated behaviours as Gadalla (2008) did not identify any association between DE attitudes and women's income.

Cohort Differences. Some have theorized that the inconsistency within the literature with respect to body image can be attributed to a cohort effect (Hurd, 2000; Lewis & Cachelin, 2001). Small-scale cohort differences have been studied to investigate the effects that society's changing appearance ideal has on body image and body satisfaction among generations of women (Lewis & Cachelin, 2001). There have been a couple studies which posit that cohorts may be most strongly influenced by standards that existed when the participants were young

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adults as well as the historical context of their upbringing (McKinley, 2006; Hurd, 2000). For example, McKinley's (2006) longitudinal analysis which examined the cohort differences of body experience in 74 middle-aged women (50-68 years of age) and 72 young women (27-30 years of age). Study results demonstrated that young women have stronger relationships between self-acceptance as well as positive relations with others and body esteem compared to middle-aged participants (McKinley, 2006). The researcher attributed the differences in appearance importance to the backlash against the women's movement in the 1970s that the middle-aged women grew up with (McKinley, 2006). The women in Hurd's (2000) study also demonstrated a cohort effect whereby the women were holding on to the beauty ideals that were the norm at the time they were younger. This qualitative study evaluated the perceptions and feelings of women's aging bodies, whereby they rejected the culturally constructed beauty ideals that women needed to be thin and toned. Interestingly, like their younger counterparts (women between the ages of 61 and 92), expressed negative feelings regarding their weight (Hurd, 2000). These findings may represent a cohort difference in terms of an 'ideal' figure type; however, regardless of being young or old, a body ideal was still followed and the pursuit to look a certain way was still sought. This suggests that a retrospective understanding of the data from this age group is necessary to better comprehend how older women experience body image (Bedford & Johnson, 2006).

Research evaluating cohort differences is limited on this topic as much of the research is cross-sectional, which does not allow for identification on how body experience changes over time and which variables predict later behaviour. In addition, it is hard to note if any differences are related to age differences or a cohort effect (McKinley, 2006; Lewis & Cachelin, 2001).

Gender Specific Body Image Constructs

Men and women view their bodies in different ways and develop different body image constructs throughout their lives. Negative constructs as well as gender role conflict (GRC) (particularly for men), can result in varying age-related concerns and BD (Halliwell & Dittmar, 2003; Davison & McCabe, 2005; Murray & Lewis, 2014; Chonody & Teater, 2016). From the literature, it is evident that both gender and age are factors that affect how one feels about themselves (Halliwell & Dittmar, 2003; Davison & McCabe, 2005; Murray & Lewis, 2014; Chonody & Teater, 2016; de Souto Barreto et al., 2011).

Gender and Body Image. Consistently within the literature it has been reported that women have a lower level of body image satisfaction than men (Davison & McCabe, 2005; Halliwell & Dittmar, 2003; de Souto Barreto et al., 2011) and greater anxiety related to aging (Chonody & Teater, 2016; Davison & McCabe, 2005). Women and men however, conceptualize their bodies differently. Women have been known to compartmentalize and focus on site-specific aspects of their bodies which has been associated with greater body-focused negativity, whereas men tend to view their bodies as one entity, thus reducing body-focused negativity (Halliwell & Dittmar, 2003; Marshall, 2014). These different ways in which men and women view their bodies may explain why women are more likely to engage in negative health-related behaviours such as tanning, cosmetic surgery, and dieting (Halliwell & Dittmar, 2003) and men in excessive exercise and steroid use (Murray & Lewis, 2016). Women have shown they place greater importance on how they look compared to men, and men tend to stress the importance of their body's ability (Halliwell & Dittmar, 2003). The 'double standard of aging' is supported in Halliwell and Dittmar's (2003) research, suggesting that aging can have attractiveness-enhancing aspects for men as they noted men to be indifferent with their appearance and were welcoming of

the aging process. Likewise, the older women in Ferraro et al.'s (2008) study were significantly more concerned with their bodies relative to older men and this same age group reported spending significantly more time thinking about their body shape and endorsed a thinner body shape compared to their male counterparts.

These "body ability" and "body image" constructs for men and women may also develop via adherence to gender roles. According to Murray and Lewis (2014), women typically wish to be thinner overall, and men strive for a v-shaped body (narrow waist and well-developed chest, shoulders, and arms). Just as the body ideal for women is consistently getting thinner, masculine appearance ideals for men are becoming increasingly muscular and lean (Murray & Lewis, 2014). GRC can develop by either adhering or failing to adhere to masculine or feminine gender roles and Murray and Lewis (2014) have identified that higher levels of GRC are related to BD in men.

It can easily be argued that socialization plays a critical role in how males and females create body image ideals and as evidenced by the literature, neither gender is without pressure to conform to societal ideals. Just as there are differences in what is expected from each gender (i.e., retaining a youthful appearance for women and physical capabilities for men), age is also a determining factor in body image satisfaction for both men and women.

Age and Body Image. It is not surprising that age-related concerns with body image discussed in the literature directly coincide with the gender specific concerns previously mentioned. Functionality is an important component for men's body satisfaction (de Souto Barreto et al., 2011). Murray and Lewis (2014) determined that younger men (17-29 years of age) of their all male study that evaluated body satisfaction by age, had significantly higher levels of muscle dissatisfaction than both middle-aged (30-49 years of age) and older (50-71 years of age)

participants. Overall, body fat dissatisfaction increased with age, as well, middle-aged and older men who adhered to traditional gender roles were more vulnerable to increased muscle and fat dissatisfaction (Murray & Lewis, 2014). Similarly, the men of Halliwell and Dittmar's (2003) study saw aging as being detrimental to one's ability and functioning with main concerns being stamina, weakness, and decreased endurance. It is also interesting to note that the younger men of Halliwell and Dittmar's (2003) study conceptualized their bodies differently than their older male counterparts, more so in the differentiated way in which women did, placing greater emphasis on specific body parts. The researchers also suggested this be influenced by an increase in sociocultural emphasis on appearance for younger men which may potentially decrease gender differences in body satisfaction in the future and contribute to a rise in body image and appearance concerns for males (Halliwell & Dittmar, 2003). The narrowing in the gap between gender and appearance concerns was proven in a recent publication by Chonody & Teater (2016) who observed no difference by sex when participants were asked to consider if they would have a cosmetic procedure one day. Results were significant for both male and female participants (Chonody & Teater, 2016).

For many women, regardless of age, the emphasis on appearance remains a crucial component of their body satisfaction. It is important to recognize that much of the research that has deemed older age as a protective factor against BD (Hurd, 2000; Liechty, 2012), relates to participants being less concerned of how others view them and not that they are ultimately content with how they look (Davison & McCabe, 2005). For example, both men and women 50 years and older from Davison and McCabe's (2005) study tended to make negative evaluations of their appearance similar to their younger counterparts; however, they reported less concern for how they were evaluated by others. For women of de Souto Barreto et al.'s (2011) study, age

was not related to the level of satisfaction with body appearance, a finding which parallels previous findings by Grippo and Hill (2008), indicating that women continue to evaluate themselves based on "internalization of ageist beauty norms, which emphasize the physical [aesthetic] aspect of the body". Comparatively, for men of de Souto Barreto et al.'s (2011) study, age was a predictor of appearance satisfaction and a higher age corresponded to decreased levels of satisfaction. Therefore, it can be said that with increasing age, body satisfaction will remain the same (either positive, neutral or negative) for women and potentially get worse for men.

Nutrition and Health Implications of BD

It is well understood that food choices affect nutritional status and overall health (Marshall et al., 2012). Nutritional adequacy is known to play a significant role in successful aging and improve disease outcomes (Finn, 2000), and a restriction of food(s) or particular food groups through dieting could result in nutrient deficiencies or a low BMI. Nutrient deficiencies may be even more problematic among BBW who might already be at risk for malnutrition (Allaz et al., 1998). As well, it is now understood that a low BMI among older adults could present as a risk factor associated with an increase in morbidity and mortality (Allaz et al., 1998). Therefore, middle-aged women may negatively impede healthy aging and older women may be negatively impacting overall quality of life through dieting or DE practices (Allaz et al., 1998; Marshall et al., 2012).

Theoretical Framework

Objectification theory has been used to guide the research for this study and better understand the deep-rooted factors associated with BD among BBW residing in a MB setting. Objectification theory presents a framework for understanding the psychological consequences that stem from objectifying treatment. Ethnicity, social class, sexuality, and age, among other

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attributes, create unique experiences by which women experience and respond to sexual objectification; however, it has been proposed that being a mature female creates a shared social experience and vulnerability to sexual objectification (Fredrickson & Roberts, 1997). At a psychological level, objectification theory posits that girls and women will treat themselves as objects to be looked at and evaluated based on cultural socialization (Fredrickson & Roberts, 1997). Canadian girls and women live in a culture which emphasizes beauty and continuously objectifies them, resulting in women taking on an observer's perspective of their bodies and treating themselves like objects. The psychological consequences of such thoughts and behaviours include BD, body shame, and DE (Grippo & Hill, 2008).

CHAPTER 3

METHODOLOGY

Study Design

Participants. A total of 1248 BBW (individuals born between 1946 and 1965) from both rural

and urban MB agreed to participate in this study. A total of four strata of BBW from MB are

represented: 1) Young Baby Boomer Women (YBBW) (born between 1956-1965) from rural

areas, 2) Older Baby Boomer Women (OBBW) (born between 1946-1955) from rural areas, 3)

OBBW from urban areas, 4) YBBW from urban areas. We aimed for 900 respondents (225

women from each of the above strata) with an anticipated non-response rate of 25%; therefore,

we strived to recruit 1125 participants. The sample size determination to assure reasonable

precision of estimates of proportions is based on the magnitude of the prevalence, the level of

significance (Type 1 error), and an acceptable interval of precision. A 95% confidence interval

for a proportion, "p", is given by $\pm 1.96 * \sqrt{(p*(1-p)/n))}$. To achieve a reasonable width of each

side of a confidence interval, ranging from 3% to 6%, a sample size of 225 persons for each

group is suitable for a prevalence ranging from 5% through to 50%, in units of 5%.

Prevalence based on a sample of 225 persons	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
Width of each side of a 95% confidence interval	0.028	0.039	0.047	0.052	0.056	0.060	0.062	0.064	0.065	0.065

Recruitment Procedures. Participants were recruited into the study if they were BBW residing

in rural or urban MB using a variety of techniques. All recruited participants were contacted via

phone or email by the researchers prior to the release of the online survey describing the study,

details about the process, and to allow for an opportunity to ask any questions. Prairie Research

Associates (PRA), a client-focused research company located in Winnipeg, MB, phoned

households from their database while following a recruitment script (Appendix A) prepared by

our research team. This script included details about participant eligibility and study protocol. During the phone calls, participants were able to ask questions and decide whether they wanted to participate. If they agreed, they provided the recruiter with their contact information (email address or phone number, if an email was not available) for future survey distribution and communications. Additional recruitment efforts were also made by Lengyel's Research Team made up of: the researchers, the Manitoba Women's Institute, Agape Table, and University College of the North. Recruitment efforts via word of mouth, phone calls, email communications, SNS (e.g., Facebook®), and recruitment poster (Appendix B) distribution to a variety of environments and organizations (e.g., community/recreation centers, retirement communities, grocery stores, and university campuses) were recruited. Recruitment breakdown: PRA recruitment by phone= 700, PRA recruitment from current panelists= 381, Lengyel's Research Team recruitment (online)= 159, Lengyel's Research Team recruitment (paper)= 8.

Survey Design and Development. Data was collected using the "Body Image and Food Choice Survey" (Appendix C). In its original form, the survey contained 24 questions about perceptions of body image, weight, and select questions on food choices. Using the findings from Marshall's (2014) study and additional information from a thorough literature search, this survey was revised and developed further. More questions were added to address food choice selections as well as media influence on body image satisfaction. The final survey contained a combination of 46 multiple-choice (MC), open-ended, and visual analog scale (VAS) questions, which aimed to investigate demographic information; self-rated body satisfaction and health; eating habits; body work practices; aging concerns; associations and predictors of BD; food choices; and opinions on access to community nutrition services for BBW in MB. Any additions or modifications to the

previous questionnaire by the research team were done only after consulting the previous literature in this area.

Upon amendment of the survey, trial testing was once again completed by professional experts in the field. Close attention was made to the way in which demographic information was asked, particularly to ethnic background. Greater attention was made to include more questions relating to media influences on personal appearance as we have speculated to see a narrowing in the gap between urban and rural participants' feelings and attitudes toward body satisfaction due to the ubiquitous nature of advertisements and marketing of youthful beauty ideals (Hofmeier et al., 2017; Rodgers et al., 2016; Brown & Knight, 2015; Bedford & Johnson, 2006; Marshall et al., 2012). Finally, sensitivity was executed with respect to questions pertaining to body work practices to invoke truthful, non-judgmental responses from participants. PRA assisted with edits to the revised survey. The online survey was pretested numerous times by BBW, University of Manitoba nutrition faculty members and students, PRA, and research staff to assess understandability, flow, and online usability. The feedback obtained from the pretests was valuable and enabled the researchers to improve the questionnaire's readability, clarity, and format prior to releasing it online to participants.

Data Collection Procedures. The survey was completed by participants using FluidSurveys^{TM}, a secure, online survey administration and data collection service with servers located in Canada. Most participants (n= 1075) accessed the survey via FluidSurveys^{TM}; however, a few participants (n= 8) answered and returned a mail-out survey, as not everyone has access to a computer or perhaps feels comfortable using one. The survey was launched in November 2015 and participants were allowed two weeks to complete it and were reminded by email of the closing date one week following its launch. Only individuals who were recruited were able to access the

online survey (i.e., it had to be sent from PRA and could not be forwarded). Mail-out surveys were sent by the Principal Investigator. All participants were required to provide consent (Appendix D). For participants using the online website, they were automatically guided to a consent form in which they were able to agree or not agree to the conditions of the study. When consent was granted, participants had online access to the survey. For the mail-out surveys, all participants were instructed to complete and sign a consent form which was returned in a separate envelope from the survey to allow for participant anonymity. The survey took approximately 25 minutes to complete and anyone who completed it was entered for one of twenty-five draws for a Visa® gift card in denominations ranging from $25 -$100 each. In addition, all participants were entered for an early bird prize (iPad mini worth approximately $400) as incentive to complete the survey within the first week of its release online and provisions were made for participants filling out paper copies such that they met the deadline for mailing in their surveys.

Data Entry and Cleaning. Online survey data was received from PRA in a Statistical Package for Social Sciences (SPSS) document. Data cleaning as well as manual entry of mail-out survey responses was completed by the research team. N Hawrylyshen verified manually entered data and measured VAS responses of mail-out surveys to the millimeter (mm) using a standard ruler and entered data into SPSS. All "other" responses to MC questions were reviewed and when required participant responses were recoded. For example, when asked *"What is your current relationship status?"* a participant who wrote "divorced" following their selection of "other" was recoded to survey response "divorced". Similar cleaning was completed for responses to the question, *"In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?"* Participants were able to respond "yes", "no" or

"don't know" and provide examples for the "yes" or "no" responses. Due to the design of this question, there were participants who answered "no" but in the follow up section wrote "I don't know" in order to provide suggestions for community services that were needed. In these situations, survey answers were recoded to "I don't know" to ensure response accuracy.

Data Analysis

Study Variables. A table of recoded and new variables can be found in Appendix E. For simplicity of variable explanation, three overarching groups were used to summarize the variables used throughout this thesis.

1. **Sociodemographic variables:** age, age category, location of residence, ethnic background, number of persons one lives with, household income, level of education, and relationship status.

2. **Environmental variables:** media pressure on appearance, appearance pressure from others, from whom does one feel pressure, and media influence on food choices.

3. **Health and behaviour-related variables:** cigarette smoking status, self-rated health; desired weight change; type of desired weight change; body weight satisfaction; overall appearance satisfaction; impact of aging on appearance; appearance anxiety; appearance preoccupation; use of anti-aging products; dieting behaviour; consumption of either local, organic or functional foods; consumption of foods or supplements to aid in weight loss; average appearance stress; importance of overall appearance; healthfulness of diet; importance of nutrition to healthy aging; importance of availability of current information about food choices to body image; importance of current food and drink consumption to body image; importance of current food and drink consumption to overall appearance; importance of physical activity (PA) to overall appearance and body image; importance

of body work practices to self-esteem; and availability of nutrition services and resources about food choices and body image for women.

Body satisfaction. Body satisfaction was measured by the following two questions: How satisfied are you with your current body weight?; and How satisfied are you with your overall appearance? Measurement agreement analysis with body weight satisfaction and overall appearance satisfaction produced a low Kappa value (0.296), illustrating the variables were not in agreement thus, warranting further analysis with the variables separately. A cut off of 0.6 was used to assess agreement (Raghavendra & Antony, 2011). Body satisfaction was originally asked on a 5 point Likert scale, which was collapsed into three levels for inferential statistical analysis. The three levels of body satisfaction were: *satisfied* which included responses "very satisfied" and "moderately satisfied", *neutral*, and *dissatisfied* which included responses "moderately dissatisfied" and "very dissatisfied".

Desired weight change (DWC). This scaled variable represents the weight in pounds (lbs) that participants either wanted to gain or lose and was created evaluating the difference between participants' self-reported weight [in lbs or kilograms (kg)] and ideal body weight (in lbs or kg). A negative value represented a desired weight gain (n= 27), a zero-value represented a desire to maintain one's current weight (n= 72), and a positive value represented a desired weight loss (n= 981). Following preliminary analysis, the research team decided to remove three outlier responses to this question for analysis due to: the assumption of incorrect unit of measure selected by a participant (kg instead of lbs), reporting a DWC of 100% of current body weight, or estimating their weight as 0lbs. This variable was used in the multinomial logistic regression models as its distribution did not follow a curvilinear linear distribution as would be expected with this type of variable, but rather a linear pattern in the negative direction was depicted

(Appendix F), illustrating the overwhelming number of participants desiring to lose weight. If this data followed the expected curvilinear relationship when fitting a line to the data, then a multinomial logistic regression model as used in our analysis would not have been appropriate, but rather a quadradic term for the model would be required.

Analysis Techniques. Both descriptive and inferential statistical analyses were conducted using SPSS version 24.0 for Windows (IBM Corporation, 2016).

Descriptive statistics. Frequencies, percentages, means, and standard deviations were completed for: all participants, participants split by age category (OBBW and YBBW), participants split by location of residence (rural and urban residents), as well as OBBW and YBBW living in rural and urban areas. Figures (bar charts, stacked bar charts) and organization of open-ended responses were computed using Microsoft Word and Microsoft Excel. Raw data tables and figures can be found in Appendices G-J.

VAS questions were measured on a 100-mm scale and divided into four quartiles anchored by their specific scale responses (i.e., Never Stressed – Very Stressed, Not Important – Very Important, or Not Healthy – Very Healthy). Measurements were completed via computer for online surveys or manually using a standard ruler for paper copies. Means and standard deviations were calculated.

Thematic analysis, the process for identifying, analyzing, and reporting patterns (themes) within data (Braun & Clarke, 2006) was used to code open-ended survey questions. Thematic analysis was manually completed by N Hawrylyshen with the exception of responses to availability of community nutrition services and resources, which was coded by another member of the research team. The process of thematic analysis described by Braun and Clarke (2006) was used to guide this process. Themes capture important pieces of data in relation to research

questions and are considered a patterned response within the dataset (Braun & Clarke, 2006). An inductive, data-driven approach to creating themes was taken, whereby themes that naturally emerged from the data were written out, categories were created and collapsed until all participant responses fit. When responses were unclear, had the potential for misinterpretation, or did not fit a category, they were placed in the category "other".

Inferential statistics. Chi-square tests were used to determine separate associations between the categorical body satisfaction variables with other categorical variables (Tables 4.5 and 4.6). For chi-square analyses, original variable categories were collapsed if necessary to meet the assumption that all expected cell counts were $\geq$5. Where the category "other" was present, it was excluded from chi-square analyses as the previous assumption was violated. Similarly, for survey questions which reflected frequency of food choices or frequency of use of anti-aging products, the category "not sure" was also excluded as the interpretation of this category was not clear; therefore, we could not make inferences about this response. Independent Samples t-tests and ANOVAs were used to compare means and significance was considered at $p \leq 0.05$ (two-sided). Tukey and Games-Howell post-hoc tests confirmed differences following ANOVA. Multinomial logistic regression models were used to predict body weight satisfaction and overall appearance satisfaction. The satisfaction categories: *Satisfied* and *Neutral* are in reference to *Dissatisfied*. Odds ratios (OR) were calculated with 95% confidence intervals (CI) and significance determined at $p \leq 0.05$ (two-sided).

Ethics

Ethical approval to conduct this study was received from the University of Manitoba Joint-Faculty Research Ethics Board (Protocol #J2015:040) (Appendix K).

CHAPTER 4

BODY IMAGE PERCEPTIONS, WEIGHT ATTITUDES, AND AGING CONCERNS OF BABY BOOMER WOMEN IN MANITOBA

Introduction

Canada is characterized by an aging population largely due to increasing life expectancy, the movement of the baby boomer cohort through to later life (over 50 years), and lower fertility rates (Statistics Canada 2016b). Given the greater longevity of women than men, the impact of aging can differ for women in their needs and experiences in areas such as health care and social support (Statistics Canada, 2016b). Unfortunately, in Western society, aging is associated with unwelcomed changes in physical appearance such as wrinkles, greying hair, weight gain, changes related to menopause, and decline in functional capability (Hofmeier et al., 2017). These changes coupled with negative stereotypes of aging portray middle and old age as periods of decline (Hofmeier et al., 2017). Conversely, societal pressures, which place enormous emphasis on women to be thin and youthful, and defy the aging process creates a discrepancy between women's current and ideal self, also known as BD (Bedford & Johnson, 2006). Women who struggle with BD are more likely to be at risk for unhealthy eating behaviours such as DE (restricting certain foods or entire food groups), or EDs (Ferraro et al., 2008; Winterich, 2007; Myers & Crowther, 2007). These eating behaviours are often coupled with psychological implications such as depression, anxiety, poor self-esteem, social isolation, and overall reduced quality of life (Lewis & Cachelin, 2011; Lietchy, 2012; Marshall et al., 2012). What women think and feel about their bodies (i.e., their body image) is complex and involves internal and external influences that come about based on cultural and societal effects, as well as familial and media messages (Hurd, 2000; Rodgers et al., 2016).

The understanding we have of women's body image in relation to the aging process is limited (Peat et al., 2008) and much of the existing literature has focused on younger female samples (Grippo & Hill, 2008; Hurd, 2000; Marshall et al., 2012; Cash & Henry, 1995). What we do know is that BBW have a heightened preoccupation with maintaining health and youthfulness (Biggs et al., 2007) as aging is often stigmatized and women are being inundated with sophisticated, targeted marketing to defy the aging process (Marshall et al., 2012; Levine, 2009). Additionally, even though the discrepancy between the thin ideal and the Canadian population continues to grow (Marshall et al., 2012; Statistics Canada, 2018), middle-aged and older women are presenting with EDs as well as DE (Mangweth-Matzek, 2006) and the incidence of EDs is increasing in women 45 and older (Eating Disorders Review, 2017). Media pressure is one of the most significant predictors of BD regardless of age and the mass media contributes to risk factors that increase the probability of falling along the ED spectrum (Marshall et al., 2012; Levine, 2009; Bedford & Johnson, 2006). The small and sometimes contradictory body of literature evaluating body satisfaction of older women justifies further research.

The research objective of this study was to examine body image satisfaction, weight attitudes, and aging concerns of BBW residing in rural and urban Manitoban communities.

Methods

Study Design

Participants. A total of 1248 BBW from both rural and urban MB agreed to participate in this study and 1083 completed the "Body Image and Food Choice Survey" (n=1075, online; n=8, mail-out), equating to a completion rate of 86.6%. A total of four strata of BBW from MB are represented in this study: 1) YBBW from rural areas, 2) OBBW from rural areas, 3) YBBW from

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urban areas, 4) OBBW from urban areas of MB. We aimed for 900 respondents (225 women from each of the above strata) with an anticipated non-response rate of 25%; therefore, we strived to recruit 1125 participants.

Recruitment Procedures. A variety of techniques were used to recruit BBW from rural and urban areas of the province. All recruited participants were contacted via phone or email prior to the release of the online survey describing the study, details about the process, and to allow for an opportunity to ask any questions. PRA, a client-focused research company located in Winnipeg, MB, phoned households from their database while following a recruitment script prepared by our research team. This script included details about participant eligibility and the study protocol. During the phone calls, participants were able to ask questions and decide whether they wanted to participate in the study. If they agreed, they provided the recruiter with their contact information (email address or phone number if an email was not available) for future survey distribution and communications. Additional recruitment efforts were also made by Lengyel's Research Team made up by: the researchers, the Manitoba Women's Institute, Agape Table, and University College of the North. Recruitment efforts via word of mouth, phone calls, email communications, SNS (e.g., Facebook®), and recruitment poster distribution to a variety of environments and organizations (e.g., community/recreation centers, retirement communities, grocery stores, and university campuses).

Survey Design and Development. The survey used in this study was adapted from Marshall (2014) and contained a combination of 46 MC, open-ended, and VAS questions, which aimed to investigate demographic information; self-rated body satisfaction and health; eating habits; body work practices; aging concerns; associations and predictors of BD; food choices; and access to community health and nutrition services for BBW residing in MB.

This variation of the survey included more questions relating to media influences on personal appearance as we have speculated to see a narrowing in the gap between urban and rural participants' feelings and attitudes toward body satisfaction due to the ubiquitous nature of advertisements and marketing of youthful beauty ideals (Hofmeier et al., 2017; Rodgers et al., 2016; Brown & Knight, 2015, Bedford & Johnson, 2006; Marshall et al., 2012). PRA assisted with edits to the revised survey and the online survey was pretested numerous times by BBW University of Manitoba nutrition faculty members and students, PRA, and research staff to assess understandability, flow, and online usability.

Data Collection Procedures. The survey was completed by participants using FluidSurveys™, a secure, online survey administration and data collection service with servers located in Canada. Most participants accessed the online survey, and some returned a mail-out survey. The survey was launched in November 2015 and participants were allowed two weeks to complete the survey and were reminded by email of the closing date seven days prior to its close. Only individuals who were recruited were able to access the online survey. All participants were required to provide consent. For participants using the online website, they were automatically guided to a consent form in which they were able to agree or not agree to the conditions of the study. When consent was granted, participants had online access to the survey. For the mail-out surveys, all participants were instructed to complete and sign a consent form which was returned in a separate envelope from the survey to allow for participant anonymity. The survey took approximately 25 minutes to complete and anyone who completed it was entered to win one of twenty-five Visa® gift cards and/or the early bird prize, an iPad mini as incentive for completing the survey within the first week.

Data Entry and Cleaning. Online survey data was received from PRA. Data cleaning as well as manual entry of mail-out survey responses was completed by the research team. N Hawrylyshen manually verified entered data and measured VAS responses (to the mm) of mail-out surveys and entered the data. All "other" responses to MC questions were reviewed and when required, participant responses were recoded. For example, when asked *"What is your current relationship status?"* a participant who wrote "divorced" following their selection of "other" was recoded to survey response "divorced".

Data Analysis

Study Variables. Three overarching groups were used to summarize the variables used:

1. **Sociodemographic variables:** age, age category, location of residence, ethnic background, number of persons one lives with, household income, level of education, and relationship status.

2. **Environmental variables:** media pressure on appearance, appearance pressure from others, from whom does one feel pressure, and media influence on food choices.

3. **Health and behaviour-related variables:** cigarette smoking status, self-rated health; desired weight change; type of desired weight change; body weight satisfaction; overall appearance satisfaction; impact of aging on appearance; appearance anxiety; appearance preoccupation; use of anti-aging products; dieting behaviour; consumption of either local, organic or functional foods; consumption of foods or supplements to aid in weight loss; average appearance stress; importance of overall appearance; healthfulness of diet; importance of nutrition to healthy aging; importance of availability of current information about food choices to body image; importance of current food and drink consumption to body image; importance of current food and drink consumption to overall appearance;

importance of PA to overall appearance and body image; importance of body work

practices to self-esteem; and availability of nutrition services and resources about food

choices and body image for women.

Body satisfaction. Body satisfaction was measured by the following two questions:

(1) How satisfied are you with your current body weight?; (2) How satisfied are you with your

overall appearance? Response options for both questions included: *satisfied, neutral,* and

dissatisfied. Measurement agreement analysis with the two body satisfaction variables (body

weight satisfaction and overall appearance satisfaction) produced a low Kappa value (0.296),

illustrating the variables were not in agreement thus, warranting further analysis with the

variables separately. A cut off of 0.6 was used to assess agreement (Raghavendra & Antony,

2011).

Desired weight change (DWC). This scaled variable represents the weight in lbs that

participants either wanted to gain or lose and was created evaluating the difference between

participants' self-reported weight (lbs or kg) and ideal body weight (lbs or kg).

Analysis Techniques. Both descriptive and inferential statistical analyses were conducted using

SPSS version 24.0 for Windows (IBM Corporation, 2016).

Descriptive statistics. Frequencies, percentages, means, and standard deviations were

conducted for: all participants, participants split by age category (OBBW and YBBW),

participants split by location of residence (rural and urban residents), and OBBW and YBBW

living in rural and urban areas.

VAS questions were measured on a 100-mm scale and divided into four quartiles

anchored by their specific scale responses (i.e., Never Stressed – Very Stressed, Not Important –

Very Important, or Not Healthy – Very Healthy). Measurements were completed via computer

for online surveys or manually using a standard ruler for paper copies. Means and standard deviations were calculated.

Thematic analysis, the process for identifying, analyzing, and reporting patterns (themes) within data (Braun & Clarke, 2006) was used to guide coding of the open-ended survey questions. Canada's Food Guide (Health Canada, 2018) was used to fit participant responses into the themes "dairy" and "meat" when coding specific foods restricted by participants.

Inferential statistics. Body satisfaction was originally asked on a 5 point Likert scale, which was collapsed into three levels for statistical analysis. The three levels of body satisfaction were: *satisfied* which included either "very satisfied" or "moderately satisfied", *neutral*, and *dissatisfied* which included either "moderately dissatisfied" or "very dissatisfied". Chi-square tests were used to determine separate associations between the categorical body satisfaction variables with other categorical variables. For chi-square analyses, original variable categories were collapsed if necessary to meet the assumption that all expected cell counts were ≥ 5. Where the category "other" was present, it was excluded from chi-square analyses as the previous assumption was violated. Similarly, for frequency of use of anti-aging products, the category "not sure" was also excluded, as the interpretation of this category was not clear; therefore, we could not make inferences about these responses. Independent Samples t-tests and ANOVAs were used to compare means and significance was considered at $p \leq 0.05$ (two-sided). Tukey and Games-Howell post-hoc tests confirmed differences following ANOVA. Backwards multinomial logistic regression models were used to predict body weight satisfaction and overall appearance satisfaction. The satisfaction categories: *Satisfied* and *Neutral* are in reference to *Dissatisfied*. OR were calculated with 95% CI and significance determined at $p \leq 0.05$ (two-sided).

Ethics

Ethical approval to conduct this study was received from the University of Manitoba Joint-Faculty Research Ethics Board (Protocol #J2015:040).

Results

Participant Characteristics

Tables 4.0 and 4.1 summarize demographic information from study participants. Sixty-two percent of participants resided in urban (Winnipeg) and 37.6% in rural MB. Older and younger BBW represented 50.5% and 49.5% of the sample, respectively with a mean age of $60 \pm$ 5.3 years at the time of data collection. The majority (66.2%) of participants were married and 73.9% identified their ethnic background as North American with 4.1% whom identified as Aboriginal or Indigenous. Approximately half (51.7%) of OBBW lived with one other person and only 9.7% lived with 3 or more people, compared to 39.6% of YBBW who lived with one other person and 37.1% who lived with 3 or more people. Overall, 41.1% of participants reported household earnings between $40,000 and $79,999. OBBW reported a lower annual household income ($\leq$$39,999 - $79,999) than YBBW ($60,000 - $149,999). Income was more evenly distributed for urban BBW, while a higher proportion of rural BBW earned between $40,000 - $79,999. Sixty-one percent of participants had at least a university bachelor degree or college diploma/certificate. Overall, 87.5% reported their self-rated health as either *good*, *very good* or *excellent*, when compared to others their age, similar across age category and location of residence.

Table 4.0. Participant Characteristics

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Age			
Mean (SD)	60 (5.3)	64 (2.8)	55 (2.7)
Location of residence	**% (n)**	**% (n)**	**% (n)**
Urban[c]	62.4 (676)	61.1 (334)	63.8 (342)
Rural[d]	37.6 (407)	38.9 (213)	36.2 (194)
Relationship status	**% (n)**	**% (n)**	**% (n)**
Single	9.7 (105)	8.8 (48)	10.7 (57)
Common-law or Legally married	71.3 (772)	68.7 (376)	73.8 (396)
Separated or Divorced	12.6 (136)	12.3 (67)	12.9 (69)
Widowed	6.4 (69)	10.1 (55)	2.6 (14)
Other[e]	0.1 (1)	0.2 (1)	0.0 (0)
Ethnicity[f]	**% (n)**	**% (n)**	**% (n)**
Aboriginal or Indigenous	4.1 (49)	4.3 (26)	3.8 (23)
North American	73.9 (888)	73.8 (445)	74.1 (443)
Latin American/Caribbean	0.5 (6)	0.3 (2)	0.7 (4)
European	20.9 (251)	21.4 (129)	20.4 (122)
African	0.2 (2)	0.2 (1)	0.2 (1)
Asian	0.5 (6)	0.0 (0)	1.0 (6)
Polynesian	0.0 (0)	0.0 (0)	0.0 (0)
Number of persons (including self) one lives with (≥ 3 days/week)			
Mean (SD)	2.1 (1.0)	1.8 (0.8)	2.4 (1.1)
Range	1 – 7	1 – 7	1 – 7
1	31.0 (336)	38.6 (211)	23.3 (125)
2	45.7 (495)	51.7 (283)	39.6 (212)
3	13.8 (149)	6.8 (37)	20.9 (112)
4 or more	9.5 (103)	2.9 (16)	16.2 (87)

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Annual household income (before taxes)	**% (n)**	**% (n)**	**% (n)**
$39,999 or less	15.9 (172)	22.5 (123)	9.1 (49)
$40,000 - $59,999	21.2 (230)	24.7 (135)	17.7 (95)
$60,000 - $79,999	19.9 (215)	20.8 (114)	18.8 (101)
$80,000 - $99,999	15.8 (171)	14.4 (79)	17.2 (92)
$100,000 - $149,999	17.3 (187)	12.2 (67)	22.4 (120)
$\geq$ $150,000	10.0 (108)	5.3 (29)	14.7 (79)
Highest level of education	**% (n)**	**% (n)**	**% (n)**
High school diploma or less	25.0 (271)	24.1 (132)	25.9 (139)
Vocational/Trade	6.1 (66)	7.3 (40)	4.9 (26)
College (Diploma/Certificate)	30.4 (329)	30.2 (165)	30.6 (164)
University (Bachelor degree)	28.9 (313)	28.9 (158)	28.9 (155)
Graduate degree (Masters or Doctorate)	8.9 (96)	8.8 (48)	9.0 (48)
Other[g]	0.7 (8)	0.7 (4)	0.7 (4)
Cigarette smoking status	**% (n)**	**% (n)**	**% (n)**
Currently smoke cigarettes	9.8 (106)	9.1 (50)	10.4 (56)
Quit smoking cigarettes	39.2 (425)	42.0 (230)	36.4 (195)
Never smoked cigarettes	48.4 (524)	45.7 (250)	51.1 (274)
Other[h]	2.6 (28)	3.1 (17)	2.1 (11)
Self-rated health	**% (n)**	**% (n)**	**% (n)**
(How would you describe your health compared to others your age?)			
Excellent	13.9 (151)	15.2 (83)	12.7 (68)
Very good	40.6 (440)	41.1 (225)	40.1 (215)
Good	33.0 (357)	33.1 (181)	32.8 (175)
Fair to Poor	12.5 (135)	10.6 (58)	13.4 (77)

[a]Born between 1946-1955 (60-69 years of age, in 2015)
[b]Born between 1956-1965 (50-59 years of age, in 2015)
[c]Within the Winnipeg perimeter
[d]Within MB, outside the Winnipeg perimeter
[e]Responses included: "medical separation" and "divorced/widowed"
[f]Multiple response question – participants selected all responses that applied to their self-identified ethnic background. Total participant responses= 1202, OBBW responses= 603, YBBW responses= 599.
[g]Responses included: receiving a post-baccalaureate, pre-masters, post-graduate degree, Royal Conservatory of Music diploma, and being a certified professional accountant
[h]Responses included: vague answers such as trying to smoke, previous social smoker, smoking a few when younger, occasional smoke; as well as currently vaping and smoking cigars or cigarillos.

Table 4.1. Comparison of Participant Characteristics by Age Category and Location of Residence

Variable	Urban[a]			Rural[b]		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Age Category	**% (n)** 100 (676)	**% (n)** 49.4 (334)	**% (n)** 50.6 (342)	**% (n)** 100 (407)	**% (n)** 52.3 (213)	**% (n)** 47.7 (194)
Relationship status	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Single	12.4 (84)	11.4 (38)	13.5 (46)	5.2 (21)	4.7 (10)	5.7 (11)
Common-law or Legally married	64.8 (438)	61.7 (206)	67.8 (232)	82.1 (334)	79.8 (170)	84.5 (164)
Separated or Divorced	16.8 (113)	17.1 (57)	16.4 (56)	5.6 (23)	4.7 (10)	6.7 (13)
Widowed	5.9 (40)	9.6 (32)	2.3 (8)	7.1 (29)	10.8 (23)	3.1 (6)
Other[e]	0.1 (1)	0.3 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Ethnicity[f]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Aboriginal or Indigenous	3.8 (29)	5.1 (19)	2.6 (10)	4.5 (20)	3.0 (7)	6.0 (13)
North American	73.6 (555)	71.7 (267)	75.4 (288)	74.3 (333)	77.1 (178)	71.4 (155)
Latin American/Caribbean	0.7 (5)	0.5 (2)	0.8 (3)	0.2 (1)	0.0 (0)	0.5 (1)
European	21.0 (158)	22.6 (84)	19.4 (74)	20.6 (93)	19.5 (45)	22.1 (48)
African	0.1 (1)	0.0 (0)	0.3 (1)	0.2 (1)	0.4 (1)	0.0 (0)
Asian	0.8 (6)	0.0 (0)	1.6 (6)	0.0 (0)	0.0 (0)	0.0 (0)
Polynesian	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Number of persons (including self) one lives with ($\geq$ 3 days/week)						
Mean (SD)	2.1 (1.1)	1.7 (0.9)	2.4 (1.2)	2.1 (0.9)	1.8 (0.6)	2.4 (1.1)
Range	1 – 7	1 – 7	1 – 7	1 – 7	1 – 5	1 – 7
1	34.9 (236)	44.0 (147)	26.0 (89)	24.6 (100)	30.0 (64)	18.6 (36)
2	39.5 (267)	45.2 (151)	33.9 (116)	56.0 (228)	62.0 (132)	49.5 (96)
3	15.2 (103)	6.9 (23)	23.4 (80)	11.3 (46)	6.6 (14)	16.5 (32)
4 or more	10.4 (70)	3.9 (13)	16.7 (57)	8.1 (33)	1.4 (3)	15.5 (30)

Continued…

Variable	Urban[a]			Rural[b]		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Annual household income (before taxes)	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
$39,999 or less	16.4 (111)	23.4 (78)	9.6 (33)	15.0 (61)	21.1 (45)	8.2 (16)
$40,000 - $59,999	18.2 (123)	21.9 (73)	14.6 (50)	26.3 (107)	29.1 (62)	23.2 (45)
$60,000 - $79,999	19.2 (130)	19.8 (66)	18.7 (64)	20.9 (85)	22.5 (48)	19.1 (37)
$80,000 - $99,999	14.9 (101)	14.4 (48)	15.5 (53)	17.2 (70)	14.6 (31)	20.1 (39)
$100,000 - $149,999	19.8 (134)	14.1 (47)	25.4 (87)	13.0 (53)	9.4 (20)	17.0 (33)
> $150,000	11.4 (77)	6.6 (22)	16.1 (55)	7.6 (31)	3.3 (7)	12.4 (24)
Highest level of education	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
High school diploma or less	22.3 (151)	21.3 (71)	23.3 (81)	29.5 (120)	28.7 (61)	30.4 (59)
Vocational/Trade	5.5 (37)	7.2 (24)	3.8 (13)	7.1 (29)	7.5 (16)	6.7 (13)
College (Diploma/Certificate)	28.4 (192)	28.7 (96)	28.1 (96)	33.7 (137)	32.4 (69)	35.1 (68)
University (Bachelor Degree)	32.2 (218)	31.1 (104)	33.3 (114)	23.3 (95)	25.4 (54)	21.1 (41)
Graduate Degree (Masters or Doctorate)	11.1 (75)	10.8 (36)	11.4 (39)	5.2 (21)	5.6 (12)	4.6 (9)
Other[g]	0.4 (3)	0.9 (3)	0 (0.0)	1.2 (5)	0.5 (1)	2.1 (4)
Cigarette smoking status	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Currently smoke cigarettes	11.1 (75)	11.1 (37)	11.1 (38)	7.6 (31)	6.1 (13)	9.3 (18)
Quit smoking cigarettes	38.6 (261)	40.7 (136)	36.5 (125)	40.3 (164)	44.1 (94)	36.1 (70)
Never smoked cigarettes	47.0 (318)	44.3 (148)	49.7 (170)	50.6 (206)	47.9 (102)	53.6 (104)
Other[h]	3.3 (22)	3.9 (13)	2.6 (9)	1.5 (6)	1.9 (4)	1.0 (2)
Self-rated health *(How would you describe your health compared to others your age?)*	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Excellent	14.8 (100)	18.3 (61)	11.4 (39)	12.5 (51)	10.3 (22)	14.9 (29)
Very good	40.1 (271)	40.1 (134)	40.1 (137)	41.5 (169)	42.7 (91)	40.2 (78)
Good	33.0 (223)	31.4 (105)	34.5 (118)	32.9 (134)	35.7 (76)	29.9 (58)
Fair to Poor	12.1 (82)	10.2 (34)	14.0 (48)	13.0 (53)	11.3 (24)	15.0 (29)

[a] Within the Winnipeg perimeter
[b] Within MB, outside the Winnipeg perimeter
[c] Born between 1946-1955 (60-69 years of age, in 2015)
[d] Born between 1956-1965 (50-59 years of age, in 2015)
[e] Responses included: "medical separation" and "divorced/widowed"
[f] Multiple response question – participants selected all responses that applied to their self-identified ethnic background. Total urban BBW responses= 754, total older urban BBW responses= 372, total younger urban BBW responses= 382, total rural BBW responses= 448, total older rural BBW responses= 231, total younger urban BBW responses= 217.
[g] Responses included: receiving a post-baccalaureate, pre-masters, post-graduate degree, Royal Conservatory of Music diploma, and being a certified professional accountant
[h] Responses included: vague answers such as trying to smoke, previous social smoker, smoking a few when younger, occasional smoke; as well as currently vaping and smoking cigars or cigarillos.

Overall Appearance and Body Weight Satisfaction

The following description refers to results from Tables 4.2 and 4.3. For t-tests refer to Appendix L. Over half (53.0%) of participants were satisfied with their overall appearance and 31.9% were dissatisfied. On the contrary, only 33.8% were satisfied with their body weight and 55.5% dissatisfied. Ninety-one percent of participants desired to lose weight (M= 29.9 $\pm$ 29.3lbs) with a significant difference in desired mean weight loss for YBBW (M= 29.8 $\pm$ 31.9lbs) compared to OBBW (M= 24.2 $\pm$ 26.6lbs) [t= 3.1 (1036.0), p= 0.002]. However, there was no significant difference by location of residence [t= 0.3 (1078), p= 0.781]. The mean "ideal" body weight of participants was 142.8 $\pm$ 21.76lbs with insignificant differences by location of residence or age category. The mean level of average daily appearance stress was 31.5 $\pm$ 27.9 (equating to feeling "somewhat stressed"), no significant difference in mean scores between rural and urban residents [t= 1.1 (1081), p= 0.257]; however, YBBW were identified to be significantly more stressed on a daily basis about their appearance (M= 35.80 $\pm$23.2) than OBBW (M= 27.4 $\pm$25.9) [t= 5.0 (1060.4), p <0.001]. Appendix M categorizes the VAS results into quartiles for interpretations of means. Participants were also asked about appearance preoccupation (*during a typical day, how often do you think about your appearance?*) and 60.4% of participants reported *sometimes* being preoccupied and 19.0% stated they *frequently* do, with minimal variation between age category and location of residence. Similarly, 42.4% and 36.0% of participants reported *sometimes* to *frequent* appearance anxiety with minimal variation by age category or location of residence.

Aging Concerns

Forty-six percent of participants *agreed* with the statement "I am worried about the impact of aging on my overall appearance", with a slightly higher percentage of YBBW (47.5%)

compared to OBBW (44.8%) stating the same. The highest aging concern was identified by urban residents, of whom 49.6% *agreed* to the above question, compared to 40.5% of rural participants. Forty-six percent of participants used anti-aging products 3-7 times per week with no variation by age category; however, 49.5% of urban residents compared to 39.8% rural residents used these products 3-7 times per week [χ^2= 11.419, df= 5, p= 0.044].

Influences on Appearance

Over half (51.7%) of participants reported *sometimes* to *frequently* feeling pressure from the media (television, magazines, radio, Internet ads, etc.) to look a certain way for acceptance. Minimal difference by location of residence; however, a greater percentage of YBBW (55.8%) responded this way compared to OBBW (47.6%). When data set was split by location of residence, there was a significant association between body weight satisfaction and media pressure to look a certain way for acceptance by urban (χ^2= 37.149, p< 0.001) and rural (χ^2= 34.671, p< 0.001) residents, as well as with overall appearance satisfaction by urban (χ^2= 37.374, p< 0.001) and rural residents (χ^2= 44.475, p <0.001). Twenty-three percent of participants felt pressure from others to look a certain way for acceptance, which was much higher for YBBW (27.6%) compared to OBBW (19.3%). Similarly, 25.1% of urban residents reported pressure from others compared to 20.6% of rural residents. Overall, the top three sources of pressure were from *friends* (42.9%), *peers* (35.0%), and *spouse* (32.7%). Open-ended responses to this question (n= 43) were coded and seven themes emerged: "partner" (n= 5), "media/society" (n= 9), "boss/employer" (n= 2), "myself" (n= 8), "strangers/general public or neighbours" (n= 14), "men" (n= 2), and "healthcare professionals" (n= 3).

Body Work Practices and Dieting Behaviour

The top three body work practices *used* by OBBW as well as urban participants respectively were (Raw Data – Appendices G-J; Figure 4.0): *wearing make-up* (82.2%, 83.9%), *esthetic services* (36.1%, 39.2%), and *wearing shape forming undergarments* (30.1%, 38.5%). YBBW and rural participants respectively identified *wearing make-up* (81.9%, 79.1%) as their number one *used* body work practice, followed by *wearing shape forming undergarments* (40.0%, 29.5%), and using *esthetic services* (34.4%, 28.7%).

Seventy-one percent of participants reported *sometimes to always* engaging in dieting behaviour in an effort to lose weight. Sixty-nine percent of OBBW and 73.8% of YBBW reported this behaviour *sometimes to always*, which was consistent by location of residence (72.1% of urban and 70.5% of rural women). Almost one-quarter (23.6%) of participants participated in a formal weight loss program or diet plan within the last five years and over 54.4% identified restricting or reducing consumption of specific foods in an effort to look better, with no difference by age category; however, 57.2% of urban, compared to 49.6% of rural participants reported restricting intake. For those who responded *yes* (n= 589) to these restrictions, the following themes in descending order of number of responses were found: *processed and/or restaurant and/or fast food, sweets and/or desserts, all carbs, refined sugar and/or flour, high fat/full fat, other, dairy,* and *meat* (Appendix N).

Table 4.2. Body Satisfaction, Influences on Appearance, Body Work, Aging Concerns, and Physical Activity

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Appearance satisfaction	% (n)	% (n)	% (n)
Satisfied	53.0 (574)	57.2 (313)	48.7 (261)
Neutral	15.1 (164)	14.4 (79)	15.9 (85)
Dissatisfied	31.9 (345)	28.3 (155)	35.4 (190)
Average daily appearance stress *(VAS[c] question range 0-100)*	% (n)	% (n)	% (n)
Mean level of stress (SD)	31.5 (27.9)	27.3 (25.9)	35.8 (29.2)
Range	1-100	1-100	1-100
Weight satisfaction	% (n)	% (n)	% (n)
Satisfied	33.8 (366)	35.8 (196)	31.7 (170)
Neutral	10.7 (116)	9.9 (54)	11.6 (62)
Dissatisfied	55.5 (601)	54.3 (297)	56.7 (304)
DWC (in lbs)[d]	% (n)	% (n)	% (n)
Gain weight	2.5 (27)	3.3 (18)	1.7 (9)
Maintain current weight	6.7 (72)	8.2 (45)	5.1 (27)
Lose weight	90.8 (981)	88.5 (483)	93.3 (498)
Impact of aging on appearance *(I am worried about the impact of aging on my overall appearance?)*	% (n)	% (n)	% (n)
Agree	46.1 (500)	44.8 (245)	47.6 (255)
Neutral	32.6 (353)	34.9 (191)	30.2 (162)
Disagree	21.2 (230)	20.3 (111)	22.2 (119)
Importance of overall appearance *(VAS[c] question range 0-100)*			
Mean level of stress (SD)	70.7 (22.4)	69.7 (22.7)	71.6 (22.0)
Range	1 – 100	1 – 100	1 – 100

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Appearance preoccupation *(During a typical day, how often do you think about your appearance?)*	% (n)	% (n)	% (n)
Frequently	19.0 (205)	17.9 (98)	20.0 (107)
Sometimes	60.4 (654)	59.6 (326)	61.2 (328)
Rarely to Never	20.7 (224)	22.5 (123)	18.9 (101)
Appearance anxiety *(Do you feel self-conscious about your body shape/size in the company of others?)*	% (n)	% (n)	% (n)
Frequently	36.0 (390)	31.7 (173)	40.5 (217)
Sometimes	42.4 (459)	45.0 (246)	39.7 (213)
Rarely to Never	21.6 (234)	23.4 (128)	19.8 (106)
Body image and participation in activities *(Do feelings about your body prevent participation in activities you enjoy?)*	% (n)	% (n)	% (n)
Yes	23.2 (251)	20.1 (110)	26.3 (141)
No	76.8 (832)	79.9 (437)	73.7 (395)
Media pressure on appearance *[How frequently do you feel pressure from the media (television, magazines, radio, Internet ads, etc.) to look a certain way for acceptance?]*	% (n)	% (n)	% (n)
Frequently	23.4 (253)	20.4 (112)	26.3 (141)
Sometimes	28.3 (307)	27.2 (149)	29.5 (158)
Rarely to Never	48.2 (523)	52.3 (286)	44.2 (237)
Appearance pressure from others	% (n)	% (n)	% (n)
Yes	23.5 (254)	19.3 (106)	27.6 (148)
No	76.5 (829)	80.7 (441)	72.4 (388)

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Pressure from whom?[e]	**% (n)**	**% (n)**	**% (n)**
Friends	42.9 (109)	40.1 (43)	44.6 (66)
Coworkers	29.9 (76)	18.9 (20)	37.8 (56)
Peers	35.0 (89)	30.2 (32)	38.5 (57)
Spouse	32.7 (83)	32.0 (34)	33.1 (49)
Parent(s)	17.7 (45)	11.3 (12)	22.3 (33)
Siblings	23.6 (60)	25.5 (27)	22.3 (33)
Children	29.1 (74)	30.2 (32)	28.4 (42)
Other family members	29.1 (74)	28.3 (30)	29.7 (44)
Other	17.3 (44)	16.0 (17)	18.2 (27)
Use of anti-aging products	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	33.7 (365)	34.6 (189)	32.8 (176)
3-5 times a week	12.3 (133)	10.8 (59)	13.8 (74)
1-2 times a week	5.0 (54)	3.7 (20)	6.3 (34)
3 times a month or less	12.3 (133)	12.4 (68)	12.2 (65)
Never	33.1 (358)	34.0 (186)	32.1 (172)
Not sure	3.7 (40)	4.6 (25)	2.8 (15)
Dieting behaviour	**% (n)**	**% (n)**	**% (n)**
(Within the past year, how frequently have you controlled, restricted or reduced your food intake in an effort to lose weight?)			
Always	4.9 (53)	4.6 (25)	5.2 (28)
Often	27.2 (295)	24.5 (134)	30.0 (161)
Sometimes	39.3 (426)	40.0 (219)	38.6 (207)
Rarely	18.0 (195)	19.0 (104)	17.0 (91)
Never	10.5 (114)	11.9 (65)	9.1 (49)
(Currently, are there specific foods that you do not eat or eat very little of in an effort to look better?)			
Yes	54.4 (589)	54.3 (297)	54.5 (292)
No	45.6 (494)	45.7 (250)	45.5 (244)

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Use of diet plans/programs	**% (n)**	**% (n)**	**% (n)**
(Have you participated in a formal weight loss program or diet plan within the last 5 years?)			
Yes	23.6 (256)	22.9 (125)	24.5 (131)
No	76.4 (827)	77.1 (422)	75.6 (405)
Change in participation in physical activity with age?	**% (n)**	**% (n)**	**% (n)**
Yes	77.4 (838)	76.6 (419)	78.2 (419)
No	22.6 (245)	23.4 (128)	21.8 (117)
Reason for participating in physical activity	**% (n)**	**% (n)**	**% (n)**
Stay healthy	27.2 (295)	31.4 (172)	22.9 (123)
Lose weight	1.6 (17)	1.8 (10)	1.3 (7)
Both: stay healthy and lose weight	53.0 (574)	50.3 (275)	55.8 (299)
Other	5.2 (56)	4.9 (27)	5.4 (29)
I do not participate in physical activity	13.0 (141)	11.5 (63)	14.6 (78)
Importance of body work to self-esteem			
(VAS[c] question range 0-100)			
Mean Level of Importance (SD)	49.6 (31.5)	49.3 (31.4)	50.0 (31.7)
Range	1 – 100	1 - 100	1 – 100
Importance of physical activity to appearance and body image			
(VAS[c] question range 0-100)			
Mean level of importance (SD)	77.6 (21.7)	76.5 (22.5)	78.8 (20.7)
Range	1 – 100	1 – 100	1 -100

[a]Born between 1946-1955 (60-69 years of age)
[b]Born between 1956-1965 (50-59 years of age)
[c]Visual Analog Scale ranges from 0mm ("never stressed" or "never important") – 100mm ("very stressed" or "very important")
[d]Missing 3 responses (n= 1080) due to: presumed incorrect unit of measure provided by participant (kg instead of lbs), estimated weight of 0lbs, and DWC= 100% of current weight
[e]Multiple response question only answered by participants who answered yes to the previous question ("Feel pressure from others to look a certain way for acceptance") – participants selected all responses that applied, % is calculated by dividing total row values by column totals (total participants= 254, total OBBW= 106, total YBBW= 148). Results are an estimate as equal weight among categories is unlikely.

Table 4.3. Comparison of Body Satisfaction, Influences on Appearance, Body Work, Aging Concerns, and Physical Activity by Age Category and Location of Residence

Variable	Urban[a]			Rural[b]		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Appearance satisfaction	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Satisfied	53.0 (358)	58.1 (194)	48.0 (164)	43.1 (216)	55.9 (119)	50.0 (97)
Neutral	15.1 (102)	13.5 (45)	16.7 (57)	15.2 (62)	16.0 (34)	14.4 (28)
Dissatisfied	32.0 (216)	28.4 (95)	35.4 (121)	31.7 (129)	28.2 (60)	35.6 (69)
Average daily appearance stress *(VAS[e] question range 0-100)*						
Mean level of stress (SD)	32.2 (27.8)	27.9 (25.7)	36.5 (29.2)	30.3 (28.0)	26.4 (26.2)	34.6 (29.2)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100
Weight satisfaction	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Satisfied	33.6 (227)	36.5 (122)	30.7 (105)	34.2 (139)	34.7 (74)	33.5 (65)
Neutral	10.4 (70)	8.4 (28)	12.3 (42)	11.3 (46)	12.2 (26)	10.3 (20)
Dissatisfied	56.1 (379)	55.1 (184)	57.0 (195)	54.5 (222)	53.1 (113)	56.2 (109)
DWC (in lbs)[f]	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Gain weight	2.5 (17)	3.3 (11)	1.8 (6)	2.5 (10)	3.3 (7)	1.5 (3)
Maintain current weight	6.8 (46)	9.3 (31)	4.4 (15)	6.4 (26)	6.6 (14)	6.2 (12)
Lose weight	90.7 (611)	87.4 (291)	93.8 (320)	91.1 (370)	90.1 (192)	91.8 (178)
Impact of aging on appearance *(I am worried about the impact of aging on my overall appearance)*	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Agree	49.6 (335)	48.5 (162)	50.5 (173)	40.5 (165)	39.0 (83)	42.2 (82)
Neutral	31.2 (211)	33.2 (111)	29.2 (100)	34.9 (142)	37.6 (80)	32.0 (62)
Disagree	19.3 (130)	18.3 (61)	20.2 (69)	24.5 (100)	23.5 (50)	25.7 (50)
Importance of overall *(VAS[e] question range 0-100)*						
Mean level of importance (SD)	71.5 (22.0)	70.7 (22.8)	72.2 (21.2)	69.3 (23.0)	68.0 (22.4)	70.7 (23.5)
Range	1 – 100	2 – 100	1 – 100	1 - 100	1 – 100	1 – 100

Continued…

Variable	Urban[a]			Rural[b]		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Appearance preoccupation	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
(During a typical day, how often do you think about your appearance?)						
Frequently	19.2 (130)	18.9 (63)	19.5 (67)	18.4(75)	16.4 (35)	20.6 (40)
Sometimes	59.0 (399)	57.8 (193)	60.4 (206)	62.7 (255)	62.4 (133)	62.9 (122)
Rarely to Never	21.7 (147)	23.4 (81)	20.2 (69)	18.9 (77)	21.2 (45)	16.5 (32)
Appearance anxiety	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
(Do you feel self-conscious about your body shape/size in the company of others?)						
Frequently	34.0 (230)	28.5 (95)	39.5 (135)	39.3 (160)	36.6 (78)	42.2 (82)
Sometimes	43.5 (294)	47.6 (159)	39.5 (135)	40.5 (165)	40.8 (87)	40.2 (78)
Rarely to Never	22.5 (152)	24.0 (80)	21.0 (72)	20.2 (82)	22.5 (48)	17.5 (34)
Body image and participation in activities	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
(Do feelings about your body prevent participation in activities you enjoy?)						
Yes	24.6 (166)	20.7 (69)	28.4 (97)	20.9 (85)	19.2 (41)	22.7 (44)
No	75.4 (510)	79.3 (265)	71.6 (245)	79.1 (322)	80.8 (172)	77.3 (150)
Media pressure on appearance	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
[How frequently do you feel pressure from the media (television, magazines, radio, Internet ads, etc.) to look a certain way for acceptance?]						
Frequently	22.1 (149)	20.1 (67)	24.0 (82)	25.5 (104)	21.1 (45)	30.5 (59)
Sometimes	30.3 (205)	26.9 (90)	33.6 (115)	25.1 (102)	27.7 (59)	22.2 (43)
Rarely to Never	47.6 (322)	53.0 (177)	42.4 (145)	49.4 (201)	51.2 (109)	47.5 (92)
Appearance pressure from others	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Yes	25.1 (170)	20.7 (69)	29.5 (101)	20.6 (84)	17.4 (37)	24.2 (47)
No	74.9 (506)	79.3 (265)	70.5 (241)	79.4 (323)	82.6 (176)	75.8 (147)

Variable	Urban[a]			Rural[b]		
	Total n= 676	**OBBW[c]** n= 334	**YBBW[d]** n= 342	**Total** n= 407	**OBBW[c]** n= 213	**YBBW[d]** n= 194
Pressure from whom?[g]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Friends	43.5 (74)	40.6 (28)	45.5 (46)	41.7 (35)	40.5 (15)	42.6 (20)
Coworkers	31.8 (54)	20.3 (14)	39.6 (40)	26.2 (22)	16.2 (6)	43.0 (16)
Peers	36.5 (62)	34.8 (24)	37.6 (38)	32.1 (27)	21.6 (8)	40.4 (19)
Spouse	26.5 (45)	30.4 (21)	23.8 (24)	45.2 (38)	35.1 (13)	53.2 (25)
Parent(s)	18.8 (32)	13.0 (9)	22.8 (23)	15.5 (13)	8.1 (3)	21.3 (10)
Siblings	23.5 (40)	24.6 (17)	22.8 (23)	23.8 (20)	27.0 (10)	21.3 (10)
Children	29.4 (50)	33.3 (23)	26.7 (27)	28.6 (24)	24.3 (9)	31.9 (15)
Other family members	30.6 (52)	27.5 (19)	32.7 (33)	26.2 (22)	32.4 (11)	23.4 (11)
Other	17.6 (30)	15.9 (11)	18.8 (19)	16.7 (14)	16.2 (6)	17.0 (8)
Use of anti-aging products	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	36.5 (247)	37.4 (125)	35.7 (122)	29.0 (118)	30.0 (64)	27.8 (54)
3-5 times a week	13.0 (88)	11.4 (38)	14.9 (51)	10.8 (44)	9.9 (21)	11.9 (23)
1-2 times a week	4.3 (29)	3.3 (11)	5.3 (18)	6.1 (25)	4.2 (9)	8.2 (16)
3 times a month or less	12.5 (84)	13.8 (46)	11.1 (38)	12.0 (49)	10.4 (22)	13.9 (27)
Never	30.3 (205)	30.5 (102)	29.8 (102)	37.8 (154)	39.4 (84)	36.1 (70)
Not sure	3.4 (23)	3.6 (12)	3.2 (11)	4.2 (17)	6.1 (13)	2.1 (4)
Dieting behaviour *(Within the past year, how frequently have you controlled, restricted or reduced your food intake in an effort to lose weight?)*	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Always	4.9 (33)	4.2 (14)	5.6 (19)	4.9 (20)	5.2 (11)	4.6 (9)
Often	27.7 (187)	24.6 (82)	30.7 (105)	26.5 (108)	24.4 (52)	28.9 (56)
Sometimes	39.5 (267)	40.4 (135)	38.6 (132)	39.1 (159)	39.4 (84)	38.7 (75)
Rarely	17.0 (115)	18.6 (62)	15.5 (53)	19.7 (80)	19.7 (42)	19.6 (38)
Never	10.9 (74)	12.3 (41)	9.6 (33)	9.8 (40)	11.3 (24)	8.2 (16)
(Currently, are there specific foods that you do not eat or eat very little of in an effort to look better?)						
Yes	57.2 (387)	56.0 (187)	58.5 (200)	49.6 (202)	51.6 (110)	47.4 (92)
No	42.8 (289)	44.0 (147)	41.5 (142)	50.4 (205)	48.4 (103)	52.6 (102)

Continued…

Variable	Urban[a]			Rural[b]		
	Total n= 676	**Older BBW**[c] n= 334	**YBBW**[d] n= 342	**Total** n= 407	**OBBW**[c] n= 213	**YBBW**[d] n= 194
Use of diet plans/programs *(Have you participated in a formal weight loss program or diet plan within the last 5 years?)*	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Yes	24.6 (166)	24.3 (81)	24.9 (85)	22.1 (90)	20.7 (44)	23.7 (46)
No	75.4 (510)	75.7 (253)	75.1 (257)	77.9 (317)	79.3 (169)	76.3 (148)
Change in participation in physical activity with age?	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Yes	78.0 (527)	76.9 (257)	78.9 (270)	76.4 (311)	76.1 (162)	76.8 (149)
No	22.0 (149)	23.1 (77)	21.1 (72)	23.6 (96)	23.9 (51)	23.2 (45)
Reason for participating in physical activity	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Stay healthy	27.4 (185)	30.5 (102)	24.3 (83)	27.0 (110)	32.9 (70)	20.6 (40)
Lose weight	1.6 (11)	1.8 (6)	1.5 (5)	1.5 (6)	1.9 (4)	1.0 (2)
Both: stay healthy and lose weight	53.6 (362)	51.5 (172)	55.6 (190)	52.1 (212)	48.4 (103)	56.2 (109)
Other	4.6 (31)	3.6 (12)	5.6 (19)	6.1 (25)	7.0 (15)	5.2 (10)
I do not participate in physical activity	12.9 (87)	12.6 (42)	13.2 (45)	13.3 (54)	9.9 (21)	17.0 (33)
Importance of body work to self-esteem *(VAS[e] question range 0-100)*						
Mean level of importance (SD)	50.8 (31.5)	51.5 (31.4)	50.2 (31.5)	47.7 (31.6)	45.8 (31.1)	49.7 (32.1)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100
Importance of physical activity to appearance and body image *(VAS[e] question range 0-100)*						
Mean level of importance (SD)	78.7 (21.1)	78.0 (21.5)	79.4 (20.8)	75.9 (22.4)	74.2 (24.0)	77.7 (20.5)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100

[a] Within the Winnipeg perimeter
[b] Within MB, outside the Winnipeg perimeter
[c] Born between 1946-1955 (60-69 years of age)
[d] Born between 1956-1965 (50-59 years of age)
[e] Visual Analog Scale ranges from 0 ("never stressed" or "never important") – 100 ("very stressed" or "very important")
[f] Missing 3 responses (total urban, n= 674; total rural, n= 406) due to: presumed incorrect unit of measure provided by participant (kg instead of lbs), estimated weight of 0lbs, and DWC= 100% of current weight
[g] Multiple response question only answered by participants who answered yes to the previous question ("Feel pressure from others to look a certain way for acceptance") – participants selected all responses that applied, % is calculated by dividing total row values by column totals (total urban participants= 170, total older urban participants= 69, total younger urban participants= 101; total rural participants= 84, total older rural participants= 37, total younger rural participants= 47). Results are an estimate as equal weight among categories is unlikely.
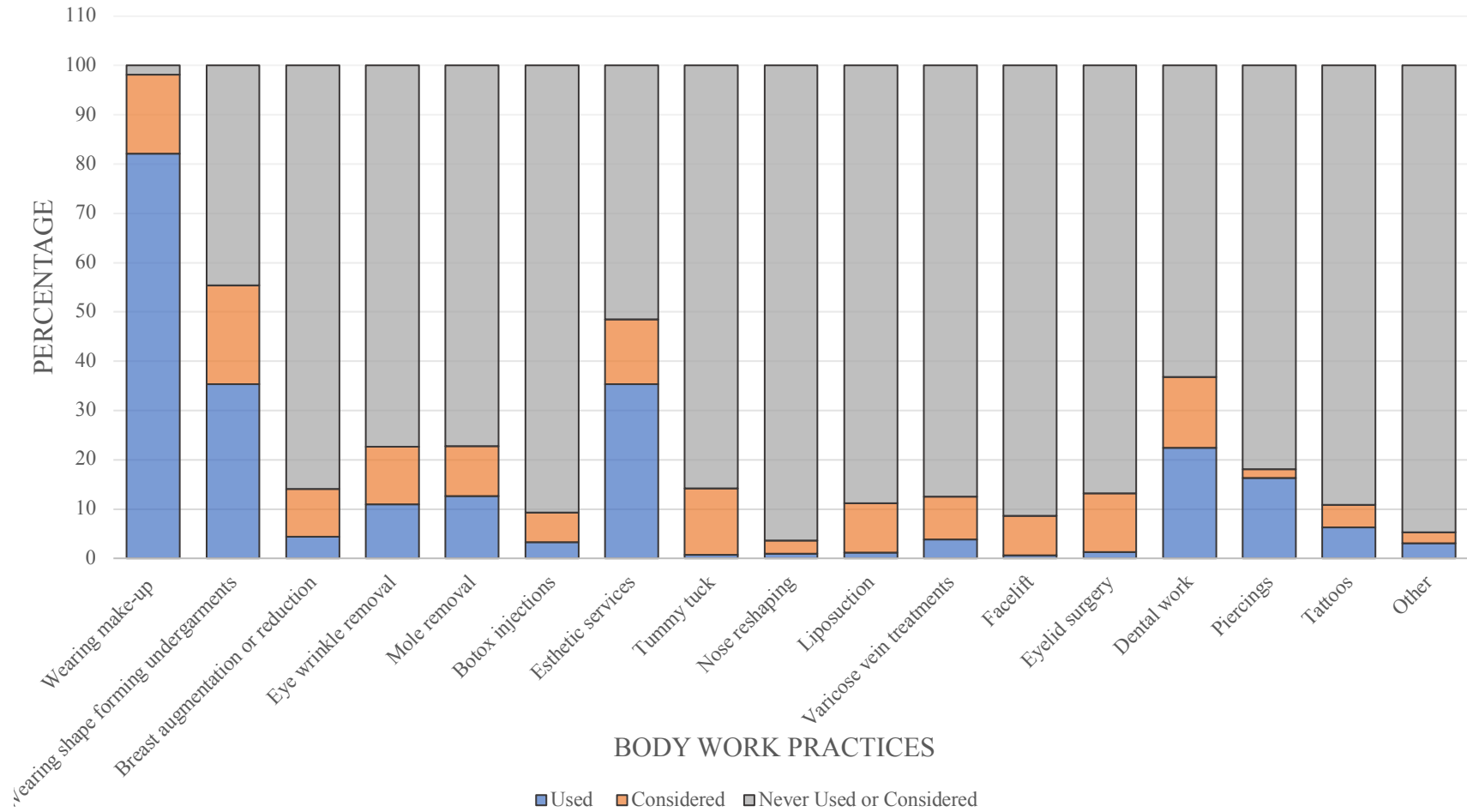
Figure 4.0. Body Work Practices Participants Used, Considered, or Never Used

Associations with Body Weight Satisfaction

Associations between body weight satisfaction and sociodemographic, environmental, and health/behaviour-related variables were explored (Table 4.4).

Sociodemographic Variables. No difference in body weight satisfaction by age category (p= 0.306) or location of residence (p= 0.842). Body weight satisfaction was significantly associated with was household income (χ^2= 22.871, df= 10, p= 0.011). Amongst those who were dissatisfied with their body weight, there was a greater percentage whose income ranged between $40,000 and $79,999. For those who identified they were satisfied with their body weight, percentages between income brackets remained relatively consistent.

Environmental Variables. Appearance pressure from others, media pressure on appearance, and media influence on food choices were significantly related to body weight satisfaction. In all three weight satisfaction categories, greater than 70% of women reported feeling no appearance pressure from others; however, there were a greater percentage of participants who reported this in the *satisfied* (84.4%) compared to *neutral* (80.2%) or *dissatisfied* (71.0%) groups (χ^2= 23.267, df= 2, p≤ 0.001). Similarly, for media pressure on appearance, the greatest difference in frequency of pressure was amongst respondents in the *frequently* category. As a whole, participants who reported greater dissatisfaction with their body weight identified being frequently influenced by the media (χ^2= 67.904, df= 6, p< 0.001). The media's influence on food choices was also significantly different by category of body weight satisfaction (χ^2= 12.802, df= 4, p= 0.012).

Health/behaviour-related Variables. Overall, weight satisfaction decreased when identifying as a smoker (χ^2= 13.778, df= 4, p= 0.008). A poorer rating of self-rated health was associated with decreased body weight satisfaction. Those who were *satisfied* rated their health as more

favourable, either *very good* (50.5%) or *excellent* (26.8%) and those who were *dissatisfied* with their body weight were most likely to rate their health as *good* (39.3%) (χ^2= 157.061, df= 6, p< 0.001). The majority of participants within each of the weight satisfaction categories *sometimes* felt preoccupied with their appearance; however, 23.5% of those who were *dissatisfied* compared to 13.1% and 13.8% who were *satisfied* and *neutral* about their body weight identified *frequently* being preoccupied with their appearance (χ^2= 20.013, df= 4, p< 0.001). Appearance anxiety increased with a decrease in weight satisfaction (χ^2= 228.499, df= 4, p< 0.001). Frequency of dieting behaviour increased with a decrease in body weight satisfaction (χ^2= 111.852, df= 8, p< 0.001). Participants *satisfied* with their body weight exhibited a greater difference in frequency of organic food consumption compared to those who were *neutral* or *dissatisfied* with their body weight (χ^2= 15.265, df= 8, p= 0.018). Participants within the *satisfied* (63.4%) or *neutral* (60.5%) categories of body weight *never* selected foods and/or supplements for weight loss compared to 39.2% of *dissatisfied* participants (χ^2= 60.636, df= 8, p< 0.001).

Table 4.4. Proportions and Associations with Body Weight Satisfaction

| Variable | Variable Category | Body Weight Satisfaction | | | Test Statistic | p-value |
		Satisfied n (% within satisfied) Total= 366	Neutral n (% within neutral) Total= 116	Dissatisfied n (% within dissatisfied) Total= 601		
Age category	Older	196 (53.6)	54 (58.6)	297 (49.4)	2.369	0.306
	Younger	170 (46.4)	62 (57.4)	304 (50.6)		
Location of residence	Urban	227 (62.0)	70 (60.3)	379 (63.1)	0.343	0.842
	Rural	139 (38.0)	46 (39.7)	222 (36.9)		
Relationship status[a]	Single	30 (8.2)	19 (16.4)	56 (9.3)	10.066	0.122
	Common law or Married	273 (74.6)	72 (62.1)	427 (71.2)		
	Separated or Divorced	39 (10.7)	17 (14.7)	80 (13.3)		
	Widowed	24 (6.6)	8 (6.9)	37 (6.2)		
Number of persons one lives with	1	108 (29.5)	42 (36.2)	186 (30.9)	5.091	0.532
	2	175 (47.8)	42 (36.2)	278 (46.3)		
	3	48 (13.1)	19 (16.4)	82 (13.6)		
	4 or more	35 (9.6)	13 (11.2)	55 (9.2)		
Household income	$39,999 or less	60 (16.4)	29 (25.0)	83 (13.8)	22.871	0.011*
	$40,000-$59,999	73 (19.9)	33 (28.4)	124 (20.6)		
	$60,000-$79,999	65 (17.8)	19 (23.0)	131 (21.8)		
	$80,000-$99,999	67 (18.3)	10 (8.6)	94 (15.6)		
	$100,000-$149,999	61 (16.7)	13 (11.2)	113 (18.8)		
	$150,000 or more	40 (10.9)	12 (10.3)	56 (9.3)		
Level of education[a]	High school or less	92 (25.3)	43 (37.1)	136 (22.8)	15.097	0.057
	Vocational/trade	20 (5.5)	8 (6.9)	38 (6.4)		
	College (diploma/certificate)	102 (28.1)	27 (23.3)	200 (33.6)		
	University (Bachelor degree)	111 (31.0)	30 (25.9)	172 (28.9)		
	Graduate degree (Masters or Doctorate)	38 (10.5)	8 (6.9)	50 (8.4)		

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Cigarette smoking status[a]	Currently smoke cigarettes	40 (11.3)	12 (10.5)	54 (9.2)	13.778	0.008**
	Quit smoking cigarettes	117 (33.1)	43 (37.7)	265 (45.1)		
	Have never smoked cigarettes	197 (55.6)	59 (51.8)	268 (45.7)		
Self-rated health	Excellent	98 (26.8)	5 (4.3)	48 (8.0)	157.061	<0.001**
	Very good	185 (50.5)	49 (42.2)	206 (34.3)		
	Good	68 (18.6)	53 (45.7)	236 (39.3)		
	Fair to Poor	15 (4.1)	9 (7.8)	111 (18.5)		
Impact of aging on appearance	Agree	171 (46.7)	55 (47.4)	274 (45.6)	2.141	0.710
	Neutral	112 (30.6)	41 (35.3)	200 (33.3)		
	Disagree	83 (22.7)	20 (17.2)	127 (21.1)		
Appearance preoccupation	Frequently (Always and Often)	48 (13.1)	16 (13.8)	141 (23.5)	20.013	<0.001**
	Sometimes	238 (65.0)	69 (59.5)	347 (57.7)		
	Rarely to Never	80 (21.9)	31 (26.7)	113 (18.8)		
Appearance anxiety	Frequently (Always and Often)	50 (13.7)	25 (21.6)	315 (52.4)	228.499	<0.001**
	Sometimes	161 (44.0)	64 (55.2)	234 (38.9)		
	Rarely to Never	155 (42.3)	27 (23.3)	52 (8.7)		
Appearance pressure from others	Yes	57 (15.6)	23 (19.8)	174 (29.0)	23.267	<0.001**
	No	309 (84.4)	93 (80.2)	427 (71.0)		
Use of anti-aging products[b]	Daily (6-7 times a week)	139 (39.3)	32 (29.1)	194 (33.5)	9.820	0.278
	3-5 times a week	42 (11.9)	15 (13.6)	76 (13.1)		
	1-2 times a week	15 (4.2)	9 (8.2)	30 (5.2)		
	3 times a month or less	35 (9.9)	17 (15.5)	81 (14.0)		
	Never	123 (34.7)	37 (33.6)	198 (34.2)		
Media pressure on appearance	Frequently (Always and Often)	42 (11.5)	26 (22.4)	185 (30.8)	67.904	<0.001**
	Sometimes	96 (26.2)	33 (28.4)	178 (29.6)		
	Rarely	151 (41.3)	39 (33.6)	182 (30.3)		
	Never	77 (21.0)	18 (15.5)	56 (9.3)		

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Dieting behaviour	Always	19 (5.2)	6 (5.2)	28 (4.7)	111.852	<0.001**
	Often	65 (17.8)	20 (17.2)	210 (34.9)		
	Sometimes	118 (32.2)	49 (42.2)	259 (43.1)		
	Rarely	90 (24.6)	25 (21.6)	80 (13.3)		
	Never	74 (20.2)	16 (13.8)	24 (4.0)		
Consumption of local foods[b]	Daily (6-7 times a week)	105 (32.6)	27 (27.3)	143 (27.3)	6.960	0.138
	Weekly (1-5 times a week)	191 (59.3)	57 (57.6)	332 (63.5)		
	3 times a month or less	26 (8.1)	15 (15.2)	48 (9.2)		
	Never	-	-	-		
Consumption of organic foods[b]	Daily (6-7 times a week)	43 (13.7)	11 (10.6)	35 (6.9)	15.265	0.018*
	Weekly (1-5 times a week)	87 (27.8)	24 (23.1)	117 (23.2)		
	3 times a month or less	112 (35.8)	40 (38.5)	214 (42.4)		
	Never	71 (22.7)	29 (27.9)	139 (27.5)		
Consumption of functional foods[b]	Daily (6-7 times a week)	70 (20.5)	20 (18.0)	78 (46.4)	8.398	0.210
	Weekly (1-5 times a week)	134 (39.2)	45 (40.5)	221 (39.1)		
	3 times a month or less	83 (24.3)	28 (25.2)	163 (28.8)		
	Never	55 (16.1)	18 (16.2)	103 (18.2)		
Consumption of foods and/or supplements for weight loss[b]	Daily (6-7 times a week)	15 (4.2)	3 (2.6)	48 (8.3)	60.636	<0.001**
	Weekly (1-5 times a week)	49 (13.7)	19 (16.7)	148 (25.7)		
	3 times a month or less	67 (18.7)	23 (20.2)	154 (26.7)		
	Never	227 (63.4)	69 (60.5)	226 (39.2)		
Media influence on food choices	Sometimes to Always	128 (35.0)	40 (34.5)	223 (37.1)	12.803	0.012*
	Rarely	157 (42.9)	49 (42.2)	293 (48.8)		
	Never	81 (22.1)	27 (23.3)	85 (14.1)		

Significance level: *p≤0.05; **p≤0.01
[a]Category "other" excluded for chi-square analysis
[b]Category "not sure" excluded for chi-square analysis

Associations with Overall Appearance Satisfaction

Associations between overall appearance satisfaction and sociodemographic,
environmental, and health/behaviour-related variables were also explored (Table 4.5).

Sociodemographic Variables. Appearance satisfaction did not differ by location of residence
(p= 0.995); however, a higher percentage women who were *satisfied* with their appearance were
OBBW (54.5%) compared to YBBW (45.5%) (χ^2= 8.370, df= 2, p= 0.015).

Environmental Variables. Amongst the participants who identified appearance pressure from
others, more were *dissatisfied* (38.6%) with their overall appearance compared to those who
reported being *satisfied* (16.7%) or *neutral* (15.2%) about their overall appearance (χ^2= 64.434,
df= 2, p<0.001). Media pressure on appearance was also associated with appearance satisfaction.
Greater frequency of pressure from the media was associated with a decrease in overall
appearance satisfaction (χ^2= 76.173, df= 6, p< 0.001); however, among participants who reported
sometimes feeling media pressure, there was little variation across satisfaction categories. There
was also little discrepancy between appearance satisfaction categories and media pressure on
food choices among participants who "sometimes to always" or "rarely" felt pressure; however,
20.0% of *satisfied* participants *never* felt pressure compared to 12.2% of *dissatisfied* participants
(χ^2= 11.360, df= 4, p= 0.023).

Health/behaviour-related Variables. Cigarette smoking status (χ^2= 19.419, df= 4, p= 0.001)
and appearance anxiety (χ^2= 278.350, df= 4, p< 0.001) were significantly associated with overall
appearance satisfaction. A poorer rating of self-rated health was associated with decreased
appearance satisfaction with the largest differences observed amongst participants who identified
as *satisfied* with their appearance and rating their self-rated health was *very good* (49.1%)
compared to *fair to poor* (3.8%), and amongst those who reported being *dissatisfied,* 41.1% rated

their health as *good* and 5.8% rated their health as *excellent* (χ^2= 197.262, df= 6, p< 0.001).

Forty-three percent of participants *satisfied* with their appearance *agreed* to being concerned about the impact of aging on their appearance, 38.4% of *neutral* and 55.4% of *dissatisfied* participants reported the same (χ^2= 27.463, df= 4, p< 0.001). Appearance preoccupation was also significantly associated with appearance satisfaction. Those who were *dissatisfied* with their appearance identified being *frequently* preoccupied more so than those who were *satisfied* or *neutral* about their overall appearance (χ^2= 57.856, df= 4, p< 0.001). Within each appearance satisfaction category, 36.9% of *satisfied*, 43.3% of *neutral* and 41.4% of *dissatisfied* participants reported to *sometimes* engaging in dieting behaviours and 4.0% of *satisfied*, 3.7% of *neutral* and 7.0% of *dissatisfied* participants answered *always* engaging in this behaviour and these within group differences as well as comparative differences were significant (χ^2= 59.914, df= 8, p< 0.001). The consumption frequency of foods and/or supplements for weight loss increased in frequency amongst participants *dissatisfied* with their overall appearance relative to those who were *satisfied* or *neutral* (χ^2= 29.783, df= 6, p< 0.001).

Table 4.5. Proportions and Associations with Overall Appearance Satisfaction

Variable	Variable Category	Overall Appearance Satisfaction			Test Statistic	p-value
		Satisfied n (% within satisfied) Total= 574	Neutral n (% within neutral) Total= 164	Dissatisfied n (% within dissatisfied) Total= 345		
Age Category	Older	313 (54.5)	79 (48.2)	155 (44.9)	8.370	0.015*
	Younger	261 (45.5)	85 (51.8)	190 (35.4)		
Location of Residence	Urban	358 (62.4)	102 (62.2)	216 (62.6)	0.009	0.995
	Rural	216 (37.6)	62 (37.8)	129 (37.4)		
Relationship status[a]	Single	50 (8.7)	19 (11.6)	36 (10.5)	7.689	0.262
	Common law OR married	424 (73.9)	115 (70.1)	233 (67.7)		
	Separated OR divorced	61 (10.6)	23 (14.0)	52 (15.1)		
	Widowed	39 (6.8)	7 (4.3)	23 (6.7)		
Number of persons one lives with	1	176 (30.7)	48 (29.3)	112 (32.5)	7.827	0.251
	2	275 (47.9)	80 (48.8)	140 (40.6)		
	3	76 (13.2)	18 (11.0)	55 (15.9)		
	4 or more	47 (8.2)	18 (11.0)	38 (11.0)		
Household income	$39,999 or less	86 (15.0)	27 (16.5)	59 (17.1)	9.882	0.451
	$40,000-$59,999	118 (20.6)	42 (25.6)	70 (20.3)		
	$60,000-$79,999	104 (18.1)	36 (22.0)	75 (21.7)		
	$80,000-$99,999	98 (17.1)	22 (13.4)	51 (14.8)		
	$100,000-$149,999	106 (18.5)	20 (12.2)	61 (17.7)		
	$150,000 or more	62 (10.8)	17 (10.4)	29 (8.4)		
Level of education[a]	High school or less	134 (23.5)	51 (31.5)	86 (25.1)	12.173	0.144
	Vocational/trade	31 (5.4)	12 (7.4)	23 (6.7)		
	College (diploma/certificate)	167 (29.3)	46 (28.4)	116 (33.8)		
	University (Bachelor degree)	182 (31.9)	37 (22.8)	94 (27.4)		
	Graduate degree (Masters or Doctorate)	56 (9.8)	16 (9.9)	24 (7.0)		

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					χ²	p
Smoking status[a]	Currently smoke cigarettes Quit smoking cigarettes Have never smoked cigarettes	48 (8.6) 197 (35.4) 311 (55.9)	21 (13.2) 69 (43.4) 69 (43.4)	37 (10.9) 159 (37.4) 144 (42.4)	19.419	0.001**
Self-rated health	Excellent Very good Good Fair to Poor	124 (21.6) 282 (49.1) 146 (25.4) 22 (3.8)	7 (4.3) 70 (42.7) 68 (41.5) 19 (11.6)	20 (5.8) 88 (20.0) 143 (41.4) 94 (27.2)	197.262	<0.001**
Impact of aging on appearance	Agree Neutral Disagree	246 (42.9) 185 (32.2) 143 (24.9)	63 (38.4) 73 (44.5) 28 (17.1)	191 (55.4) 95 (27.5) 59 (17.1)	27.463	<0.001**
Appearance preoccupation	Frequently (Always and Often) Sometimes Rarely to Never	82 (14.3) 363 (63.2) 129 (22.5)	15 (9.1) 103 (15.7) 46 (28.0)	108 (31.3) 188 (54.5) 49 (14.2)	57.856	<0.001**
Appearance anxiety	Frequently (Always and Often) Sometimes Rarely to Never	106 (18.5) 271 (47.2) 197 (34.3)	48 (29.3) 95 (57.9) 21 (12.8)	236 (68.4) 93 (27.0) 16 (4.6)	278.350	<0.001**
Appearance pressure from others	Yes No	96 (16.7) 478 (83.3)	25 (15.2) 139 (84.8)	133 (38.6) 212 (61.4)	64.434	<0.001**
Use of anti-aging products[b]	Daily (6-7 times a week) 3-5 times a week 1-2 times a week 3 times a month or less Never	212 (38.2) 66 (11.9) 32 (5.8) 60 (10.8) 185 (33.3)	43 (27.2) 23 (14.6) 8 (5.1) 19 (12.0) 65 (41.1)	110 (33.3) 44 (13.3) 14 (4.2) 54 (16.4) 108 (32.7)	13.989	0.082
Media pressure on appearance	Frequently (Always and Often) Sometimes Rarely Never	88 (15.3) 159 (27.7) 219 (38.2) 108 (18.8)	37 (22.6) 47 (28.7) 58 (35.4) 22 (13.4)	128 (37.1) 101 (29.3) 95 (27.5) 21 (6.1)	76.173	<0.001**
Dieting behaviour	Always Often Sometimes Rarely Never	23 (4.0) 130 (22.6) 212 (36.9) 123 (21.4) 86 (15.0)	6 (3.7) 41 (25.0) 71 (43.3) 36 (22.0) 10 (6.1)	24 (7.0) 124 (35.9) 143 (41.4) 36 (10.4) 18 (5.2)	59.914	<0.001**

Continued…

Consumption of local foods[b]	Daily (6-7 times a week)	160 (31.3)	41 (29.5)	74 (25.2)	
	Weekly (1-5 times a week)	310 (60.7)	79 (56.8)	191 (65.0)	7.328	0.120
	3 times a month or less	41 (8.0)	19 (13.7)	29 (9.9)	
	Never	-	-	-	
Consumption of organic foods[b]	Weekly (1-5 times a week)	132 (26.6)	31 (22.1)	65 (28.5)	
	3 times a month or less	200 (40.3)	54 (38.6)	112 (39.2)	
	Never	109 (22.0)	40 (28.6)	90 (31.5)	12.327	0.055
	Daily (6-7 times a week)	99 (18.3)	24 (15.4)	45 (14.0)	
Consumption of functional foods[b]	Weekly (1-5 times a week)	224 (41.5)	56 (35.9)	120 (37.3)	
	3 times a month or less	136 (25.2)	39 (25.0)	99 (30.7)	
	Never	81 (15.0)	37 (23.7)	58 (18.0)	11.945	0.063
	Daily (6-7 times a week)	30 (5.4)	9 (5.7)	27 (8.1)	
Consumption of foods and/or supplements for weight loss[b]	Weekly (1-5 times a week)	104 (18.7)	21 (13.2)	91 (27.4)	
	3 times a month or less	116 (20.8)	44 (27.7)	84 (25.3)	29.783	<0.001**
	Never	307 (55.1)	85 (53.5)	130 (39.2)	
Media influence on food choices	Sometimes to Always	201 (35.0)	56 (34.1)	134 (34.3)	
	Rarely	258 (44.9)	72 (43.9)	169 (49.0)	11.360	0.023*
	Never	115 (20.0)	36 (22.0)	42 (12.2)	

Significance level: *$p \leq 0.05$; **$p \leq 0.01$
[a]Category "other" excluded for chi-square analysis
[b]Category "not sure" excluded for chi-square analysis

Factors Associated with Body Satisfaction

   Body Weight Satisfaction. Eight out of eleven factors were significant (Table 4.6): DWC [*Welch* (2, 296)= 264.390, p< 0.001], average daily appearance stress [*Welch* (2, 330)= 113.398, p< 0.001], importance of overall appearance [*F* (2, 1080)= 3.853, p= 0.022], healthiness of diet [*Welch* (2, 320)= 54.657, p< 0.001], importance of availability of current information about food choices and body image [*Welch* (2, 325)= 9.441, p< 0.001], importance of current food and drink to body image [*Welch* (2, 311)= 4.065, p= 0.018], importance of current food and drink to overall appearance [*Welch* (2, 297)= 4.435, p= 0.015], and importance of body work practices to self-esteem [*Welch* (2, 314)= 6.609, p= 0.002]. Differences between factors for body weight satisfaction are exemplified using Tukey as well as Games-Howell post-hoc results (Table 4.7). Each factor mean compares one satisfaction category to another and significant results are noted.

Table 4.6. Significant One-Way ANOVA with Body Weight Satisfaction

Factor	df	Test statistic	p–value
DWC (in lbs)	2, 296	264.390[a]	<0.001**
Average daily appearance stress	2, 330	113.398[a]	<0.001**
Importance of overall appearance	2, 1080	3.853[b]	0.022*
Healthiness of diet	2, 320	54.657[a]	<0.001**
Importance of availability of current information about food choices and body image	2, 325	9.441[a]	<0.001**
Importance of current food and drink to body image	2, 311	4.065[a]	0.018*
Importance of current food and drink to overall appearance	2, 297	4.435[a]	0.015*
Importance of body work practices to self-esteem	2, 314	6.609[a]	0.002**

[a]Welch test statistic
[b]F statistic
Significance level: *p≤0.05; **p≤0.01

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Table 4.7. Post-Hoc Results for Factors Associated with Body Weight Satisfaction

Factor	Level of Satisfaction	Comparison Group	Mean ± SE	p-value	95% CI
DWC (in lbs)[a]	Satisfied	Neutral	-14.095 ± 1.867	<0.001**	-18.52 – -9.67
		Dissatisfied	-31.768 ± 1.418	<0.001**	-35.10 – -28.44
	Neutral	Dissatisfied	-17.673 ± 2.227	<0.001**	-22.92 – -12.42
Average daily appearance stress[a]	Satisfied	Neutral	-7.427 ± 2.412	0.007**	-13.13 – -1.73
		Dissatisfied	-23.891 ± 1.595	0.007**	-27.64 – -20.15
	Neutral	Dissatisfied	-16.464 ± 2.436	<0.001**	-22.22 – -10.71
Importance of overall appearance[b]	Satisfied	Neutral	6.475 ± 2.378	0.018*	0.89 – 12.06
		Dissatisfied	0.818 ± 1.480	0.845	-2.66 – 4.29
	Neutral	Dissatisfied	-5.657 ± 2.264	0.034*	-10.97 – -0.34
Healthiness of diet[a]	Satisfied	Neutral	9.758 ± 1.997	<0.001**	5.04 – 14.48
		Dissatisfied	12.658 ± 1.227	<0.001**	9.78 – 15.54
	Neutral	Dissatisfied	2.901 ± 1.992	0.315	-1.81 – 7.61
Importance of availability of current information about food choices and body image[a]	Satisfied	Neutral	-2.052 ± 2.672	0.723	-8.35 – 4.25
		Dissatisfied	-7.738 ± 1.877	<0.001**	-12.15 – -3.33
	Neutral	Dissatisfied	-5.686 ± 2.415	0.051	-11.40 – 0.02
Importance of current food and drink to body image[a]	Satisfied	Neutral	1.864 ± 2.674	0.765	-4.44 – 8.17
		Dissatisfied	-3.730 ± 1.759	0.086	-7.86 – 0.40
	Neutral	Dissatisfied	-5.594 ± 2.418	0.057	-11.31 – 0.13
Importance of current food and drink to overall appearance[a]	Satisfied	Neutral	4.300 ± 2.679	0.246	-2.03 – 10.63
		Dissatisfied	-2.525 ± 1.596	0.254	-6.27 – 1.22
	Neutral	Dissatisfied	-6.825 ± 2.462	0.017*	-12.65 – -1.00
Importance of body work practices to self-esteem[a]	Satisfied	Neutral	0.232 ± 3.331	0.997	-7.63 – 8.10
		Dissatisfied	-6.955 ± 2.119	0.003**	-11.93 – -1.98
	Neutral	Dissatisfied	-7.186 ± 3.120	0.058	-14.57 – 0.19

[a]Games-Howell post-hoc
[b]Tukey post-hoc
Significance level: *p≤0.05; **p≤0.01

Overall Appearance Satisfaction. Eight out of the eleven factors were significant (Table 4.8): DWC [*Welch* (2, 372)= 97.037, p< 0.001], age in 2015 [*F* (2, 1080)= 4.947, p= 0.007] average daily appearance stress [*Welch* (2, 417)= 150.875, p< 0.001], importance of overall appearance [*F* (2, 1080)= 3.916, p= 0.020], healthiness of diet [*Welch* (2, 409)= 53.747, p< 0.001], importance of nutrition in healthy aging [*Welch* (2, 405)= 4.498, p= 0.012], importance of availability of current information about food choices and body image [*Welch* (2, 455)= 16.401, p< 0.001], and importance of current food and drink to body image [*Welch* (2, 465)= 5.228, p= 0.006]. Differences between factors for body weight satisfaction are exemplified using Tukey as well as Games-Howell post-hoc results (Table 4.9). Each factor mean compares one satisfaction category to another and significant results are noted.

Table 4.8. Significant One-Way ANOVA with Overall Appearance Satisfaction

Factors	df	Test statistic	p – value
DWC (in lbs)	2, 372	97.037[a]	<0.001**
Age (at the end of 2015)	2, 1080	4.947[b]	0.007**
Average daily appearance stress	2, 417	150.875[a]	<0.001**
Importance of overall appearance	2, 1080	3.916[b]	0.020*
Healthiness of diet	2, 409	53.747[a]	<0.001**
Importance of nutrition in healthy aging	2, 405	4.498	0.012*
Importance of availability of current information about food choices and body image	2, 455	16.401[a]	<0.001**
Importance of current food and drink to body image	2, 465	5.228[a]	0.006**

[a]Welch test statistic
[b]F statistic
Significance level: *p≤0.05; **p≤0.01

Table 4.9. Post-Hoc Results for Factors Associated with Overall Appearance Satisfaction

Factor	Level of Satisfaction	Comparison Group	Mean $\pm$ SE	p-value	95% CI
DWC (in lbs)[a]	Satisfied	Neutral	-11.503 $\pm$ 2.339	<0.001**	-17.02 – -5.98
		Dissatisfied	-27.995 $\pm$ 2.058	<0.001**	-32.83 – -23.16
	Neutral	Dissatisfied	-16.493 $\pm$ 2.893	<0.001**	-23.30 – -9.69
Age in 2015[b]	Satisfied	Neutral	1.028 $\pm$ 0.471	0.074	-0.08 – 2.13
		Dissatisfied	1.013 $\pm$ 0.362	0.014*	0.16 – 1.86
	Neutral	Dissatisfied	-0.015 $\pm$ 0.504	1.000	-1.20 – 1.17
Average daily appearance stress[a]	Satisfied	Neutral	-8.989 $\pm$ 2.092	<0.001**	-13.92 – -4.05
		Dissatisfied	-30.456 $\pm$ 1.752	<0.001**	-34.57 – -26.34
	Neutral	Dissatisfied	-21.467 $\pm$ 2.395	<0.001**	-27.10 – -15.83
Importance of overall appearance[b]	Satisfied	Neutral	5.529 $\pm$ 1.976	0.014*	0.89 – 10.17
		Dissatisfied	1.110 $\pm$ 1.521	0.746	-2.46 – 4.68
	Neutral	Dissatisfied	-4.418 $\pm$ 2.117	0.093	-9.39 – 0.55
Healthiness of diet[a]	Satisfied	Neutral	9.111 $\pm$ 1.690	<0.001**	5.13 – 13.10
		Dissatisfied	13.827 $\pm$ 1.407	<0.001**	10.52 – 17.13
	Neutral	Dissatisfied	4.716 $\pm$ 1.948	0.042*	0.13 – 9.30
Importance of nutrition to healthy aging[a]	Satisfied	Neutral	3.371 $\pm$ 1.193	0.014*	0.56 – 6.18
		Dissatisfied	1.397 $\pm$ 0.861	0.237	-0.63 – 3.42
	Neutral	Dissatisfied	-1.974 $\pm$ 1.304	0.286	-5.05 – 1.10
Importance of availability of current information about food choices and body image[a]	Satisfied	Neutral	-0.684 $\pm$ 2.287	0.952	-6.07 – 4.70
		Dissatisfied	-9.652 $\pm$ 1.771	<0.001**	-13.81 – -5.49
	Neutral	Dissatisfied	-8.969 $\pm$ 2.338	<0.001**	-14.47 – -3.46
Importance of current food and drink to body image[a]	Satisfied	Neutral	1.384 $\pm$ 2.063	0.781	-3.47 – 6.24
		Dissatisfied	-4.500 $\pm$ 1.673	0.020*	-8.43 – -0.57
	Neutral	Dissatisfied	-5.884 $\pm$ 2.119	0.016*	-10.87 – 0.90

[a]Games-Howell post-hoc
[b]Tukey post-hoc
Significance level: *$p \leq 0.05$; **$p \leq 0.01$

Predictors of Body Satisfaction

Two multinomial logistic regression models were developed using a backwards stepwise approach to determine the predictors of overall body satisfaction (Appendices O-P).

The original model with weight satisfaction as the dependent variable included seventeen predictor variables, seven significant (p ≤0.05) variables remained the final model (Table 4.10), which included DWC (p <0.001), average daily appearance stress (p <0.001), importance of overall appearance (p= 0.045), level of education (p= 0.039), self-rated health (p <0.001), dieting behaviour (p= 0.001), and appearance anxiety (p <0.001). Nagelkerke Pseudo R^2 = 0.591, -2logLlikelihood Final Model Intercept= 1256.021. The original model with overall appearance satisfaction as the dependent variable also included seventeen predictor variables and seven significant variables remained in the final model (Table 4.11), which included self-rated health (p <0.001), impact of aging on appearance (p= 0.034), appearance anxiety (p< <0.001), average daily appearance stress (p <0.001), importance of overall appearance (p <0.001), age (p= 0.042), and DWC (p <0.001). Age category was retained in all models to control for its potential confounding effects. Nagelkerke Pseudo R^2= 0.482, -2log Likelihood Final Model Intercept= 1552.906.

Predictors of Body Weight Satisfaction. After holding all other covariates constant, a higher DWC in lbs (gain or lose) decreased a participant's odds of weight satisfaction. For example, someone desiring a 5lbs weight change would decrease their odds of being *satisfied* relative to *dissatisfied* by 46% compared to someone wanting to maintain their weight. Similarly, as daily appearance stress increased, body weight satisfaction decreased. When holding other covariates constant, a 5-unit increase in average daily appearance stress decreased someone's odds of satisfaction by 9.5%. Holding all other covariates constant, someone who scores the importance

of overall appearance five points greater than another individual is 6% more likely to be *satisfied* relative to *dissatisfied* with their body weight. Level of education was a significant predictor overall; however, individual levels did not predict satisfaction relative to dissatisfaction. Holding all other covariates constant, participants who rated their self-rated health as *excellent* compared to *fair/poor* were 7.4 times more likely to be *satisfied* relative to *dissatisfied* with their body weight and these odds decreased with less favourable ratings of self-rated health. Participant who rated their health as *very good* compared to *fair/poor* were 4.9 times more likely to be satisfied and those who rated their health as *good* relative to *fair/poor* were 2.8 times more likely to be *satisfied* relative to *dissatisfied* with their body weight. After holding all other covariates constant, when compared to the reference category *never,* two dieting behaviour categories were significant in predicting weight satisfaction. Keeping all covariates constant, for those who stated they engaged in dieting behaviour *often* and those who engaged *sometimes* had a 59% and 61% respective decrease in being *satisfied* relative to *dissatisfied* with their body weight compared to those who *never* engage in dieting behaviour. Controlling for all other covariates, as appearance anxiety increased from the reference category *rarely to never,* body weight satisfaction decreased. Participants who stated they *sometimes* felt appearance anxiety and those who *frequently* did, were 74% and 87% less likely to report being *satisfied* relative to *dissatisfied* with their body weight.

Table 4.10. Multinomial Logistic Regression Model: Predictors of Body Weight Satisfaction

Predictor "Satisfied" relative to "Dissatisfied"	Unstandardized β	Standard Error	p-value	OR[a] (95% CI[b])	%OR
DWC	-0.124	0.011	<0.001**	0.884 (0.865 – 0.902)	46%[c]
Average daily appearance stress	-0.020	0.005	<0.001**	0.981 (0.971 – 0.990)	9.5%[c]
Importance of overall appearance	0.011	0.005	0.045*	1.011 (1.001 – 1.021)	6.0%[c]
Level of education (ref: Graduate degree – Masters or Doctorate)	-	-	-	-	-
High school or less	0.621	0.388	0.110	1.860 (0.869 – 3.980)	-
Vocational/trade	0.610	0.529	0.249	1.841 (0.653 – 5.194)	-
College (diploma/certificate)	0.371	0.375	0.322	1.449 (0.695 – 3.022)	-
University (Bachelor degree)	0.011	0.369	0.976	1.011 (0.491 – 2.083)	-
Self-rated health (ref: Fair/poor)	-	-	-	-	-
Excellent	2.004	0.503	<0.001**	7.419 (2.766 – 19.900)	-
Very good	1.579	0.458	0.001**	4.850 (1.978 – 11.891)	-
Good	1.026	0.478	0.032*	2.790 (1.094 – 7.114)	-

Continued…

| Predictor | Unstandardized | Standard | p-value | OR[a] | %OR |
"Satisfied" relative to "Dissatisfied"	β	Error		(95% CI[b])	
Dieting behaviour (ref: Never)	-	-	-	-	-
Always	0.495	0.604	0.413	1.641 (0.502 – 5.363)	-
Often	-0.898	0.415	0.030*	0.407 (0.181 – 0.918)	59%[d]
Sometimes	-0.952	0.389	0.015*	0.386 (0.180 – 0.828)	61%[d]
Rarely	-0.170	0.414	0.681	0.843 (0.375 – 1.898)	-
Appearance anxiety (ref: Rarely to never)	-	-	-	-	-
Frequently	-2.001	0.334	<0.001**	0.135 (0.070 – 0.260)	87%[d]
Sometimes	-0.348	0.265	<0.001**	0.260 (0.154 – 0.437)	74%[d]

-2 Log Likelihood (Final) = 1256.021
Pseudo R-square (Nagelkerke) = 0.591

Note: Final model of backwards regression includes those in "Neutral" category
[a]Odds ratio, [b]Confidence interval, [c]Derived from $e^{(undstd. \beta * 5)}$. When Undstd.β is negative, %OR is generated from subtracting the value from 1, [d]Derived from 1-OR
Significance level: *$p \leq 0.05$; **$p \leq 0.01$

Predictors of Overall Appearance Satisfaction. After controlling for covariates as well as the confounding variable age category, someone desiring a 5lbs weight change would have an 11% decrease in odds of being *satisfied* relative to *dissatisfied* with their overall appearance compared to someone who wanted to maintain their body weight. An increase in age by 1 year, decreased someone's odd of being *satisfied* relative to *dissatisfied* with overall appearance by 21% when all other covariates remained constant. Average daily appearance stress and the importance of overall appearance were significant predictors for overall appearance satisfaction in opposite directions. When holding other covariates constant, a 5-point increase in daily appearance stress resulted in a 16% decrease in someone's odds of being *satisfied* with their overall appearance relative to *dissatisfied* and a 5-point increase in importance of overall appearance increased someone's odds of being *satisfied* compared to *dissatisfied* by 14%. When holding all other covariates constant, someone who rated their self-rated health as *excellent* compared to *fair/poor* were 5.9 times more likely to be *satisfied* relative to *dissatisfied* with their overall appearance and those who rated their health as *very good* or *good* were respectively 6.2 and 2.5 times more likely to be *satisfied* compared to *dissatisfied*. The impact of aging on appearance was overall a significant predictor but not for the individual categories *agree* and *neutral* compared to the reference category *disagree* when predicting someone's appearance satisfaction relative to dissatisfaction. An increase in frequency of feeling appearance anxiety resulted in a decrease in overall appearance satisfaction. When controlling for all other covariates, for participants reporting *frequently* feeling appearance anxiety relative to *rarely to never,* their odds of being *satisfied* compared to *dissatisfied* with their overall appearance decreased by 89% and those who reported *sometimes* feeling appearance anxiety, decreased their likeliness of being *satisfied* relative to *dissatisfied* by 67%.

Table 4.11. Multinomial Logistic Regression Model: Predictors of Overall Appearance Satisfaction

Predictor "Satisfied" relative to "Dissatisfied"	Unstandardized B	Standard Error	p-value	OR[a] (95% CI[b])	%OR
Desired weight change	-0.023	0.004	<0.001**	0.975 (0.967 –0.985)	11%[c]
Age in 2015	-0.046	0.033	<0.001**	0.977 (0.969 – 0.985)	21%[c]
Average daily appearance stress	-0.034	0.004	<0.001**	0.967 (0.958 – 0.975)	16%[c]
Importance of overall appearance	0.026	0.005	<0.001**	1.026 (1.016 – 1.036)	14%[c]
Importance of available nutrition information to body image	-0.010	0.004	0.008**	0.990 (0.982 – 0.997)	4.9%[c]
Self-rated health (ref: Fair/poor)	-	-	-	-	-
Excellent	1.773	0.416	<0.001**	5.888 (2.607 – 13.299)	-
Very good	1.826	0.337	<0.001**	6.208 (3.208 – 12.015)	-
Good	0.922	0.337	0.006**	2.514 (1.299 – 4.865)	-
Impact of aging on appearance (ref: Disagree)	-	-	-	-	-
Agree	-0.349	0.267	0.190	0.705 (0.418 – 1.189)	-
Neutral	-0.172	0.267	0.521	0.842 (0.499 – 1.423)	-

Continued…

Predictor "Satisfied" relative to "Dissatisfied"	Unstandardized B	Standard Error	p-value	OR[a] (95% CI[b])	%OR
Appearance anxiety (ref: Rarely to never)	-	-	-	-	-
Frequently	-2.239	0.345	<0.001**	0.107 (0.054 − 0.209)	89%[d]
Sometimes	-1.105	0.319	0.001**	0.331 (0.177 − 0.619)	67%[d]
Age category (ref: born 1946-1955)	-	-	-	-	-
Born 1956-1965	0.461	0.347	0.185	1.585 (0.803 − 3.130)	-
-2 Log Likelihood (Final) = 1552.906					
Pseudo R-square (Nagelkerke) = 0.482					

Note: Final model of backwards regression includes those in "Neutral" category

[a]Odds Ratio; [b]Confidence Interval, [c]Derived from $e^{(undstd. \beta * 5)}$. When Undstd.β is negative, %OR is generated from subtracting the value from 1, [d]Derived from 1-OR

Significance level: *p$\leq$0.05; **p$\leq$0.01

Physical Activity

See Tables 4.2, 4.3 and Appendix M for results related to the following section. Participants rated PA of relatively high importance to overall appearance and body image with a mean score of 77.6 ± 21.7 on a scale from $0 - 100mm$. There was a significant difference in mean scores [t= 2.1 (1081), p= 0.04] by location of residence (urban=78.7 ± 21.1, rural= 75.9 ± 22.4), but not by age category [t= 1.7 (1081), p= 0.093]. Over 75% of participants identified that their participation in PA had changed with age, with little variation by age category or location of residence. Among those who did identify a change in PA with age, open-ended responses fit into four themes (Appendix Q).

Theme 1- *Increased/More Consistent* (n= 181): more time, retired, children have grown up, health scare or diagnosis of a chronic disease, more dedicated, joined classes/the gym/a sport, want to stay healthy, PA has improved with age, or underwent surgery.

Theme 2 - *Decreased/Lessened or Restricted* (n= 442): less energy, slower, less stamina, lazy/tired, illness/injury/health problems, chronic condition or disease, pain, surgery, fat or have gained weight, retired from an active job, decreased strength and/or flexibility compared to younger days, aging, have less time, no motivation or interest anymore, worried about a fall or injury, moved to smaller living space, or less bladder control.

Theme 3 - *Change in Type of Activity* (n= 143): change in intensity, impact, competition, and vigour. Some participants identified walking instead of running, participating in more "joint friendly activities" such as swimming, cycling, aqua-fit, and yoga, whereas others participated in more intense types of activities and joined new classes or started new sports.

Theme 4 - *Other* (n=81): listing a specific activity, "walking", "yoga", "seniors exercise program and mall walking", but without specification of the change in frequency or type of activity,

wanting to become more physically active or needing to be more active, or a change in capability.

Discussion

The objective of the current study was to examine body image satisfaction, weight attitudes, and aging concerns of BBW residing in rural and urban Manitoban communities. With body image research focusing mainly on younger women, body image and aging concerns of BBW are underrepresented and there are no studies which look at BBW as an independent cohort with respect to these issues.

In this study, body weight satisfaction and overall appearance satisfaction were used to assess body satisfaction and it is evident that BD is an issue for these BBW. Even though over half our participants were satisfied with their overall appearance and rated the importance of appearance as fairly important, approximately only one-third of women were satisfied with their body weight and an astounding 91% desired to lose an average of 30lbs. The degree of DWC also varied by satisfaction category for both weight and appearance satisfaction. For women in this study, as satisfaction level moved from *satisfied* to *neutral* and *dissatisfied*, a greater amount of weight loss was desired. These findings are in agreement with BD and weight loss trends found by Marshall (2014); however, greater weight loss and lower percentages of appearance and body weight satisfaction were observed among our study participants. Similarly, Gagne et al. (2012) found that three-quarters of participants (aged 50 and older) were trying to lose weight. Other studies have found weight to be the greatest concern of women regardless of age (Hurd, 2000) and that it is an important characteristic related to a woman's attractiveness (Kozar & Damhorst, 2009). We found DWC to be a predictor of body satisfaction and that YBBW desired to lose significantly more weight than OBBW. A significant difference in weight loss was not

evident among rural and urban participants. These findings contradict previous noted by

Marshall (2014), who saw a decrease in desired weight loss with an increase in age. Our findings

support our guiding framework (objectification theory) and the literature suggesting the power

societal messages have, which correlate women's worth to being thin and youthful (Bedford &

Johnson, 2006; Wilcox, 1997; Hurd Clarke & Griffin, 2008; Levine, 2009). It has been

postulated that appearance satisfaction remains stable across the lifespan (de Souto Barreto et al.,

2011; Grippo & Hill, 2008; Hurd, 2000), but present study findings again contradict this, as age

was predictive of overall appearance satisfaction. Here, women decreased their odds of

appearance satisfaction for every year they aged. This was a novel finding as bivariate analysis

was indicative of improving overall appearance satisfaction with age, as a higher percentage of

OBBW were satisfied with their overall appearance than YBBW. Variation in analysis may

potentially be attributed to only half of participants reporting satisfaction with their overall

appearance.

Overall, participants were sometimes stressed about their appearance and YBBW

identified significantly more appearance stress than OBBW. Average daily appearance stress was

also predictive of body satisfaction. This indicates that regardless of age, someone who felt more

stressed about their appearance, decreased the likelihood of being satisfied with their body.

These findings also contradict earlier research from Hurd (2000), a study often referenced in the

literature to support the idea that age has a protective effect on BD. However, as the participants

in Hurd (2000) are OBBW and older, caution should be exercised when comparing study

findings and cohort effects should be queried. Women tend to have relatively lower weight

satisfaction compared to other aspects of body image (Sabik & Cole, 2017), which may very

well be related to a desire to meet thin ideals and glorification of youthful beauty even with age.

Media relay strong messages to alter cultural beliefs and suggest ways to defy the

problem of aging (Brown & Knight, 2015). Bedford and Johnson (2006) postulate that media

messages become particularly concerning for women aged 65-75 as signs of aging become more

pronounced. Additionally, newer media sources such as SNS have been shown to lower body

satisfaction because users are able to readily compare themselves to others (Stronge et al., 2015).

Other media sources such as magazines and television often do not accurately depict the aging

process. There is often a lack of older women in the media, and too often age inappropriate

models are used to target women (Hofmeier et al., 2017, Brown & Knight, 2015). In Western

society, women are socially led to strive for a thin body and primed to continue to look young as

they age (Chonody & Teater, 2016; Clarke 2001; 2002; Brown & Knight, 2015). In our study,

over half of participants *sometimes* to *frequently* felt pressure from the media to look a certain

way for acceptance with minimal differences by location of residence but more YBBW than

OBBW responding this way. We did not find media influence on appearance to be a significant

predictor of body satisfaction; however, when Bedford and Johnson (2006) compared young

women (19-25 years old) to older women (70 years and older), media pressure to be thin was the

most significant determinant of BD. Since participant age ranges in the present study did not

directly mirror those in Bedford and Johnson (2006), replication is warranted to examine media

influence as a conclusive predictor in BBW's body satisfaction.

Media is not the only factor that influences women's body perception, as research has

shown appearance pressure or judgement from other individuals (family, friends, co-workers,

stranger, etc.) to affect body satisfaction (Marshall, 2014; Rodgers et al., 2016; Hofmeier et al.,

2017). In this study, just under one-quarter of participants reported feeling appearance pressure

from other people in their lives. Urban and YBBW were more likely to report this than rural and

OBBW. Friends, peers, coworkers, spouse and children were identified as the most noted sources of appearance pressure. Both appearance pressure from others as well as media were associated with body satisfaction. These proportions and associations may be contributing to the notable appearance anxiety felt by over one-third of study participants, and frequency of daily appearance stress. Increased levels of stress have been positively associated with DE (Gadalla, 2008).

DE is prevalent and increasing in Western societies (Urquhart & Mihalynuk, 2011) and regardless of age, DE, dieting behaviour, the use of body work practices, and participation in weight loss programs are common practices defined in the literature to mitigate BD and/or counter the natural aging process (Marshall et al., 2012; Marshall, 2014; Mangweth-Matzek, 2006; Hurd, 2000; Slevec & Tiggemann, 2010). It is also known that weight control practices increase the risk for BD (Bedford & Johnson, 2006). Almost a quarter of our participants followed a formal weight lost program within the last five years and almost three-quarters engaged in dieting behaviours in an effort to lose weight. These findings were not surprising as such a high percentage of participants were dissatisfied with their current body weight and desired to lose weight; however, findings are concerning as both the use of weight loss programs and engagement in dieting behaviour have increased respectively when compared to findings by Marshall (2014). This is speculated to be attributed to an increase in our sample size as well as the widespread usage of SNS by women of all ages (Stonge et al., 2015).

Dieting or altering eating habits to lose weight is common practice in Western society, especially by women (Urquhart & Mihalynuk, 2011). Over half of the participants in this study restricted intake of particular foods in an effort to look better, consistent with 56% of Mangweth-Matzek et al.'s (2006) participants. Themes that were concerning from a nutritional standpoint

included: restricting dairy, all carbohydrates, as well as meat. Women over 50 have increased

calcium requirements, and dairy products remain one of the best sources to acquire this mineral

and in conjunction with adequate vitamin D (also found in fortified dairy beverages) help to

prevent osteoporosis (Osteoporosis Canada, n.d.). Indigestible carbohydrates known as fibre is

found in plant-based foods such as fruits, vegetables, and grain products and play an important

role in digestive health and in the prevention of certain types of cancers (Mahan, Escott-Stump,

& Raymond, 2012, p. 286). Additionally, as individuals age, muscle mass is lost at a rate of 1%

per year (Keller, 2013). Meat products are high in protein and vitamin B_{12} which aid in muscle

mass maintenance and anemia prevention (Gropper & Smith, 2013). Restriction of any of these

food groups or nutrients poses the risk for nutrient deficiencies and/or development of disease or

illness if not adequately supplemented.

Forty-six percent of participants in our study used anti-aging products at least three times

a week and the exact same percentage identified that they were worried about the impact of

aging on their appearance. This agrees with the literature which states that aging anxiety was

predictive of anti-aging product purchasing (Muise & Desmarais, 2010). Other body work

practices our participants engaged in to alter or enhance appearance included: wearing make-up,

using esthetic services, and wearing shape forming undergarments. These types of practices were

consistent with those discussed in the literature (Marshall, 2014; Hurd Clarke & Bundon, 2009;

Hurd Clarke & Korotchenko, 2010; Bedford & Johnson, 2006). At a lower frequency, our

participants considered more drastic body work practices such as surgical procedures and non-

surgical procedures such as Botox injections or liposuction, which warrants further investigation

as we found almost half of our participants to worry about the impact of aging on their

appearance, an issue Slevec and Tiggemann (2010) identified as a predictor for cosmetic surgery.

We also found that body work practices used by our participants decreased by 5-10% when comparing rural participants to urban participants, suggesting rural residents either do not feel as much social comparison because they live in a less dense population or perhaps social norms still vary slightly based on location of residence.

The discrepancy between internal shifts toward not caring about social expectations related to appearance but yet still feeling challenged to adhere regardless of age is not uncommon among middle-aged and older women (Hofmeier et al., 2017). In a study by Hofmeier et al. (2017), women asserted that priorities may shift toward body functionality; however, this is not to imply that appearance is no longer important, something identified by previous researchers as well (Hurd, 2000). In addition, studies have shown that satisfaction with appearance is positively associated with one's functional ability (de Souto Barreto et al., 2011). Although both urban and rural participants found PA to be very important to their appearance and body image, more participants identified a decrease in their PA level with age. The prioritization of health over appearance among older women's experiences is documented in the literature (Hurd, 2000; Hofmeier et al., 2017). Self-rated health was high amongst our participants, as the vast majority reported their health as *good*, *very good*, or *excellent* in comparison to others their age with little variation by age category or location of residence. A poorer rating of self-rated health was significantly associated with a decrease in weight satisfaction as well as overall appearance and was a predictive factor for body satisfaction, findings which concur with de Souto Barreto et al. (2011).

Limitations

This study is limited by its convenience and snowball sampling techniques used to recruit most participants; therefore, a random sample was not generated and results may not be

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representative or generalizable to all BBW. Additionally, a sampling bias is likely, meaning that women who expressed interest in participating may have had pre-existing interest in or experience with eating issues or body perceptions, potentially skewing our results in favour of greater BD among our sample compared to BBW in general. Only females were selected for our study thus excluding baby boomer men, whom may have provided interesting insight into gender differences related to body satisfaction and related concerns of the entire baby boomer cohort. Moreover, the majority of study participants identified as North American and; therefore, likely Caucasian, misrepresenting minority groups and Indigenous women.

Conclusion

There needs to be more action to support positive body image for aging women and advocacy to change negative media messages regarding women's beauty. Change is not simple, nor does it happen quickly. Results of the present study support the developing body of literature articulating the prevalence of BD in women over 50 (Mangweth-Matzek et al., 2006; Marshall, 2014; Bedford & Johnson, 2006; Grippo & Hill, 2008; Liechty, 2012) and uniquely examines body image perceptions, weight attitudes, and aging concerns of BBW. Since little has evolved by evidence in the literature, more research is warranted to turn this foundational knowledge into action by way of development of screening and assessment tools to ensure every woman suffering from BD is being provided with the necessary help they deserve.

CHAPTER 5

EXPLORING FOOD CHOICES OF BABY BOOMER WOMEN IN MANITOBA

Introduction

Food is central to our lives both physically and mentally (Kerton & Sinclair, 2010). As a result of the 'anti-aging' movement and an increased awareness of health, beauty, and disease prevention, consumers are becoming more conscious of their food choices and turning toward healthy food products as a means of promoting quality of life and longevity (Siro, Kapolna, & Lugasi, 2008; Agriculture and Agri-Food Canada, 2011; 2014a-b; Hasler, 2002). The consumption of locally produced, organic, and functional foods (products with added benefits besides basic nutrition) have been substantially increasing among Canadians over the last decade (Agriculture and Agri-Food Canada, 2011; 2014a-b; Barton, Blinder, Cumella, Edward & Sanathara, 2006; Ares, Gimenez, & Gambaro, 2008; Labrecque, Doyon, Bellavance, & Kolodinsky, 2006; Kerton & Sinclair, 2010). Research has demonstrated that women (Pelletier et al., 2002; Childs, 1997), individuals over 45 years of age, (Pelletier et al., 2002), and those with a higher level of knowledge (Labrecque et al., 2006; Ares et al., 2008; Childs, 1997) are more likely to purchase functional foods and products touted as having special health benefits. According to more recent publications, baby boomers are substantially shaping Canadian food trends (Agriculture and Agri-Food Canada, 2011; 2014a-b; 2015), which appears to be largely due to their inherent interest and perceptions of health and well-being; their food and weight attitudes; as well as their eating behaviours (Agriculture and Agri-Food Canada, 2011; 2015). As women continue to remain the primary household food providers (Colatruglio & Slater, 2014), they will further drive food processors and developers to re-evaluate their foci on food product

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development and marketing strategies to meet the needs and nutritional demands of this distinctive cohort (Bech-Larsen & Scholderer, 2007). The current body of literature is inconclusive with respect to food choices of BBW who continue to hold great buying power in today's economy. Additionally, BBW's attitudes and feelings surrounding food trends (i.e., the interest in purchasing local, organic or functional foods) is limited.

The research objectives of this study were to examine eating behaviours and factors that may influence food choices and preference for local, organic, and functional food products, and to determine the availability and opinions related to community services among BBW residing in rural and urban Manitoban communities.

Methods

Study Design

Participants. A total of 1248 BBW (individuals born between 1946 and 1965) from both rural and urban MB agreed to participate in this study and 1083 completed the "Body Image and Food Choice Survey" (n= 1075, online; n= 8, mail-out), resulting in a completion rate of 86.6%. A total of four strata of BBW from MB were represented: 1) rural YBBW, 2) rural OBBW, 3) urban YBBW, 4) urban OBBW.

Recruitment Procedures. A variety of recruitment techniques were used to include BBW from both rural and urban MB. PRA, a client-focused research company located in Winnipeg, MB, phoned households from their database while following a recruitment script prepared by our research team. This script included details about participant eligibility and the study protocol. During the phone calls, participants were able to ask questions and decide whether they wanted to participate in the study. If they agreed, they provided the recruiter with their contact information (email address or phone number, if an email was not available) for future survey

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distribution and communications. Additional recruitment efforts were also made by Lengyel's

Research Team made up of: the researchers, the Manitoba Women's Institute, Agape Table, and

University College of the North. Recruitment efforts via word of mouth, phone calls, email

communications, SNS (e.g., Facebook®), and recruitment poster distribution to a variety of

environments and organizations (e.g., community/recreation centers, retirement communities,

grocery stores, and university campuses) were also completed. All recruited participants were

contacted via phone or email by the researchers prior to the release of the online survey

describing the study, details about the process, and to allow for an opportunity to ask any

questions.

Survey Design and Development. The survey used in this study was adapted from Marshall

(2014) and contained a combination of 46 MC, open-ended, and VAS questions, which aimed to

investigate demographic information; self-rated body satisfaction and health; eating habits; body

work practices; aging concerns; associations and predictors of BD; food choices; and access to

community nutrition services for BBW residing in MB. PRA assisted with edits to the revised

survey and it was pretested numerous times by BBW, nutrition faculty and students, PRA, and

research staff to assess understandability, flow, and online usability.

Data Collection Procedures. The survey was completed by participants using FluidSurveys™, a

secure, online survey administration and data collection service with servers located in Canada.

The survey was launched in November 2015 and participants were allowed two weeks to

complete the survey with a reminder of the closing date seven days prior to its close. Only

individuals who were recruited were able to access the online survey and all participants were

required to provide consent. For participants using FluidSurveys™, they were automatically

guided to a consent form in which they were able to agree or not agree to the conditions of the

study. When consent was granted, participants had online access to the survey. For the mail-out surveys, all participants were instructed to complete and sign a consent form which was returned in a separate envelope from the survey to allow for participant anonymity. The survey took approximately 25 minutes to complete and anyone who completed it was entered to win one of twenty-five Visa® gift cards and/or the early bird prize, an iPad mini as incentive for completing the survey within the first week. Ethical approval to conduct this study was received from the University of Manitoba Joint-Faculty Research Ethics Board (Protocol #J2015:040).

Data Entry and Cleaning. Online survey data was received from PRA. Data cleaning as well as manual entry of mail-out survey responses was completed. N Hawrylyshen verified manually entered data and measured VAS responses (to the mm) of mail-out surveys and entered data. All "other" responses to MC questions were reviewed and when required participant responses were recoded. For example, when asked *"What is your current relationship status?"* a participant who wrote "divorced" following their selection of "other" was recoded to survey response "divorced". Similar cleaning was completed for responses to the question, *"In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?"* Participants were able to respond "yes", "no" or "don't know" and provide examples for the "yes" or "no" responses. Due to the design of this question, there were participants who answered "no", but in the follow up section wrote "I don't know" in order to provide suggestions for community services that were needed. In these situations, survey answers were recoded to "I don't know" to ensure response accuracy.

Data Analysis

Study Variables. A table of recoded and new variables can be found in Appendix E. Three overarching groups were used to summarize the variables used for this study. See previous manuscript (Chapter 4) for variable lists.

Food choices. Four survey questions determined food choice selection and frequency of consumption by participants. The questions asked how frequently local, organic, or functional foods were used or consumed. An additional question asked how frequently participants used foods or supplements which claimed to aid in weight loss.

Analysis Techniques. Both descriptive and inferential statistical analyses were carried out using SPSS version 24.0 for Windows (IBM Corporation, 2016).

Descriptive statistics. Frequencies, percentages, means, and standard deviations were conducted. Additionally, figures and organization of open-ended question responses were computed and tallied. Raw data tables and figures can be found in Appendices G-J.

VAS questions were measured on a 100-mm scale and divided into four quartiles anchored by Never Stressed – Very Stressed, Not Important – Very Important, or Not Healthy – Very Healthy, depending on the specific scale used for each VAS question. Measurements were automatically completed for online surveys and manually for paper copies. Means and standard deviations were calculated.

Thematic analysis, the process for identifying, analyzing, and reporting patterns (themes) within data (Braun & Clarke, 2006) was used to code open-ended survey questions. Thematic analysis was manually completed by N Hawrylyshen and one other coder from the research team. The process of thematic analysis described by Braun and Clarke (2006) was used to guide the process. An inductive, data-driven approach to creating themes was taken, whereby themes

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that naturally emerged from the data were written out, categories were then created and collapsed until all participant responses fit. Thematic coding of "yes" or "no" responses were completed for the question: *"In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?"* Disagreements and uncertainties between coders were resolved through in-person discussions.

Inferential statistics. Chi-square tests were used to determine associations between food choices and other categorical variables and significance was accepted at $p \leq 0.05$ (two-tailed). To meet the assumption that all expected cell counts were ≥ 5, original variable categories were collapsed when necessary. Where the category "other" was present, it was excluded from chi-square analyses as the previous assumption was violated. Similarly, for frequency of use of food choices, the category "not sure" was also excluded, as the interpretation of this category was not clear; therefore, inferences about these responses could not be made. Independent Samples t-tests were used to compare means, and significance was considered at $p \leq 0.05$ (two-sided).

Results

Participant Characteristics

Participants were BBW from urban (62.4%) or rural (37.7%) MB. The sample was approximately half OBBW (50.5%) and half YBBW (49.5%). Mean age was 60 ± 5.3 years. The majority (66.2%) of participants reported they were married, 73.9% identified their ethnic background as North American, and 4.1% identified as Aboriginal or Indigenous. Sixty-three percent of participants earned an annual household income $\geq$\$60,000, and 31.0% lived alone or with one other person (45.7%). Overall, 87.5% reported their self-rated health as either *good*, *very good* or *excellent*, when compared to others their age. Additional demographic information can be found in Chapter 4.

Tables 5.0 and 5.1 summarize food choice and community service opinions of study participants. For t-tests conducted refer to Appendix L. The majority of participants (96.2%) prepare their own meals, 65.9% prepare meals for a spouse or common-law partner, and 22.3% for children. Only 8.0% of OBBW reported preparing meals for children daily compared to 37.0% of YBBW. Twenty-six percent of urban and 17.0% of rural participants report meal preparation for children. Overall, participants reported their diet as fairly healthy (M= 69.6 $\pm$ 20.4). Appendix M categorizes the VAS results into quartiles for interpretations of means. OBBW reported a healthier diet (M= 70.85 $\pm$ 20.8) than YBBW (M= 68.24 $\pm$ 19.9) [t= 2.112, (1081), p= 0.035], no difference by location of residence [t= 1.563, (1081), p= 0.118]. Nutrition was very important to healthy aging by participants (M= 90.8 $\pm$ 12.5), with no difference by age category or location of residence (p= 0.319, p= 0.996 respectively). Similarly, food and drink choices were fairly important to both body image (M= 69.5 $\pm$ 25.4) and overall appearance (M= 73.4 $\pm$ 23.0), no differences by age category or location of residence.

Table 5.0. Opinions on Food Choices and Community Services

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Who regularly prepares <u>your</u> meals (at least once per day)?[c]	% (n)	% (n)	% (n)
Myself	96.2 (1042)	97.1 (532)	95.3 (510)
Spouse or common-law partner	21.1 (228)	18.2 (100)	23.9 (128)
Roommate	0.2 (2)	0.2 (1)	0.2 (1)
Children	2.7 (31)	1.8 (10)	5.9 (21)
Grandchildren	0.0 (0)	0.0 (0)	0.0 (0)
Parents	0.5 (5)	0.0 (0)	0.9 (5)
Grandparents	0.0 (0)	0.0 (0)	0.0 (0)
Friends	0.4 (4)	0.2 (1)	0.6 (3)
Community members	0.09 (1)	0.0 (0)	0.2 (1)
Other	1.8 (20)	2.0 (11)	1.7 (9)
Who <u>do you</u> regularly prepare meals for (at least once per day)?[c]	% (n)	% (n)	% (n)
Myself	82.1 (899)	81.8 (448)	84.3 (451)
Spouse or common-law partner	65.9 (714)	63.0 (345)	69.0 (369)
Roommate	0.7 (8)	0.9 (5)	0.8 (3)
Children	22.3 (242)	8.0 (44)	37.0 (198)
Grandchildren	4.1 (44)	4.9 (27)	4.8 (17)
Parents	1.9 (21)	1.3 (7)	2.6 (14)
Grandparents	0.09 (1)	0.0 (0)	0.2 (1)
Friends	1.1 (12)	1.5 (8)	0.7 (4)
Community members	0.4 (4)	0.4 (2)	0.4 (2)
Other	3.3 (36)	3.6 (20)	3.0 (16)
Healthiness of diet *(VAS[d] question range 0-100)*			
Mean (SD)	69.6 (20.4)	70.1 (20.8)	68.3 (19.9)
Range	1 – 100	1 – 100	1 – 100

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Importance of nutrition to healthy aging			
(VAS[d] question range 0-100)			
Mean (SD)	90.8 (12.5)	90.4 (13.1)	91.1 (12.0)
Range	17 – 100	17 – 100	39 – 100
Consumption of local foods	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	25.4 (275)	30.2 (165)	20.5 (110)
Weekly (1-5 times a week)	53.6 (580)	49.2 (269)	58.0 (311)
3 times a month or less	8.2 (89)	7.3 (40)	9.2 (49)
Never	0.0 (0)	0.0 (0)	0.0 (0)
Not sure	12.8 (139)	13.3 (73)	12.3 (66)
Consumption of organic foods	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	8.2 (89)	9.5 (52)	6.9 (37)
Weekly (1-5 times a week)	21.1 (228)	21.6 (118)	20.5 (110)
3 times a month or less	33.8 (366)	33.1 (181)	34.5 (185)
Never	22.1 (239)	20.3 (111)	23.9 (128)
Not sure	14.9 (161)	15.5 (85)	14.2 (76)
Consumption of functional foods	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	15.5 (168)	17.2 (94)	13.8 (74)
Weekly (1-5 times a week)	36.9 (400)	36.6 (200)	37.3 (200)
3 times a month or less	25.3 (274)	25.0 (137)	25.6 (137)
Never	16.3 (176)	14.8 (81)	17.7 (95)
Not sure	6.0 (65)	6.4 (35)	5.6 (30)
Consumption of foods and/or supplements for weight loss	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	6.1 (66)	6.9 (38)	5.2 (28)
Weekly (1-5 times a week)	19.8 (215)	18.8 (103)	20.9 (112)
3 times a month or less	22.5 (244)	24.1 (132)	20.9 (112)
Never	48.3 (523)	46.2 (253)	50.2 (270)
Not sure	3.2 (35)	3.8 (21)	2.6 (14)

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Media influence on food choices	% (n)	% (n)	% (n)
Sometimes to Always	36.0 (390)	34.1 (187)	38.0 (203)
Rarely	46.2 (500)	47.3 (259)	45.0 (241)
Never	17.8 (193)	18.6 (102)	17.0 (91)
Other's influence on food choices	% (n)	% (n)	% (n)
Yes	57.1 (618)	53.3 (292)	60.9 (326)
No	42.9 (465)	46.7 (255)	39.1 (210)
Who influences your food choices?[e]	% (n)	% (n)	% (n)
Friends	34.6 (214)	33.2 (97)	35.9 (117)
Coworkers	11.7 (72)	6.8 (20)	16.0 (52)
Peers	5.0 (31)	3.8 (11)	6.1 (20)
Spouse	58.1 (359)	56.5 (165)	59.5 (194)
Parent(s)	6.3 (39)	2.1 (6)	10.1 (33)
Children	47.6 (294)	38.0 (111)	56.1 (183)
Other family members	22.7 (140)	22.3 (65)	23.0 (75)
Other	7.8 (48)	8.6 (25)	7.1 (23)
Importance of information about food choices and body image *(How important to you is the availability of current information about food choices and body image?)* *(VAS[d] question range 0-100)*			
Mean Level of Importance (SD)	62.1 (27.2)	61.2 (27.1)	62.9 (27.2)
Range	1 – 100	1 – 100	1 – 100
Importance of current food and drink to body image *(VAS[d] question range 0-100)*			
Mean level of importance (SD)	69.6 (25.2)	68.6 (25.6)	70.6 (24.8)
Range	1 – 100	1 – 100	1 – 100

Continued…

Variable	Total Participants n= 1083	OBBW[a] n= 547	YBBW[b] n= 536
Importance of current food and drink to overall appearance *(VAS[d] question range 0-100)*			
Mean level of importance (SD)	73.5 (23.1)	72.7 (24.0)	74.2 (22.3)
Range	1 – 100	1 – 100	1 – 100
Available community nutrition services *(In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?)*	**% (n)**	**% (n)**	**% (n)**
Yes	22.2 (240)	24.3 (133)	20.0 (107)
No	8.1 (88)	7.3 (40)	9.0 (48)
Don't Know	69.7 (755)	68.4 (374)	71.1 (381)

[a]Born between 1946-1955 (60-69 years of age)

[b]Born between 1956-1965 (50-59 years of age)

[c]Multiple response question– participants selected all responses that applied, % is calculated by dividing row values by column totals

[d]VAS ranges from 0 ("not healthy" – "very healthy") – 100 ("extremely stressed" or "very important")

[e]Multiple response question only answered by participants who answered yes to the previous question ("Are there people that influence your food choices?") – Participants selected all responses that applied, % is calculated by dividing total row values by column totals (total participants= 618, total OBBW= 292, total YBBW= 326). Results are an estimate as equal weight among categories is unlikely.

Table 5.1. Comparison of Opinions on Food Choices and Community Services by Age Category and Location of Residence

Variable	Urban[a]			Rural[b]		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Who regularly prepares <u>your</u> meals (at least once per day)?[e]	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Myself	95.4 (645)	96.4 (323)	94.4 (322)	97.5 (397)	98.1 (209)	97.0 (188)
Spouse or common-law partner	21.6 (146)	16.5 (55)	26.7 (91)	20.1 (82)	21.1 (45)	19.1 (37)
Roommate	0.1 (1)	0.0 (0)	0.3 (1)	0.2 (1)	0.5 (1)	0.0 (0)
Children	3.0 (20)	2.1 (7)	3.8 (13)	2.7 (11)	1.4 (3)	4.1 (8)
Grandchildren	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Parents	0.7 (5)	0.0 (0)	1.5 (5)	0.0 (0)	0.0 (0)	0.0 (0)
Grandparents	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Friends	0.4 (3)	0.3 (1)	0.6 (2)	0.2 (1)	0.0 (0)	0.5 (1)
Community members	0.1 (1)	0.0 (0)	0.3 (1)	0.0 (0)	0.0 (0)	0.0 (0)
Other	2.1 (14)	2.7 (9)	1.5 (5)	1.5 (6)	0.9 (2)	2.1 (4)
Who <u>do you</u> regularly prepare meals for (at least once per day)?[e]	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Myself	82.1 (555)	80.0 (268)	84.2 (287)	84.5 (344)	84.5 (180)	84.5 (164)
Spouse or common-law partner	58.8 (396)	55.4 (185)	61.9 (211)	78.1 (318)	75.1 (160)	81.4 (158)
Roommate	0.9 (6)	0.9 (3)	0.9 (3)	0.5 (2)	0.9 (2)	0.0 (0)
Children	25.6 (173)	10.4 (35)	40.5 (138)	17.0 (69)	4.2 (9)	30.9 (60)
Grandchildren	4.1 (28)	5.4 (18)	2.9 (10)	3.9 (16)	4.2 (9)	3.6 (7)
Parents	2.2 (15)	1.2 (4)	3.2 (11)	1.5 (6)	1.4 (3)	1.5 (3)
Grandparents	0.1 (1)	0.0 (0)	0.3 (1)	0.0 (0)	0.0 (0)	0.0 (0)
Friends	0.9 (6)	1.2 (4)	0.6 (2)	1.5 (6)	1.9 (4)	1.0 (2)
Community members	0.4 (3)	0.3 (1)	0.6 (2)	0.2 (1)	0.5 (1)	0.0 (0)
Other	3.0 (20)	3.3 (11)	2.6 (9)	3.9 (16)	4.2 (9)	3.6 (7)
Healthiness of diet *(VAS[f] question range 0-100)*						
Mean (SD)	68.9 (20.4)	69.8 (20.1)	68.0 (19.9)	70.8 (20.3)	72.6 (20.7)	68.9 (19.8)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100

Continued…

Variable	Urban			Rural		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Importance of nutrition to healthy aging						
(VAS[f] question range 0-100)	90.8 (12.4)	90.6 (27.1)	90.9 (12.4)	90.8 (12.8)	90.1 (14.0)	91.5 (11.3)
Mean (SD)	20 – 100	20 – 100	44 – 100	17 – 100	17 – 100	39 – 100
Range						
Consumption of local foods	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	18.3 (124)	22.4 (75)	14.4 (49)	37.1 (151)	42.3 (90)	31.4 (61)
Weekly (1-5 times a week)	57.1 (386)	52.5 (176)	61.3 (209)	47.7 (194)	43.6 (93)	52.1 (101)
3 times a month or less	9.3 (63)	8.7 (29)	10.0 (34)	6.4 (26)	5.1 (11)	7.7 (15)
Never	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Not sure	15.2 (103)	16.4 (55)	14.4 (49)	8.8 (36)	8.9 (19)	8.8 (17)
Consumption of organic foods	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	5.8 (39)	6.3 (21)	5.3 (18)	12.3 (50)	14.6 (31)	9.8 (19)
Weekly (1-5 times a week)	21.9 (148)	22.8 (76)	21.1 (72)	19.6 (80)	20.2 (43)	19.0 (37)
3 times a month or less	35.2 (238)	35.8 (120)	34.6 (118)	31.4 (128)	28.7 (61)	34.5 (67)
Never	22.8 (154)	20.4 (68)	25.2 (86)	20.9 (85)	20.2 (43)	21.6 (42)
Not sure	14.3 (97)	14.9 (50)	13.8 (47)	15.7 (64)	16.4 (35)	14.9 (29)
Consumption of functional foods	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	16.0 (108)	20.0 (67)	12.0 (41)	14.7 (60)	12.7 (27)	17.0 (33)
Weekly (1-5 times a week)	38.5 (260)	38.9 (130)	38.1 (130)	34.4 (140)	33.3 (71)	35.6 (69)
3 times a month or less	24.7 (167)	23.1 (77)	26.4 (90)	26.3 (107)	28.2 (60)	24.2 (47)
Never	16.3 (110)	13.7 (46)	18.8 (64)	16.2 (66)	16.4 (35)	16.0 (31)
Not sure	4.6 (31)	4.5 (15)	4.7 (16)	8.4 (34)	9.4 (20)	7.2 (14)
Consumption of foods and/or supplements for weight loss	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	6.2 (42)	7.5 (25)	5.0 (17)	5.9 (24)	6.1 (13)	5.7 (11)
Weekly (1-5 times a week)	19.9 (134)	19.2 (64)	20.5 (70)	19.9 (81)	18.3 (39)	21.6 (42)
3 times a month or less	21.9 (148)	23.1 (77)	20.8 (71)	23.5 (96)	25.8 (55)	21.1 (41)
Never	48.2 (326)	45.1 (151)	51.3 (175)	48.4 (197)	47.9 (102)	49.0 (95)
Not sure	3.8 (26)	5.1 (17)	2.6 (9)	2.2 (9)	1.9 (4)	2.6 (5)

Variable	Urban			Rural		
	Total n= 676	OBBW[c] n= 334	YBBW[d] n= 342	Total n= 407	OBBW[c] n= 213	YBBW[d] n= 194
Media influence on food choices	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Sometimes to Always	40.0 (270)	38.8 (130)	41.1 (140)	29.4 (120)	26.7 (57)	32.5 (63)
Rarely	43.5 (294)	43.9 (147)	43.1 (147)	50.6 (206)	52.6 (112)	48.5 (94)
Never	16.6 (112)	17.3 (58)	15.8 (54)	19.9 (81)	20.7 (44)	19.1 (37)
Other's influence on food choices	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Yes	58.6 (396)	54.6 (183)	62.5 (213)	54.5 (222)	51.2 (109)	58.2 (113)
No	41.4 (280)	45.4 (151)	37.5 (129)	45.5 (185)	48.8 (104)	41.8 (81)
Who influences your food choices?[g]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Friends	36.7 (146)	33.9 (62)	39.4 (84)	30.6 (68)	32.1 (35)	29.2 (33)
Coworkers	11.4 (45)	6.0 (11)	16.0 (34)	12.2 (27)	8.3 (9)	15.9 (18)
Peers	5.3 (21)	3.8 (7)	6.6 (14)	4.5 (10)	3.7 (4)	5.3 (6)
Spouse	54.5 (216)	54.1 (99)	54.9 (117)	64.4 (143)	60.6 (66)	68.1 (77)
Parent(s)	6.3 (25)	1.1 (2)	10.8 (23)	6.3 (14)	3.7 (4)	8.8 (10)
Children	47.7 (189)	38.8 (71)	55.4 (118)	47.3 (105)	36.7 (40)	57.5 (65)
Other family members	22.0 (87)	20.2 (37)	23.5 (50)	23.9 (53)	26.4 (28)	22.1 (25)
Other	8.3 (33)	8.7 (16)	8.0 (17)	6.8 (15)	8.3 (9)	5.3 (6)
Importance of information about food choices and body image *(How important to you is the availability of current information about food choices and body image?)* *(VAS[f] question range 0-100)*						
Mean level of importance (SD)	62.9 (27.1)	62.4 (27.1)	63.4 (27.1)	60.7 (27.4)	59.3 (27.2)	62.2 (27.5)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100
Importance of current food and drink to body image *(VAS[f] question range 0-100)*						
Mean Level of Importance (SD)	69.5 (25.4)	69.2 (25.3)	69.7 (25.6)	69.8 (24.8)	67.8 (26.1)	72.1 (23.2)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100

Continued…

Variable	Urban			Rural		
	Total **n= 676**	**OBBW[c]** **n= 334**	**YBBW[d]** **n= 342**	**Total** **n= 407**	**OBBW[c]** **n= 213**	**YBBW[d]** **n= 194**
Importance of current food and drink overall appearance *(VAS[f] question range 0-100)*						
Mean Level of Importance (SD)	73.4 (23.0)	72.9 (24.0)	73.9 (22.1)	73.6 (23.3)	72.4 (24.0)	74.9 (22.6)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100
Available community nutrition services *(In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?)*	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Yes	20.1 (136)	20.1 (67)	20.2 (69)	25.6 (104)	31.0 (66)	19.6 (38)
No	4.9 (33)	3.9 (13)	5.8 (20)	13.5 (55)	12.7 (27)	14.4 (28)
Don't Know	75.0 (507)	76.0 (254)	74.0 (253)	60.9 (248)	56.3 (120)	66.0 (128)

[a]Within the Winnipeg perimeter
[b]Within MB, outside the Winnipeg perimeter
[c]Born between 1946-1955 (60-69 years of age)
[d]Born between 1956-1965 (50-59 years of age)
[e]Multiple response question – participants selected all responses that applied, % is calculated by dividing row values by column totals
[f]VAS ranges from 0 ("not healthy" – "very healthy") – 100 ("extremely stressed" or "very important")
[g]Multiple response question only answered by participants who answered yes to the previous question ("Are there people that influence your food choices?") – Participants selected all responses that applied, % is calculated by dividing total row values by column totals (total urban participants= 396, total older urban BBW= 183, total younger urban BBW= 213; total rural participants= 222, total older rural participants = 109, total younger rural participants = 113). Results are an estimate as equal weight among categories is unlikely.

Food Choices

Local Foods. There were no participants who stated they *never* eat local foods and 53.6% selected local food *weekly.* Fifty-three percent of those who consumed local foods *weekly* were YBBW and 60.0% of those who consumed local foods *daily* were OBBW (χ= 15.194, df= 3, p= 0.002). Location of residence was also significantly associated with local food consumption, 54.9% of participants who consumed local foods *daily* were from rural locations, 66.6% of *weekly* consumers, 70.8% of *monthly*, and 74.1% of *not sure* consumers were urban residents (χ= 50.266, df= 3, p <0.001). Furthermore, relationship status (χ= 29.804, df= 9, p <0.001), cigarette smoking status (χ= 14.347, df= 6, p= 0.026), and the impact of aging on appearance (χ= 13.423, df= 6, p= 0.037) were all significantly associated with local food consumption.

Organic Foods. Organic foods were consumed less frequently than local foods, with a frequency of *3 times a month or less* representing the greatest number of participants (33.8%). Location of residence was significantly associated with organic food consumption, with a higher percentage of rural participants (56.2%) selecting organic foods on a *daily* basis than urban participants (43.8%) (χ= 15.527, df= 4, p= 0.004). Level of education (χ= 42.322, df= 16, p <0.001) and the impact of aging on appearance (χ= 21.178, df= 8, p=0.007) were also significantly associated with organic food consumption.

Functional Foods. Functional foods were most often consumed on a *weekly* (36.8%) or *3 times a month or less* (25.4%) basis, with little variation by location of residence or age category.

Foods and/or Supplements for Weight Loss. Forty-eight percent of participants indicated *never* selecting foods and/or supplements for weight loss purposes, with no variation by location of residence and a marginally lower percentage of OBBW (46.2%), than YBBW (50.2%) who *never* used these products.

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Factors Influencing Food Choices

Overall, 57.1% of participants stated there are people in their lives who influence their food choices with the top three influencers reported as *spouse* (58.1%), *children* (47.6%), and *friends* (34.6%). Fewer OBBW reported being influenced by other people in their lives (53.3%) compared to YBBW (60.9%); however, the top three influencers remained the same. Fifty-nine percent of urban residents and 54.5% of rural residents reported being influenced by others with the same top three influencers as all participants noted above; however, younger urban BBW were primarily influenced by their *children* (55.4%), followed by *spouse* (54.9%), and then *friends* (39.4%). Other people's influence on food choices was a variable significantly associated with organic food consumption (χ= 17.321, df= 4, p= 0.002). Just over one third (36.0%) of participants *sometimes to always* felt pressure by the media when making food choices. Media influence on food choices was significantly associated with location of residence (χ= 12.572, df= 3, p= 0.006), with a higher percent of urban participants (72.1%) being *sometimes to always* influenced compared to rural participants (27.9%). Media influence on food choices was not significantly associated with age category (p= 0.471), but was significantly associated with the consumption of organic foods, whereby organic food consumption increased with more frequent influence by the media (χ= 70.149, df= 8, p <0.001). Functional food consumption was also associated by media influence in the same direction as organic food consumption (χ= 56.939, df= 8, p <0.001).

Community Health and Nutrition Services

Information about food choices and body image was fairly important to participants (M= 62.1 $\pm$ 27.2), with insignificant differences by location of residence [1.297 (1081), p= 0.195] or age category [1.025 (1081), p= 0.306]. Over two-thirds of participants (69.7%) were unsure if

appropriate nutrition services and resources specific to food choices and body image for women existed in their community with more urban BBW (75.0%) than rural BBW (60.9%) responses. Twenty-two percent of participants agree there are community services available; however, 8.1% felt that no services are available in their community.

Community Services are Available. Figure 5.0 shows participants' responses to health and nutrition services available in Manitoban communities.

Participants provided the following information to the themes:

1) **Dietitian/Nutritionists**: RDs were most frequently identified (80% of responses).

2) **Other Health Professionals**: physicians, nurses, therapists, physiotherapists, dentists, pharmacists, naturopaths, chiropractors, and general medical professionals.

3) **Centres/Programs/Resources**: chronic disease management/cooking classes, food bank, smoking cessation programs, mental health services, the library, Craving Change, nutrition and body image programs, treatment centres, counselling services, Health Links, Food Matters MB, Women's Health Clinic, and community resource centres.

4) **Exercise/Sports/Weight Loss Programs**: recreation facilities, gyms, particular actives/sports that participants do, personal trainers, and weight loss programs (Weight Watchers, TOPS, U Weight Loss Clinic, etc.).

5) **Government Health Care**: specific regional health authorities, hospitals or government services

6) **Media/Books/Technology**: Internet, television, books, magazines, advertised resources in the newspaper, and brochures/pamphlets.

7) **Health/Grocery Stores**: information from employees or consultants at health food and grocery stores, and specific labels (e.g., President's Choice Blue Menu).

8) **Self-care**: spas, nail salons, hairdressers, and massage/physiotherapy services.

9) **Other**: farmer's markets, friends, schools, food sciences courses, organic restaurants, Canada's Food Guide, local activities, and being in close proximity to the city.

Some participants (n= 10) also indicated challenges associated with availability or access to services. Comments included:

[There are] "very infrequent sessions at [the] public health office." (ID# 575)

[There is a] "nutritionist, although [it is] hard to get in." (ID# 913)

"RHA [provides services and resources], but limited." (ID# 612)

[There is] "access to dietician's however [these services] are more specific to health issues."

(ID# 972)

Other participants alluded to the fact that services may be available, but they need to be sought.

"I believe there is information but you do need to look for it" (ID# 387)

"I feel that the info is out there if one takes the time to research" (ID# 883)

"I think there would be. If you looked for them, e.g. dietician." (ID# 1052)
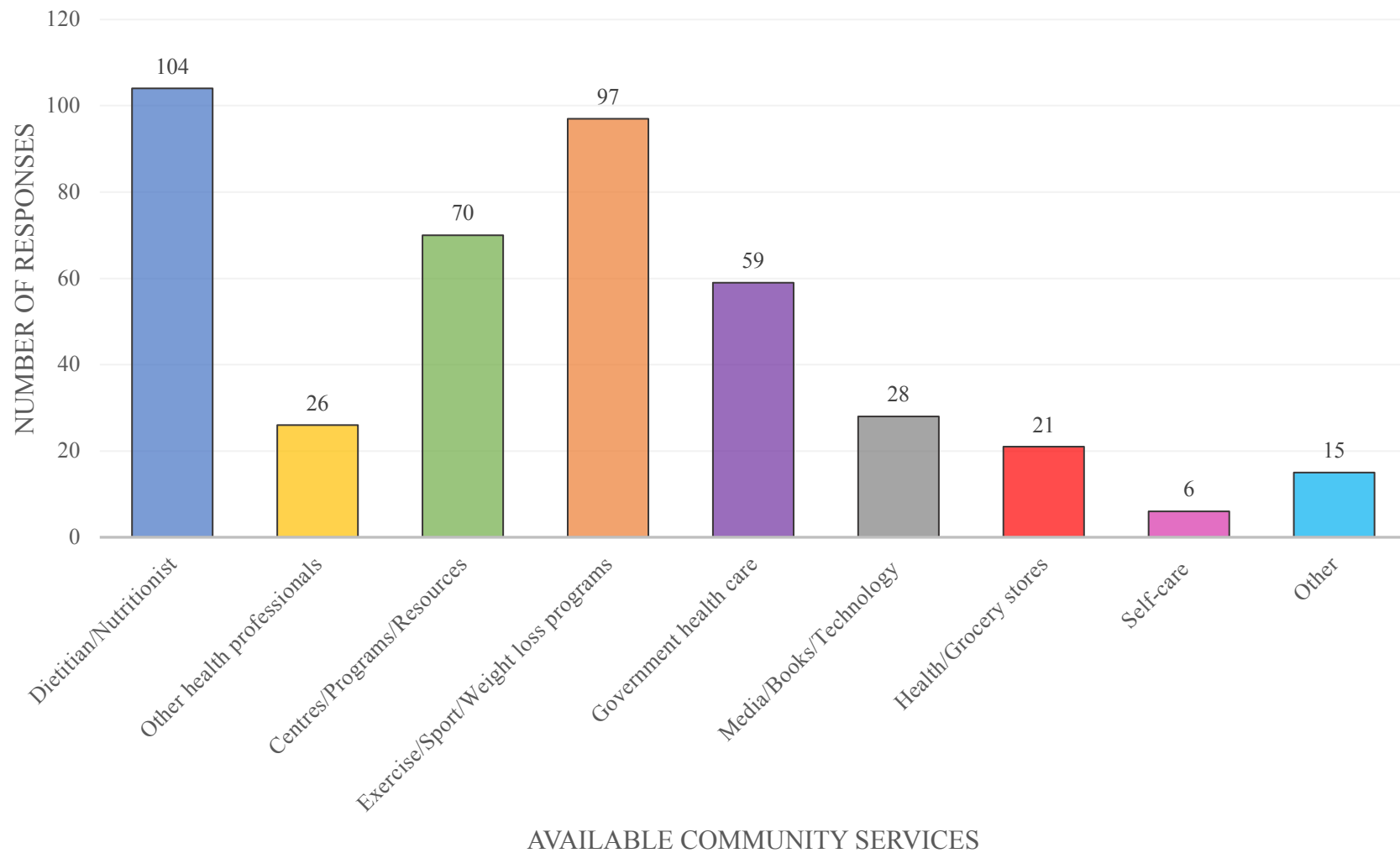
Figure 5.0. Themed Responses to Availability of Community Nutrition Services and Resources*

*Open-ended responses from those participants who answered "yes" to survey question 46 and specified examples of services/information sources. Participants may have identified more than one category in their response; therefore, total number of responses (n= 426) is greater than the number of participants who responded yes (n= 240).

Community Services are not Available. Seven themes organized participants' suggestions for health and nutrition services needed in Manitoban communities.

1) **Food Availability and Access**: better food availability, healthier community restaurants, alternative food choices, more choices in grocery stores, better access to quality fresh foods with reasonable prices and better labelling.

2) **Health Promotion**: readily available information on awareness and information to transform media messages, education about nutrients for aging adults and food choices.

3) **Community Services and Programs**: food/nutrition services (general, at work, and for aging adults), support groups (in the workplace and for low income families), consulting services, services for EDs, and drop in centres that are free or covered by the health care system.

4) **Health Resources/Education**: workshops on healthy food choices for women and girls, workshops in the workplace, nutrition classes, grocery tours, and eating for particular chronic diseases, resources from credible sources.

5) **Greater Access to Dietitians and Allied Health**: access without referral, walk-in clinics with nutritionists, full time RDs, visiting RDs.

6) **Exercise and Weight Loss Programs**: community gym or weight loss programs, female only gyms, variable fitness classes with flexible class times, affordable exercise programs, facilities for older adults only.

7) **Other**: life coaching, information delivered with empathy, transportation services, demand too high at Women's Health Clinic, grocery stores are challenging to navigate

Discussion

The objectives of this study were to examine eating behaviours and factors that may influence food choices and preference for local, organic, and functional food products, and to

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determine the availability and opinions related to community services among BBW residing in rural and urban Manitoban communities. Women are primary food providers for themselves and others and recognize the important role nutrition plays in healthy aging. BBW both young and old made the choice to consume local foods more frequently than organic foods; however, rural participants selected organic foods more frequently than urban participants. Interestingly, functional foods were consumed on a more frequent basis by participants compared to organic foods. Community services for MB BBW with respect to food choices and body image were found to be lacking or not adequately promoted.

The aging population has resulted in a shift in Canadian food trends toward products with enhanced nutrition, coming from environmentally sustainable sources with new taste profiles and flavour combinations (Agriculture & Agri-Food Canada, 2015). BBW in particular continue to dominate food-related activities within and outside the home (Colatruglio & Slater, 2014), and are increasingly aware of food-health relationships in disease prevention/maintenance and promoting longevity (Biggs et al., 2007; Agriculture & Agri-Food Canada, 2014a). Women; however, can be discouraged by a lack of products and services tailored for older women in today's complex food-health environment (Hofmeier et al., 2017).

Women today continue to have a known role in the kitchen, whereby almost all our participants reported preparing their own meals and almost two-thirds prepared meals for a spouse or common-law partner. Additionally, there were quite a few YBBW who were preparing meals for children, especially in rural communities. These findings reiterate that women are large contributors to meal preparation and food procurement for the household (Colatruglio & Slater, 2014), although participants were not asked about grocery shopping. These findings also suggest

that women likely feel responsible for the nutritional health of their families, a duty remarked by participants from Marshall's (2014) earlier study.

In light of greater educational attainment and a higher interest in health-food relationships, it is no surprise that over half our participants concluded their diets to be very healthy, with even more OBBW feeling this way than their younger counterparts. This is speculated to be due to OBBW feeling more independence and control over their choices as some YBBW are dealing with the effects of being part of the sandwich generation (explored below). Our findings agree with Marshall (2014), whose participants felt that healthy eating was very important for overall health, disease prevention, weight management, and well-being. Factors that can cohesively be described as healthy aging. Congruently, nutrition was considered to be very important to healthy aging by our study participants, with no difference by age category or location of residence. Similarly, food and drink choices were found to be fairly important to both body image and overall appearance with no differences in age category or location of residence, but comfortingly, almost half our participants never selected foods or supplements that claim to promote weight loss. The relatively higher percentage of women choosing not to consume weight loss products has increased since findings presented by Marshall (2014) and are consistent with consumer reports exemplifying a standstill in the weight loss supplement market in recent years (Business Development Bank of Canada, 2013).

BBW in the current study consumed local foods more frequently on a daily and weekly basis than either organic or functional foods; however, OBBW selected local foods more often than YBBW which contradicts findings from Marshall (2014) who found no difference by age category. The increased percentage in local food consumption over organic or functional foods may be partly due to the fact that consumers are known to trust locally sourced food labels more

so than other products such as "organic" (Business Development Bank of Canada, 2013). Location of residence was also significantly associated with local food consumption with a greater percent of daily consumers being rural residents and more weekly consumers urban residents, findings which are consistent with Marshall (2014). Again, location of residence was significantly associated with organic food consumption, with more rural residents selecting organics on a daily basis compared to urban residents, contradictory to Marshall's (2014) findings. Functional foods were not found to be significantly associated with any socio-demographic or health/behaviour-related variables; but local and organic food choices were significantly associated with concern for the impact of aging on appearance. Organic and functional foods tend to be viewed as "healthier" by consumers which could reflect the association with the variable impact of aging on appearance and may allude to the reason why 31% of consumers are willing to pay a premium for "health-enhancing products" (Business Development Bank of Canada, 2013). Surprisingly, women of our study selected functional foods on a more frequent basis than organic, which we speculate may relate to the higher level of educational attainment of BBW compared to previous generations. This cohort understands health-food relationships and place importance on food products to remain healthy yet are also cautious of their spending as many have reached retirement. Thus, these women may see a higher value in functional food products over organic foods. Additionally, the generous number of study participants whom are consuming functional foods on a weekly to daily basis may perhaps relate to targeted marketing of food companies toward the aging population (Agriculture & Agri-Food Canada, 2014a); however, we do not have qualitative information from participants to fully understand the reason behind their decisions.

As many BBW are still living with other individuals, it is important to explore whether food choices are made independently or if cohabitating relationships are influencing food choice decisions as over half our participants identified there to be individuals in their lives who do in fact influence their food choices. Overall, spouse, children, friends, or parents/other family members were the top four influencers which remained the same regardless of age category. As BBW are often identified as members of the "sandwich" generation (Centre on Aging, 2011), these influences do not come as a surprise as women are often caring for their parents, and children on top of their own nutritional needs and likely those of a partner. Other people's influence on food choices was significantly associated with organic food choices, but not local or functional foods. The media's influence on food choices was also significantly associated with location of residence, with a greater percentage of urban BBW who felt influenced by the media compared to rural women. Additionally, organic and functional food choices were significantly associated with the media's influence, illustrating the more frequently a participant reported feeling pressure from the media, the more frequently they selected organic or functional foods, arguing the link between knowledge and product purchasing. The effect nutrition knowledge has on the perceived healthiness of food was demonstrated by Ares et al. (2008) who noted that consumers with a higher level of knowledge were more comfortable with nutrition lingo and understood health-related connections with functional food selections. As the present study comprises a well-educated sample of women, this has conceivably lead to the association noted between level of education and organic food consumption, similar findings which were demonstrated by Barker et al. (2009).

Seventy percent of participants found that nutrition and health services were lacking in their communities, a statement in agreement with participants in Hofmeier et al.'s (2017) study

who were discouraged by the lack of products and services available for women 50 years and older. A range of examples were provided by the one-quarter of rural participants and one-fifth of urban participants who felt that community services were adequate. Services described illustrated a supportive environment with a variety of services from healthcare to food availability and accessibility; however, descriptions from participants in urban and rural setting were notably different. Rural participants described services using broader terminology and expressed gratitude in simply having services, whereas, urban participants were a lot more specific in the services they described. Interestingly, media outlets were identified by both rural and urban participants as sources of information, which raises concern for the credibility in the information that is informing BBW's decisions related to health and food.

For those who specified a lack of community services, more than double the percent of rural participants felt this way compared to urban, illustrating the ongoing issue of lack of available resources in rural communities. Major differences by location of residence was the broad topic of food availability and affordability for rural residents. Comparatively, accessibly of food is not an issue for urban participants; however, what was important to them was better labelling with larger print and transparent messages. The limited variability in demand for increased health promotion, support services, and age specific amenities (e.g., gyms for older adults) by location of residents illustrates that either available services are not well promoted, or they simply are not available to older adult women. Most information today is easily accessed using a computer and regional health authority websites as well as 211 Manitoba do provide listings of services for older adults; however, the websites are not always user-friendly and require a computer, which our study has exemplified not everyone does.

Limitations

Questionnaire design with respect to food choices was a limitation of this study. The option "not sure" posed challenges with interpretation and thus these responses were omitted for inferential analysis as it was unclear if this response meant participants were not sure about the frequency of consumption of a particular food or whether they actually consumed it. Similarly, no examples were provided for the open-ended question examining availability of community nutrition services and what these services looked like, potentially inflating the number of participants who were uncertain of service availability.

Conclusion

Health concerns are rising and so is health awareness among Canadian consumers (Business Development Bank of Canada, 2013). Increased Canadian consumer interest in health-food relationships and an aging population are driving the unsaturated market for local, organic and functional food products (Agriculture and Agri-Food Canada, 2014a-b). Women of this study found nutrition to be very important to healthy aging yet felt unsupported in their community regarding appropriate foods selections, media literacy, and addressing body image concerns.

CHAPTER 6

GENERAL DISCUSSION

The overarching objectives of this study with BBW residing in rural and urban MB were to: (1) examine body image satisfaction, weight attitudes, and aging concerns; (2) examine eating behaviours and factors that may influence food choices and preference for local, organic, and functional food products; and (3) determine availability and opinions related to community health and nutrition services. A quantitative approach was used to explore these topics with 1083 women ages 50-69 from MB.

Within this thesis, the results of this study have been presented as two stand-alone research papers. The first paper (Chapter 4) focuses on body satisfaction, dieting behaviours, aging concerns, body work practices, and outside influences affecting body satisfaction. The second paper (Chapter 5) explores associations between food choices and health/behaviour-related factors as well as opinions regarding community services.

To obtain the most accurate representation of body satisfaction, BMI calculations were not calculated (height not requested) as research has shown the inaccuracy of self-reported height (over-reported) and weight (under-reported) especially amongst females, chronic dieters, and individuals who are overweight or obese (Polivy, Herman, Trottier, & Sidhu, 2013; Lin, DeRoo, Jocobs, & Sandler, 2011). Similarly, missing information reflects the same process as underreporting (Polivy et al., 2013), which rationalizes why some participants in our study reported their weight as zero. Underreporting weight in the literature has been attributed to: ignorance, perceptual bias (wherein one sees themselves inaccurately), self-presentation strategy (impressing others with a socially acceptable weight), or self-protection – allowing someone to feel better about themselves (Polivy et al., 2013). Weight has been documented in the literature

as one of the greatest concerns of women regardless of their age (Kozar & Damhorst, 2009) or ethnic background (Sabik & Cole, 2017). Therefore, especially in community settings, research is moving toward measuring someone's health and satisfaction by feelings of wellbeing, functionality, and positive mental health rather than the number on a scale. In our study, the decision to ask participants for their current body weight and ideal body weight was to obtain the best representation of their DWC as the discrepancy in current and ideal weight provides a clearer indication of body image perception and satisfaction (Heron & Smyth, 2013).

Overall, BD was exemplified by our participants, and far less people were satisfied with their body weight than their overall appearance. The vast majority of participants desired to lose weight and; therefore, it was not surprising that DWC predicted BD in this study and supported previous findings in the literature (Marshall, 2014; Gagne et al., 2012). Media pressure was also associated with greater BD, which is a concern as BD is a risk factor for EDs (Mangweth-Matzek et al., 2006; Levine, 2009). Earlier research has postulated an increase in ED prevalence in older adults due to images of older women in the media becoming thinner (Gadalla, 2008). Body work practices, dieting behaviours, and restrictive eating were used by participants as ways to mitigate BD; results that strongly reinforce community research exemplifying DE and weight control practices among women 50 years and older (Gadalla, 2008; Mangweth-Matzek et al., 2006). Self-rated health was positively associated with body satisfaction among our participants and therefore, one's reflection of overall health is an important factor to consider when screening for body satisfaction of older female adults. Body satisfaction results are supported by objectification theory, the theoretical framework used to guide this research, whereby we observed a relatively high percentage of BD amongst our participants and the use of DE and body work practices to mitigate undesirable changes associated with aging.

The decision to evaluate comparisons between older and younger BBW was to highlight a possible age effect (changes that occur as one ages) amongst females of the baby boomer generation. Younger participants in our study desired to lose significantly more weight compared to their older counterparts. Since weight has been found to be an important characteristic to a woman's attractiveness, these findings may lend to the significant difference observed in appearance stress by YBBW, suggesting that younger women may feel greater societal pressure to conform to the thin ideal than older women. Where previous studies have found older age to be a protective factor against BD (Hurd, 2000; Grippo & Hill, 2008; Marshall, 2014), our results showed the opposite. An increase in one's age decreased overall appearance satisfaction, a finding not previous noted in other studies. This may reflect pressure from societal messages that praise youthful beauty (Brown & Knight, 2015) and the use age inappropriate models in film and television (Hofmeier et al., 2017) to represent older women or by a potential cohort effect (i.e., the impact of a group bonded by a common life experience). When it comes to food selections, natural, unprocessed, organic, high quality and healthy convenience foods with functional benefits are trending (Business Development Bank of Canada, 2013; Agriculture and Agri-Food Canada, 2011; 2014a; 2015). Influences from media outlets and individuals in one's life are shaping food choices of BBW. OBBW were more likely to select local and organic foods and also rate their diets as healthier, something that may be related to barriers YBBW are facing as many consider themselves part of the sandwich generation. Thus, preferences from other family members, caregiver burden, and fatigue may be outweighing the option of making selections these BBW desire (Marshall, 2014; Centre on Aging, 2011).

Variation in results by location of residence (Appendix R) were marginal when evaluating body image perceptions of BBW in this study; however, urban women identified

aging related concerns on a more frequent basis compared to their rural counterparts.

Congruently with work by Marshall (2014), rural participants were likely to select local and

organic foods more frequently than women residing in urban areas, which we have speculated to

be related to rural individuals living in closer proximity to farmers or growing food themselves.

Unremarkably, participants found nutrition to be very important to healthy aging regardless of

age or where they lived; however, it was disappointing to see there was a high percentage of

participants who were unaware of services and resources for women in their community. Those

who were unsure, coupled with those who definitively reported that services did not exist in their

community equated to more than 75% of our sample, an issue that has been noted in recent

research as well (Hofmeier et al., 2017). When examined by location of residence, examples of

both services available and services required varied notably by detail in responses from urban

and rural residents. For example, rural women described services in a general, broader context

and emphasized a need for greater food access and availability in comparison to urban

participants who desired more transparent messages on product labels as well as specific

nutrition information related to this age group. Both groups noted the Internet and health food

stores to be available services.

Strengths

As this study was largely quantitative, the large sample size and high response rate

attained enabled us to achieve statistical significance and reduce the possibility that significance

was reached by chance. Although statistical testing was not used to validate our survey tool,

rigor and precision went into question development and review. Due to the online questionnaire

design, our data set was almost entirely complete, limiting challenges associated with missing

data, data analysis, and interpretation. This study contributes to the sparse literature pertaining to

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body image perceptions, food choices, and opinions regarding community services of BBW in a Canadian setting. Furthermore, as this study specifically examines characteristics of females of the baby boomer cohort, we were able to deduce an age effect for some of our results.

Limitations

This study is somewhat limited by convenience and snowball sampling techniques used to recruit the majority of participants; therefore, it may not be representative of all BBW. Sampling bias likely occurred in this study, whereby women who expressed interest in participating may have had pre-existing interest or experience with eating issues, body perceptions and/or an interest in food and nutrition. Due to the cross-sectional design, only associations can be inferred from our results which does not allow for definitive conclusions about body satisfaction, nor can a cohort effect be determined. Limited testing of survey questions exposed design concerns related to ambiguous response categories. Additionally, no survey question addressed the impact caregiving on food choices which is important as many BBW are caring for dependent children and aging parents. Comparisons by ethnicity could not be examined due to the multiple response design of this question. Additionally, as the vast majority of participants identified as North American results are not generalizable to all BBW in MB and opinions of ethnic minorities and Indigenous women were under represented in this study.

Implications of Findings

Healthcare

Research to date has been heavily weighted on young women's body satisfaction; therefore, a nuanced understanding of body image, body satisfaction, aging, and media influences on women over 50 years of age may provide health care providers with a foundation

for the development of screening and assessment tools, counselling strategies, and standardized training on how to approach this sensitive topic. These approaches will allow health care providers to properly address women's concerns beyond middle age using empathy and techniques such as active listening and motivational interviewing.

Specifically, this research will help to create opportunities for skill development in healthcare which should include standardized training that would result in experts who understand aging women and the potential body image and aging concerns they may have. Older women who are displaying concerning behaviours/practices related to appearance and body weight modification may be falling through the cracks in the healthcare system if they do not meet the criteria for EDs (e.g., significant weight loss). Specifically, dietetic professionals must start by educating clients about the normal changes associated with aging and assess for signs of negative health behaviours such as dieting and disordered eating. Furthermore, RDs and other health care professionals must be fluent in media literacy and help their clients transform media messages using educational techniques that are in line with positive body movement ideals. Movement such as: Health at Every Size® (HAES), the Dove Campaign for Real Beauty (est. 2004), and the Quebec Charter for a Healthy and Diverse Body Image (est. 2009) focus on health rather than size and celebrate the diversity of all body shapes. Additionally, client-centred counselling strategies are overlooked and underemphasized in post-secondary education. At this time, intergenerational communication and empathetic approaches to counselling are invaluable as the population continues to age and need requirements diversify. Greater advocacy is needed to change targeted marketing aimed at "treating" the aging process as these messages have the potential to promote negative internal conflicts and devalue aging women in our society.

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Although RDs are experts in nutrition, when counselling they must also be aware that many BBW have taken ownership of their health and possess a solid foundation of nutrition-related knowledge. Therefore, instead of simply educating on how to eat healthy, RDs must work with their clients to understand personal barriers to healthy eating and/or assist their clients in deciphering between mixed-media messages that may be negatively impacting their diet. Additionally, RD services can only be relatable if they themselves understand current food trends their clients may be following or interested in following. RDs have a robust understanding of food knowledge and must help their clients to make informed decisions when it comes to need or appropriateness of supplementation for example. Moreover, as such a large number of participants identified a need for health and nutrition services, RDs should take this information and assess community need to develop more efficient methods to promote services or advocate to improve the well-being of BBW in both urban and rural communities. As most individuals have computer and Internet access, providing free online webinars on a wide variety of topics hosted by RDs and other healthcare professionals can be a start in increasing public access to credible information.

To the best of our knowledge Canadian national data collection tools [e.g., Canadian Community Health Survey (CCHS)] do not include questions pertaining to body satisfaction. Questions utilized in our survey would provide value and make the CCHS more robust.

Food Industry

Baby boomers are a more physically fit and affluent cohort (Biggs et al., 2007), with women still dominating food associated activities in the home (Colatruglio & Slater, 2014). The food industry must recognize this and increase their awareness of how the aging process relates to the connection between food and health. This can begin with a needs assessment based on age,

living arrangements, and life stage that would provide valuable insight into benefits to the consumer, as well as the producer and seller. For example, OBBW tend to be living alone or with one other person and may be in the market for easy to prepare, single serve meals that are fortified with nutrients such as vitamin D and calcium. Additionally, functional foods were shown to be consumed more frequently than organic products by BBW in this study, which may be an area for opportunity for product development. Product labels were identified by some participants as go to sources for nutrition information; however, it was also noted that this information can be confusing, and nutrition claims not transparent. Therefore, the food industry should work to develop product labeling with clear nutrient and health claims that are user friendly, which may be best achieved through universal logos or colour coding. Finally, it is imperative that misleading and sensationalized marketing be eliminated. Media messages are influential when it comes to food choices as evidenced by our study findings; therefore, messages must be clear and truthful when marketing products.

Future Research

Study replication is required to validate the collection tool used to confirm generalizability of forthcoming findings. This would be a preliminary step in the development of screening and assessment tools that could be used specifically for women over 50 years of age. The majority of work in the area of body image places emphasis and reports dissatisfaction rather than satisfaction, thus creating negative bias. Therefore, it is important that when conducting research and disseminating results, the sensitive nature of body satisfaction be evaluated and discussed in a positive light when possible. Furthermore, work in this area should focus on mixed-method or qualitative study designs in combination with large quantitative studies to further understand participants' opinions and feelings related to body satisfaction and

required community services. As it was challenging to find any information on the usefulness of community services available by Manitoba's older adults, it would be worthwhile for health authorities or non-profit organizations to make program evaluation more accessible for public review. Additionally, more community studies designed to evaluate program demand for counselling services specific to women 50 years and older would establish support for those experiencing BD in a community setting as this was a concern for a high percentage of women in our study. A closer exploration of body satisfaction by ethnic background is also warranted as Canada is a multicultural country comprised of women with individualized expectations and cultural needs. Studies in MB which reflect Indigenous women's body satisfaction would be a novel area of research as Indigenous peoples make up a significant percent of the MB population. Such studies would help to inform culturally appropriate supports and services needed. Since the media has influential power over opinion development, purchasing decisions, and personal body image comparisons, research that explores how media can be used as a tool to promote positive body image is long overdue and will assist positive body movements to expand and transform how products are marketed and sold.

In relation to the food industry, consumer profiles are key in product development. The industry must understand what consumers value and ensure they relay information about how their products fit with the core values of their consumers. Improvements to labels such as "on the product" labelling has been shown to be the most effective means of communication (Business Development Bank of Canada, 2013); therefore, it would be reasonable for companies to evaluate the effectiveness of easily understood images or large print messages to communicate what value their products are offering to consumers.

Take Away Points

1. What are the characteristics of BBW residing in rural and urban MB?

    o Mean age of participants was 60 ± 5.3 years in 2015. The majority were married, of North American decent, lived with only one person, and had at least a university degree or college certificate.

    o Annual household income was widespread for urban BBW, and the majority of older and rural BBW reported a lower income than their younger counterparts.

    o Overall, participants reported their self-rated health as either good, very good, or excellent, with similar responses by age category and location of residence.

2. Are there associations between body satisfaction and sociodemographic, environmental, or health/behaviour related factors for BBW in MB?

    o No differences existed in body weight satisfaction by age category or location of residence.

    o Household income was the only sociodemographic variable associated with body weight satisfaction.

    o Appearance pressure from others, media pressure on appearance, and media influence on food choices were among the environmental variables associated with body weight satisfaction.

    o Health/behaviour-related variables with significant relationships to body weight satisfaction included: cigarette smoking status, self-rated health, appearance preoccupation, appearance anxiety, dieting behaviour, the consumption of organic foods, and the consumption of foods and/or supplements for weight loss.

- o Location of residence was not associated with overall appearance satisfaction; however, age category was, with a higher percentage of OBBW reporting satisfaction than YBBW.

- o Significant environmental variables with overall appearance satisfaction included: appearance pressure from other, media pressure on appearance, and media influence on food choices.

- o Cigarette smoking status and appearance anxiety were two health/behaviour-related variables associated with overall appearance satisfaction.

3. What are the predictors of body satisfaction for Manitoban BBW?

   - o There were five variables that predicted both body weight satisfaction and overall appearance satisfaction which included: DWC, average daily appearance stress, the importance of overall appearance, self-rated health, and appearance anxiety.

4. Are there differences in sociodemographic, environmental, or health/behaviour related factors among older and younger BBW or BBW residing in rural vs urban areas in MB?

   - o YBBW desired to lose significantly more weight (M= 29.8 $\pm$ 31.9 lbs) than OBBW (M= 24.2 $\pm$ 26.6 lbs). A significant difference in weight loss was not evident among rural and urban participants.

   - o In general, BBW were sometimes stressed about their appearance; however, significant differences were observed by age category as YBBW were more stressed on a daily basis compared to OBBW.

   - o Both urban and rural participants found physical activity to be very important to their overall appearance; however, urban women's higher rating was significant.

- Overall, BBW found their diets to be fairly healthy but there was a significant difference by age category as OBBW scored their diets as healthier.
- Nutrition was rated as very important to healthy aging by participants regardless of age category or location of residence.

5. Are there associations between food choices (preference for local, organic, or functional foods) and health/behaviour related factors for BBW in MB?
    - Local food choices were significantly different by age category as well as location of residence. Local foods were significantly associated with one's relationship and cigarette smoking status, as well as by how frequently one was concerned with the impact of aging on appearance.
    - Organic food choices were significantly different by location of residence and associated with level of education, the impact of aging on appearance as well as by the media's influence on food choices and other people's influence on food choices.
    - Functional foods were only significantly associated with the media's influence on food choices, with a general trend suggesting higher consumption of such foods with greater reports of influence by the media.

6. From a consumer perspective, are there support services and resources related to nutrition and body image available to BBW in both rural and urban Manitoban communities?
    - 69.7% of participants did not know if services or resources existed
    - 22.2% of participants said services were available
    - 8.1% of participants specified no services were available

Summary

The results of this study demonstrate that BD is evident and on the rise amongst female baby boomers compared to previous research. Weight is seen as more problematic than overall appearance, and observable differences in weight satisfaction by location of residence are not significant when comparing to previous research (Marshall, 2014). Methods to mitigate BD, such as body work practices and dieting behaviours, are being used and nutrition appears to be very important to healthy aging, which may relate to the consumption of local, organic and functional foods products. More community services specific to the aging woman are needed in MB to address BD and clarify confusing media and food industry messages regarding health and nutrition.

References

Agriculture and Agri-Food Canada. (December, 2015). *Functional Foods and Natural Health Products.* Retrieved from http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/by-product-sector/functional-foods-and-natural-health-products/?id=1170856376710

Agriculture and Agri-Food Canada. (August, 2014). *Opportunities and Challenges Facing the Canadian Functional Foods and Natural Health Products Sector.* Retrieved from http://www.agr.gc.ca/resources/prod/doc/pdf/ffnhp_opportunities_challenges_afpsn_possibilites_defis-eng.pdf

Agriculture and Agri-Food Canada. (October, 2014). *Organic Production – Canadian Industry.* Retrieved from http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/by-product-sector/organic-products/organic-production-canadian-industry/?id=1183748510661

Agriculture and Agri-Food Canada. (October, 2011). *Health and Wellness Trends for Canada and the World.* Retrieved from http://www5.agr.gc.ca/resources/prod/Internet-Internet/MISB-DGSIM/ATS-SEA/PDF/4367-eng.pdf

Allaz, A. F., Bernstein, M., Vannes, M. C., Rouget, P., & Morabia, A. (1998). Weight loss preoccupation in aging women: A review. *The International Journal of Eating Disorders 23*(3), 287-294. doi: 10.1002/(SICI)1098-108X(199804)23:3<287::AID-EAT6>3.0.CO;2-F

American Society of Plastic Surgeons. (2009). *2009 report of the 2008 statistics.* Retrieved from http://www.plasticsurgery.org/Media/stats/2008-US-cosmetic-reconstructive-plastic-surgery-minimally-invasive-statistics.pdf

Ares, G., Gimenez, A., & Gambaro, A. (2008). Influence of nutritional knowledge on perceived healthiness and willingness to try functional foods. *Appetite 51*(3), 663-668. doi: 10.1016/j.appet.2008.05.061

Banet-Weiser, S., & Portwood-Stacer, L. (2006). "I just want to be me again!" Beauty pageants, reality television and postfeminism. *Feminist Theory, 7*, 255-272. doi: 10.1177/1464700106064423

Barker, M., Lawrence, W., Crozier, S., Robinson, S., Baird, J., Margetts, B., & Cooper, C. (2009). Educational attainment, perceived control and the quality of women's diets. *Appetite, 52*(3), 631-636. doi: 10.1016/j.appet.2009.02.011

Barton, J., Blinder, B. J., Cumella, E. J., Edward, J., & Sanathara, V. A. (2006). Psychiatric comorbidities of female inpatients with eating disorders. *Psychosomatic Medicine 68*(3), 454-462. Doi: 10.1097/01.psy.0000221254.77675.f5

Bech-Larsen, T. & Scholderer, J. (2007). Functional foods in Europe: Consumer research, market experiences and regulatory aspects. *Trends in Food Science and Technology, 18*(4), 231-234. doi: 10.1016/j.tifs.2006.12.006

Bedford, J. L., & Johnson, C. S. (2006). Societal influences on body image dissatisfaction in younger and older women. *Journal of Women & Aging, 18*(1), 41-55. doi: 10.1300/J074v18n01_04

Bessenoff, G. R., & Del Priore, R. E. (2007). "Women, weight, and age: Social comparison to magazine images across the life span." *Sex Roles, 56*, 215-222. doi: 10.1007/s11199-006-9164-2

Biggs, S., Phillipson, C., Leach, R., & Money, AM. (2007). The mature imagination and consumption strategies: Age and generation in the development of a United Kingdom baby boomer identity. *International Journal of Ageing and Later Life, 2*(2), 31-59. doi: 10.3384/ijal.1652-8670.072231

Boyczuk, A. M., & Fletcher, P. C. (2016). The ebbs and flows: Stresses of sandwich generation caregivers. *Journal of Adult Development, 23*(1), 51-61. doi: 10.1007/s10804-015-9221-6

Braun, V., & Clarke, V. (2006). Using thematic coding analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi: 10.1191/1478088706qp063oa

Brown, A., & Knight, T. (2015). Shifts in media images of women appearance and social status from 1960 to 2010: A content analysis of beauty advertisements in two Australian magazines. *Journal of Aging Studies, 35*(10), 74-83. doi: 10.1016/j.jaging.2015.08.003

Brownell, K. D., & Rodin, J. (1994). Medical, metabolic, and psychological effects of weight cycling. *Archieves of Internal Medicine, 154*(12), 1325-1330. doi: 10.1001/archinte.1994.00420120035004

Business Development Bank of Canada. (October, 2013). *Mapping Your Future Growth: Five Game-Changing Consumer Trends.* Retrieved from https://www.bdc.ca/EN/Documents/analysis_research/Report_BDC_Mapping_your_future_growth.pdf#search=%22buy%20local%20movement%22

Cash, T. F., & Henry, P. E. (1995). Women's body images: The results of a national survey in the U.S.A. *Sex Roles, 33*(1-2), 19-28. doi: 10.1007/BF01547933

Centre on Aging (2011). *The Baby Boomers: A Profile of Manitoba's New Generation of Seniors.* Retrieved from http://umanitoba.ca/centres/aging/media/CoA_baby_boomer_profile2011_final_web.pdf

Chassin, L., Macy, J. T., Seo, D. C., Presson, C. C., & Sherman, S. J. (2010). The association between membership in the sandwich generation and health behaviors: A longitudinal study. *Journal of Applied Developmental Psychology, 31*(1), 38-46. doi:

10.1016/j.appdev.2009.06.001

Childs, N. M. (1997). Foods that help prevent disease: Consumer attitudes and public policy implications. *Journal of Consumer Marketing, 14*(6), 433-447. doi: 10.1108/07363769710186015

Chonody, J. M., & Teater, B. (2016). Why do I dread looking old? A test of social identity theory, terror management theory, and the double standard of aging. *Journal of Women & Aging 28*(2), 112-126. doi: 10.1080/08952841.2014.950533

Clarke, L. H. (2001). Older women's bodies and the self: The construction of identity in later life. *Canadian Review of Sociology & Anthropology, 38*, 441-464. Retrieved from http://go.galegroup.com.uml.idm.oclc.org/ps/i.do?&id=GALE%7CA80924471&v=2.1&u=winn62981&it=r&p=CPI&sw=w&authCount=1

Clarke, L. H. (2002). Older women's perceptions of ideal body weights: The tensions between health and appearance motivations for weight loss. *Aging & Society, 22*, 751-773.

Colatruglio, S., & Slater, J. (2014). Food literacy: Bridging the gap between food, nutrition and well-being. In Deer, F., Falkenberg, T., McMillan, B., & Sims, L. (Eds.), *Sustainable well-being: Concepts, issues, and educational practices* (pp. 37-55). Winnipeg, MB: ESWB Press. Retrievable from http://www.eswb-press.org/publications.html

Davison, T., & McCabe, M. (2005). Relationships between men's and women's body image and their physiological, social, and sexual functioning. *Sex Roles, 52*(7), 463-475. doi: 10.1007/s11199-005-3712-z

de Souto Barreto, P., Ferrandez, A., & Guihard-Costa, A. (2011). Predictors of body satisfaction: Differences between older men and women's perceptions of their body functioning and appearance. *Journal of Aging and Health, 23*(3), 505-528. doi: 10.1177/0898264310386370

Dietitians of Canada. (January, 2015). *Organic Foods*. Retrieved from http://www.dietitians.ca/Your-Health/Nutrition-A-Z/Organic-Foods.aspx

Eating Disorders Review. (2017). Update: Age and gender can affect EDs over time. *Eating Disorders Review, 28*(5). Retrieved from http://eatingdisordersreview.com/update-age-gender-can-affect-eds-time/

Eating Disorders Victoria. (2011). *Classifying eating disorders – DSM-5*. Retrieved from http://www.eatingdisorders.org.au/eating-disorders/what-is-an-eating-disorder/classifying-eating-disorders/dsm-5

Ferraro, F. R., Muehlenkamp, J. J., Paintner, A., Wasson, K., Hager, T., & Hoverson, F. (2008). Aging, body image, and body shape. *The Journal of General Psychology, 135*(4), 379-392. doi: 10.3200/GENP.135.4.379-392

Finn, S. C. (2000). Nutrition and healthy aging. *Journal of Women's Health & Gender-Based Medicine, 9*(7), 711-716. Retrieved from http://web.a.ebscohost.com.uml.idm.oclc.org/ehost/pdfviewer/pdfviewer?sid=dc861c14-8042-412e-b6eb-a4274cd37692%40sessionmgr4004&vid=1&hid=4109

Food Matters Manitoba. (June, 2015). *Local Food Procurement: A Case Study of Diversity Foods – Manitoba on the Menu Toolkit.* Retrieved from http://www.foodmattersmanitoba.ca/2015/06/local-and-sustainable-food-procurement-a-case-study-of-diversity-foods/

Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*(2), 173-206. doi: 10.1111/j.1471-6402.1997.tb00108.x

Gadalla, T. M. (2008). Eating disorders and associated psychiatric comorbidity in elderly Canadian women. *Archives of Women's Mental Health*, *11*, 357-362. doi: 10.1007/s00737-008-0031-8

Gagne, D. A., Von Holle, A., Brownley, K. A., Runfola, C. D., Hofmeier, S., Branch, K. E, & Bulik, C. M. (2012). Eating disorder symptoms and weight and shape concerns in a large web-based convenience sample of women ages 50 and above: Results of the gender and body image (GABI) study. *International Journal of Eating Disorders 45*(7), 832-844. doi:10.1002/eat.22030

Grippo, K. P., & Hill, M. S. (2008). Self-objectification, habitual body monitoring, and body dissatisfaction in older European American women: Exploring age and feminism as moderators. *Body Image, 5,* 173-182.

Gropper, S.S., & Smith, J.L. (2013). Water-Soluble Vitamins. In: *Advanced Nutrition and Human Metabolism.* (6th ed.) (pp. 307-369). Belmont, CA: Wadsworth, Cengage Learning.

Halliwell, E., & Dittmar, H. (2003). A qualitative investigation of women's and men's body image concerns and their attitudes toward aging. *Sex Roles, 49*(11), 675-684. doi: 10.1023/B:SERS.0000003137.71080.97

Hasler, C. M. (2002). Functional foods: Benefits, concerns and challenges. A position paper from the American Council on Science and Health. *The Journal of Nutrition, 132*(12), 3772-3781. Retrieved from http://jn.nutrition.org.uml.idm.oclc.org/content/132/12/3772.full.pdf+html

Hefner, V., Woodward, K., Figge, L., Bevan, L., Santora, N., & Baloch, S. (2014). The influence of television and film viewing on midlife women's body image, disordered eating, and food choice. *Media Psychology 17*(2), 185-207. doi: 10.1080/15213269.2013.838903

Health Canada (2018). Eating well with Canada's food guide. Retrieved from
https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/print_eatwell_bienmang-eng.pdf

Heron, K. E., & Smyth, J. M. (2013). Body image discrepancy and negative affect in women's everyday lives: An ecological momentary assessment evaluation of self-discrepancy theory. *Journal of Social and Clinical Psychology*, *32*(3), 276-295. doi: org/10.1521/jscp.2013.32.3.276

Hofmeier, S. M., Runfola, C. D., Sala, M., Gangne, D. A., Brownley, K. A., & Bulik, C. M. (2017). Body image, aging, and identity in women over 50: The gender and body image (GABI) study. *Journal of Women & Aging, 29*(1), 3-14. doi: 10.1080/08952841.2015.1065140

Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image, 17*, 100-110. doi: 10.1016/j.bodyim.2016.02.008

Hurd, L. (2000). Older women's body image and embodied experience: An extrapolation. *Journal of Women & Aging, 12*(3-4), 77-97. doi: 10.1300/J074v12n03_06

Hurd Clarke, L., & Bundon, A. (2009). From "The thing to do" to "Defying the ravages of age": Older women reflect on the use of lipstick. *Journal of Women & Aging, 21*(3), 198-212. doi: 10.1080/08952840903054757

Hurd Clarke, L., & Griffin, M. (2008). Visible and invisible aging: Beauty work as a response to ageism. *Ageing and Society, 28*(5), 653-674. doi:10.1017/S0144686X07007003

Hurd Clarke, L., & Korotchenko, A. (2010). Shades of grey: To dye or not to dye one's hair in later life. *Ageing and Society 30*(6), 1011-1026. doi: 10.1017/S0144686X1000036X

Hurd Clarke, L., & Korotchenko, A. (2011). Aging and the body: A review. *Canadian Journal on Aging, 30*(3), 495-510. doi: 10.1353/cja.2011.0035

Keller, H. H. (2013). Community-living older adults: Usual to accelerated aging. In: *Aging Well with Nutrition.* (2nd ed.) (pp. 183-222)

Kerton, S., & Sinclair, A. J. (2010). Buying local organic food: A pathway to transformative learning. *Agriculture and Human Values 27*(4), 401-413. doi: 10.1007/s10460-009-9233-6

Kozar, J. M., & Damhorst, M. L. (2009). Comparison of the ideal and real body as women age:

Relationships to age identity, body satisfaction and importance, and attention to models in advertising. *Clothing & Textiles Research Journal 27*(3), 197-210. doi: 10.1177/0887302X08326351

Labrecque, J., Doyon, M., Bellavance, F., & Kolodinsky, J. (2006). Acceptance of functional foods: A comparison of French, Americam, and French Canadian consumers. *Canadian Journal of Agricultural Economics, 54*(4), 647-661. Retrieved from http://onlinelibrary.wiley.com.uml.idm.oclc.org/doi/10.1111/j.1744-7976.2006.00071.x/epdf

Lewis, D. M., & Cachelin, F. M. (2001). Body image, body dissatisfaction, and eating attitudes in midlife and elderly women. *Eating Disorders 9*(1), 29-39. doi: 10.1080/106402601300187713

Levine, M. (2009). Combating the negative impact of mass media. *Eating Disorders Review, 20*(6). Retrieved from http://edr.karunaconsulting.com/combating-the-negative-impact-of-mass-media/

Liechty, T. (2012). "Yes, I worry about my weight...but for the most part I'm content with my body": Older women's body dissatisfaction alongside contentment. *Journal of Women & Aging, 24*(1), 70-88. doi: 10.1080/08952841.2012.638873

Lin, C. J., DeRoo, L. A., Jacobs, S. R., Sandler, D. P. (2011). Accuracy and reliability of self-reported weight and height in the sister study. *Public Health Nutrition 15*(6), 989 – 999. doi: 10.1017/S1368980011003193

Lindner, K. (2004). Images of women in general interest and fashion magazine advertisements from 1955 to 2002. *Sex Roles, 51*(7), 409-421. doi: 10.1023/B:SERS.0000049230.86869.4d

Mahan, K. L., Escott-Stump, S., Raymond, J. L. (2012). Health claims for diet-disease relationships. In: *Krause's Food and the Nutrition Care Process* (13th ed.) (pp. 286). St. Louis, MO: Elsevier Saunders.

Mangweth-Matzek, B., Rupp, C. I., Hausmann, A., Assmayr, K., Mariacher, E., Kemmler, G., Whitworth, A. B., & Biebl, W. (2006). Never too old for eating disorders or body dissatisfaction: A community study of elderly women. *International Journal of Eating Disorders, 39*(7), 583-586. doi: 10.1002/eat

Mangweth-Matzek, B., Hoek, H. W., Rupp, C. I., Lackner-Seifert, K., Frey, N., Whitworth, A. B., Pope, H. G., & Kinzl, J. (2014). Prevalence of eating disorders in middle-aged women. *International Journal of Eating Disorders, 47*(3), 320-324. doi: 10.1002/eat.22232

Marshall, C., Lengyel, C., & Utioh, A. (2012). Body dissatisfaction among middle-aged and

older women. *Canadian Journal of Dietetic Practice and Research, 73*(2), e241-e247. doi: 10.3148/73.2.2012.e241

Marshall, C. (2014). *Body Dissatisfaction, Concerns about Aging, and Food Choices of Baby Boomer and Older Women in Manitoba.* Retrieved from MSpace. http://hdl.handle.net/1993/23828

Martijn, C., Alleva, J. M., & Jansen, A. (2015). Improving body satisfaction: Do strategies targeting the automatic system work? *European Psychologist 20*(1), 62-71. doi: 10.1027/1016-9040/a000206

McKinley, N. M. (2006). The developmental and cultural contexts of objectified body consciousness: A longitudinal analysis of two cohorts of women. *Developmental Psychology, 42*(4), 679-687. doi: 10.1037/0012-1649.42.4.679

Murray, T., & Lewis, V. (2014). Gender-role conflict and men's body satisfaction: The moderating role of age. *Psychology of Men & Masculinity 15*(1), 40-48. doi: 10.1037/a0030959

Muise, A., & Desmarais, S. (2010). Women's perceptions and use of "anti-aging" products. *Sex Roles, 63*(1), 126-137. doi: 10.1007/s11199-010-9791-5

Myers, T. A., & Crowther, J. H. (2007). Sociocultural pressures, thin-ideal internalization, self-objectification, and body dissatisfaction: Could feminist beliefs be a moderating factor? *Body Image, 4*(3), 296-308. doi: 10.1016/j.bodyim.2007.04.001

Osteoporosis Canada (Accessed June 29, 2018). Retrieved from https://osteoporosis.ca/bone- health-osteoporosis/calcium-and-vitamin-d/

Peat, C. M., Peyerl, N., & Muehlenkamp, J. (2008). Body image and eating disorders in older adults: A review. *The Journal of General Psychology, 133*(4), 343-358. Doi: 10.3200/GENP.135.4.343-358

Pelletier, S., Kundrat, S., & Hasler, C. M. (2002). Effects of an educational program on intent to consume functional foods. *Journal of the American Dietetic Association, 102*(9), 1297-1300. doi: 10.1016/S0002-8223(02)90286-5

Polivy, J., Herman, P., Trottier, K., Sidhu, R. (2013). Who are you trying to fool?: Does weight underreporting by dieters reflect self-protection or self-presentation? *Health Psychology Review 8*(3), 319-338. doi: 10.1080/17437199.2013.775630

Raghavendra, D., & Antony, G. M. (2011). Categorical data analysis. *Applied Clinical Trials, 20*(5), 46-48, 50-51. Retrieved from http://uml.idm.oclc.org/login?url=https://search-proquest-com.uml.idm.oclc.org/docview/870070434?accountid=14569

Remennick, L. (1999). Women of the "sandwich" generation and multiple roles: The case of

Russian immigrants of the 1990s in Israel. *Sex Roles, 40*(5), 347-378. doi: 10.1023/A:1018815425195

Rodgers, R. F., Paxton, S. J., McLean, S. A., & Damiano, S. R. (2016). "Does the voice in your head get kinder as you get older?" Women's perceptions of body image in midlife. *Journal of Women & Aging, 28*(5), 395-402. doi: 10.1080/08952841.2015.1018034

Sabik, N. J. (2013). Psychological well-being among late middle-aged African American and European American women. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 70*(2), 189-199. doi: 10.1093/geronb/gbt080

Sabik, N. J., & Cole E. R. (2017). Growing older and staying positive: Associations between diverse aging women's perceptions of age and body satisfaction. *Journal of Adult Development 24*(3), 177-188. doi: 10.1007/s10804-016-9256-3

Sarwer, D. B., & Crerand, C. E. (2004). Body image and cosmetic medical treatments. *Body Image, 1*(1), 99-111. doi: 10.1016/S1740-1445(03)00003-2

Siró I., Kápolna E., Kápolna B., & Lugasi A. (2008). Functional food. Product development, marketing and consumer acceptance: A review. *Appetite 51*(3), 456-67. doi: 10.1016/j.appet.2008.05.060

Slevec, J., & Tiggemann, M. (2010). Attitudes toward cosmetic surgery in middle-aged women: Body image, aging anxiety, and the media. *Psychology of Women Quarterly, 34*(1), 65-74. doi: 10.1111/j.1471-6402.2009.01542.x

Slevec, J., & Tiggemann, M. (2011). Media exposure, body dissatisfaction, and disordered eating in middle-aged women: A test of the sociocultal model of disordered eating. *Psychology of Women Quarterly, 35*(4), 617-627. doi: 10.1177/0361684311420249

Statistics Canada. (2018, January 25). *Tackling obesity in Canada: Obesity and excess weight rates in Canadian adults*. Retrieved from https://www.canada.ca/en/public-health/services/publications/healthy-living/obesity-excess-weight-rates-canadian-adults.html

Statistics Canada. (2017a, May 3). *Age and sex, and type of dwelling data: Key results from the 2016 census*. Retrieved from http://www.statcan.gc.ca/daily-quotidien/170503/dq170503a-eng.htm

Statistics Canada. (2017b, May 1). *Data Tables, 2016 Census.* Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/dt-td/Rp-eng.cfm?TABID=2&LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GK=0&GRP=1&PID=109523&PRID=10&PTYPE=109445&S=0&SHOWALL=0&SUB=0&Temporal=2016&THEME=115&VID=0&VNAMEE=&VNAMEF=

Statistics Canada. (2016a, March 30). *Senior Women.* Retrieved from
https://www150.statcan.gc.ca/n1/pub/89-503-x/2015001/article/14316-eng.htm

Statistics Canada. (2016b, March 3). *Female Population.* Retrieved from
https://www150.statcan.gc.ca/n1/pub/89-503-x/2015001/article/14152-eng.htm

Statistics Canada. (2015, December 21). *Generations in Canada.* Retrieved from
https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-311-x/98-311-x2011003_2-eng.cfm

Statistics Canada. (2014, October 29). *Canadian Health Measures Survey: Household and Physical Measures Data, 2012 to 2013.* Retrieved from http://www.statcan.gc.ca/daily-quotidien/141029/dq141029c-eng.htm

Stronge, S., Greaves, L. M., Milojev, P., West-Newman, T., Barlow, F. K., & Sibley, C. G. (2015). Facebook is linked to body dissatisfaction: Comparing users and non-users. *Sex Roles, 73*(5), 200-213. doi: 10.1007/s11199-015-0517-6

Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the international body project I. *Personality and Social Psychology Bulletin, 36*(3), 309-325. doi: 10.1177/0146167209359702

Tiggemann, M. (2005) Television and adolescent body image: The role of program content and viewing motivation. *Journal of Social and Clinical Psychology, 24*, 361-381. doi: 10.1521/jscp.24.3.361.65623

Urquhart, C. S. & Mihalynuk, T. V. (2011). Disordered eating in women: Implications for the obesity pandemic. *Canadian Journal of Dietetic Practice and Research 71*(1), 115-125. doi: 10.3148/72.1.2011.50

Webster, J., Tiggemann, M. (2003). The relationship between women's body satisfaction and self-image across the life span: The role of cognitive control. *The Journal of Genetic Psychology 164*(2), 241-252. doi: 10.1080/00221320309597980

Wilcox, S. (1997). Age and gender in relation to body attitudes: Is there a double standard of aging? *Psychology of Women Quarterly, 21*(4), 549-565. doi: 10.1111/j.1471-6402.1997.tb00130.x

Winterich, J. A. (2007). Aging, femininity, and the body: What appearance changes mean to women with age. *Gender Issues, 24*(3), 51-69. doi: 10.1007/s12147-007-9045-1

Appendix A: Recruitment Script

Perceptions of Body Image and Food Choices among Rural and Urban Baby Boomer Women
Recruitment Script

Hello. My name is Dr. Christina Lengyel and I am a researcher at the University of Manitoba working on the study: Perceptions of Body Image and Food Choices among Rural and Urban Baby Boomer Women. The purpose of this study is to identify perceptions of body image and determine food choices of baby boomer women to inform health professionals, such as registered dietitians. I am contacting you asking if you would like to participate in a 20-25 minute online survey about your body image perceptions, weight attitudes, and eating behaviors. This survey is important as it asks questions about how different factors influence food choices and preference for local, organic and functional food products. The purpose of this survey is to learn more about food choice and nutrition experiences among baby boomer women in Manitoba. Do you have any questions about the study or the survey process? Have I answered all of your questions to your satisfaction? Would you be interested in participating?

YES / NO

If YES: Thanks again for your participation in the Perceptions of Body Image and Food Choices among Rural and Urban Baby Boomer Women Study. We value your enthusiasm and insight. Your email address will be used to inform you of the release of the online survey in the next two weeks. I would like to confirm your current email address with you.
Current Email Address: _____
Thank you, have a wonderful day!

If NO: Thanks so much for taking the time to speak with me this morning /afternoon. Have a wonderful day!

Appendix B: Recruitment Poster

Women Participants Needed for a University of Manitoba Research Study!

We are seeking opinions on body image and food choices among baby boomer women

You are eligible to participate if you meet the following criteria:

- Born between 1946 and 1965 (50-69 years of age)
- Reside in a rural or urban communities in Manitoba
- Complete a 20-25 minute survey online in October 2015

After completion of the survey, participants will be entered into a draw for one of twenty-five draws for local grocery store gift cards ranging from $25 -$100, as a token of appreciation. In addition, all participants will be entered for an early bird prize (iPad mini worth approx. $400) as incentive to complete the survey within the first week of its release online.

This research is funded by the Canadian Foundation for Dietetic Research

For more information, contact:
Name: Christina Lengyel

UNIVERSITY of MANITOBA | Faculty of Agricultural and Food Sciences

Appendix C: Body Image and Food Choice Survey

Body Image and Food Choice Survey

Instructions:

- Please respond to the following questions by filling in the blank or circling the letter next to the best answer.
- Your answers are very important and will be kept strictly anonymous and confidential.

1. Please provide your year of birth: _____

2. What are the first three characters of your postal code? _____

3. What is your current relationship status?
   a. Single
   b. Common-law partner
   c. Legally married (and not separated)
   d. Separated, but still legally married
   e. Divorced
   f. Widowed
   g. Other:_____

4. Select the ethnic backgrounds you identify with: (Circle the letter or number next to **all** of the responses that apply.)
   a. Aboriginal or Indigenous (please be more specific by circling or adding information)
       i. First Nation Status
       ii. First Nation Non-Status
       iii. Métis
       iv. Inuit
       v. Other Aboriginal or Indigenous: (please specify) _____
   b. North American (*Examples:* Canada, United States of America, Bermuda)
   c. Latin American/Caribbean (*Examples:* Mexico, Argentina, Barbados)
   d. European (*Examples:* Poland, Norway, Spain, Netherlands, Germany, Russia)
   e. African (*Examples:* Ethiopia, Congo, Egypt, Botswana, South Africa)
   f. Asian (*Examples:* Kazakhstan, China, Afghanistan, Philippines, Turkey, Iraq)
   g. Polynesian (*Examples:* Australia, Fiji, Cook Islands, New Zealand)

5. Including yourself, how many persons live with you (3 days per week or more)?_____

6. How many people in each of the age groups below live with you? Please include yourself when answering this question.

   a. 0-2 years   _____   **f.** 31- 49 years _____
   b. 3-6 years   _____   **g.** 50-69 years _____
   c. 7-12 years   _____   **h.** 70-80 years _____
   d. 13-18 years _____   **i.** 81-90 years _____
   e. 19- 30 years _____   **j.** 91 years and older _____

7. What is your annual household income (before taxes)?

   a. Less than $19,999   **e.** $80,000 to $99,999
   b. $20,000 to $39,999   **f.** $100,000 to $149,999
   c. $40,000 to $59,999   **g.** $150,000 or more
   d. $60,000 to $79,999

8. What is the highest level of education you have achieved?

   a. Less than High School   **e.** University (Bachelor Degree)
   b. High School Diploma   **f.** Graduate Degree (Masters or Doctorate)
   c. Vocational/Trade   **g.** Other (specify):_____
   d. College (Diploma/Certificate)

9. Which of the following best describes your cigarette smoking?

   a. I currently smoke cigarettes
   b. I quit smoking cigarettes
   c. I have never smoked cigarettes
   d. Other: _____

10. How would you describe your health compared to others your age?

   a. Excellent   **d.** Fair
   b. Very Good   **e.** Poor
   c. Good

11. *Without using a scale*, estimate what you weigh today: _____ pounds **OR** _____ kilograms

12. How much would you *ideally* like to weigh? _____ pounds **OR** _____ kilograms

13. How satisfied are you with your *current body weight*?
   a. Very satisfied
   b. Moderately satisfied
   c. Neutral
   d. Moderately dissatisfied
   e. Very dissatisfied

14. How satisfied are you with your *overall appearance*?
   a. Very satisfied
   b. Moderately satisfied
   c. Neutral
   d. Moderately dissatisfied
   e. Very dissatisfied

15. I am worried about the impact of aging on my overall appearance.
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree

16. During a typical day, how often do you think about your appearance?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely
   e. Never

17. How frequently do you feel self-conscious about your body size/shape when in the company of others (Examples: at the beach, in public change rooms, at the gym, etc.)?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely
   e. Never

18. How frequently do you feel pressure from the media (television, magazines, radio, internet advertisements, etc.) to look a certain way for acceptance?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely
   e. Never

19. Do you feel pressure from others to look a certain way for acceptance?
   a. Yes (Please answer the next question.)
   b. No (Please go to question 20.)

19b. From whom do you feel pressure? (Circle the letter next to all that apply.)

a. Friends
b. Coworkers
c. Peers
d. Spouse
e. Parent(s)

f. Siblings
g. Children
h. Other family members
i. Other:_____

20. Which of the following body work applications have you **_used_** to alter or enhance your appearance (excluding health reasons)? (Circle the letter next to all that apply.)

> *Body work are practices undertaken that aim to modify or maintain some aspect of the body*

a. Wearing make-up
b. Wearing shape forming undergarments (e.g., Spanx®)
c. Breast augmentation or reduction
d. Eye wrinkle removal
e. Mole removal
f. Botox injections
g. Esthetic services (e.g., regular skin and nail services and/or hair removal)
h. Tummy tuck

i. Nose reshaping
j. Liposuction
k. Varicose vein treatments
l. Facelift
m. Eyelid surgery
n. Dental work
o. Piercings
p. Tattoos
q. Other : please specify_____
r. None of the above

21. Which of the following body work applications have you **_considered_** to alter or enhance your appearance (excluding health reasons)? (Circle the letter next to all that apply.)

> *Body work are practices undertaken that aim to modify or maintain some aspect of the body*

a. Wearing make-up
b. Wearing shape forming undergarments (e.g., Spanx®)
c. Breast augmentation or reduction
d. Eye wrinkle removal
e. Mole removal
f. Botox injections
g. Esthetic services (e.g., regular skin and nail services and/or hair removal)
h. Tummy tuck

i. Nose reshaping
j. Liposuction
k. Varicose vein treatments
l. Facelift
m. Eyelid surgery
n. Dental work
o. Piercings
p. Tattoos
q. Other: please specify_____
r. None of the above

22. How often do you use products that claim to minimize the signs of aging? (Examples: anti-aging   skin creams, pills, cosmetic products, etc.)

a. Daily (6 – 7 times a week)
b. 3 – 5 times a week
c. 1 – 2 times a week
d. 2 – 3 times a month
e. Once a month or less
f. Never
g. Not sure

23. Do your feelings about your body size/shape prevent you from participating in activities you enjoy?

a. Yes (Please answer the next question.)
b. No (Please go to question 24.)

23b. Which of the following activities do your feelings about your body size/shape prevent you from participating in? (Circle the letter next to all that apply.)

a. Shopping
b. Going out with others/spouse
c. Playing sports
d. Cooking
e. Going to the pool or beach
f. Flying on a plane
g. Going out for dinner
h. Entertaining others at your home
i. Taking a vacation
j. Playing with your children or grandchildren
k. Exercising
l. Going to the gym
m. Other:_____

24. Within the past year, how frequently have you controlled, restricted or reduced your food intake *in an effort to lose weight?*

a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

25. Currently, are there specific foods that you do not eat or eat very little of in an effort to look better?

a. Yes; specify which foods:_____
b. No

26. Have you participated in a formal weight loss program or diet plan within the past 5 years? (Examples: Weight Watchers®, Atkins®, South Beach Diet®, Jenny Craig®, Herbal Magic®, etc.)

a. Yes
b. No

27. Do you participate in physical activity to:

    a. Stay healthy

    b. Lose weight

    c. Both: stay healthy *and* lose weight

    d. Other; specify:_____

    e. I do not participate in physical activity

28. Has your participation in physical activity changed as you have gotten older?

    a. Yes; specify how:_____

    b. No

29. How often do you eat local food products?

a. Daily (6 – 7 times a week)	**e.** Once a month or less	*Local foods are ingredients or products that are grown or produced in Manitoba*
b. 3 – 5 times a week		
c. 1 – 2 times a week	**f.** Never	
d. 2 – 3 times a month	**g.** Not sure	

30. How often do you eat organic foods?

a. Daily (6 – 7 times a week)	**e.** Once a month or less	*Organic foods are produced without the use of chemicals, pesticides, chemical fertilizers, or irradiation*
b. 3 – 5 times a week		
c. 1 – 2 times a week	**f.** Never	
d. 2 – 3 times a month	**g.** Not sure	

31. How often do you use functional foods or products with added nutrients? (Examples: granola bars with flax, calcium-fortified orange juice, pro-biotic yogurt, omega-3 eggs, margarine with plant sterols, etc.)

Functional foods claim to offer unique health benefits and/or reduce the risk of chronic disease

a. Daily (6 – 7 times a week)	**e.** Once a month or less
b. 3 – 5 times a week	
c. 1 – 2 times a week	
d. 2 – 3 times a month	**f.** Never
	g. Not sure

32. How often do you use foods or supplements that claim to aid in weight loss? (Examples: products with 'diet', 'weight loss', 'Weight Watchers®', 'low-calorie', 'low-fat' on the label).

a. Daily (6 – 7 times a week)	**e.** Once a month or less
b. 3 – 5 times a week	**f.** Never
c. 1 – 2 times a week	**g.** Not sure
d. 2 – 3 times a month	

33. How frequently does the media (television, magazines, radio, internet advertisements, etc.) influence your food choices (Examples: eating organic, local, gluten free, etc.)?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely
   e. Never

34. Are there people in your life that influence your food choices?
   a. Yes (Please answer the next question.)
   b. No (Please go to question 35.)

34b. Which of the following people influence your food choices?
   a. Friends   **e.** Parent(s)
   b. Coworkers   **f.** Children
   c. Peers   **g.** Other family members
   d. Spouse   **h.** Other:_____

35. Who regularly prepares your meals (at least once per day)? Circle all that apply.
   a) Myself   **f)** Parents
   b) Spouse or common-law partner   **g)** Grandparents
   c) Roommate   **h)** Friends
   d) Children   **i)** Community members
   e) Grandchildren   **j)** Other: _____

36. Who do you regularly prepare meals for (at least once per day)? Circle all that apply.
   f) Myself   **f)** Parents
   g) Spouse or common-law partner   **g)** Grandparents
   h) Roommate   **h)** Friends
   i) Children   **i)** Community members
   j) Grandchildren   **j)** Other: _____

For the last few questions, please draw a tick mark to indicate your response as shown in the example below.

EXAMPLE:

Are you experiencing any pain today?

If you felt some mild discomfort but no real pain, you may respond by making a mark on the line as shown below:

No
pain |———————————/——————————| Extreme
pain

37. On an average day, how stressed do you feel about your appearance?

Not at all
stressed |————————————————————| Extremely
stressed

38. How important is your overall appearance to you?

Not at all
important |————————————————————| Very
important

39. How healthy is your diet?

Not
healthy |————————————————————| Very
healthy

40. How important do you think nutrition is in healthy aging?

Not at all
important |————————————————————| Very
important

41. How important to you is the availability of current information about food choices and body image?

> *Body image is how you see yourself when you look in the mirror.*

Not at all
important |————————————————————| Very
important

42. How important is what you currently eat and drink to your body image?

> *Body image is how you see yourself when you look in the mirror.*

Not at all
important |————————————————————| Very
important

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43. How important is what you currently eat and drink to your overall appearance?

Not at all important |——————————————————————————| Very important

44. How important is physical activity to your overall appearance and body image?

> *Body image is how you see yourself when you look in the mirror*

Not at all important |——————————————————————————| Very important

45. How important are body work practices to your self-esteem?

Not at all important |——————————————————————————| Very important

> *Body work are practices undertaken that aim to modify or maintain some aspect of the body. E.g., wearing makeup, wearing shape forming undergarments, Botox injections, cosmetic surgery, dental work, etc.*

46. In your community, are there appropriate nutrition services and resources, specific to food choices and body image for women?

a) Yes: (specify type _____)
b) No: (what is needed? _____)
c) Don't know

Thank you for your time.

Please place this completed survey into the postage-paid pre-addressed envelope that is labelled "SURVEY". To qualify for the early bird prize, please have the letter postmarked before November 17, 2015.   In order to take advantage of the remaining 25 prize draws, your survey must be postmarked by November 20, 2015.

Appendix D: Participant Consent Form

Faculty of Agriculture and Food Sciences
Human Nutritional Sciences
INFORMED CONSENT FORM

Research Project Title: Perceptions of Body Image and Food Choices among Rural and Urban Baby Boomer Women

Funding Source: Canadian Foundation for Dietetic Research

Principal Investigator: Dr. Christina Lengyel

This consent form, a copy of which can be printed for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

If you would like more detail about something mentioned here, or any additional information not included here, please feel free to ask or contact Christina Lengyel at ▮▮▮▮▮▮▮▮ or by email at ▮▮▮▮▮▮▮▮▮▮▮▮▮▮

The purpose of this study is to identify perceptions of body image and determine food choices of baby boomer women for dissemination to health professionals (i.e., registered dietitians).

The objectives of this study are: 1) To examine body image perceptions, weight attitudes, and eating behaviors of baby boomer women residing in Manitoban rural and urban communities. 2) To examine how these factors influence food choices and preference for local, organic and functional food products. 3) To prepare and conduct workshops to educate registered dietitians about issues related to body image, food choices and counselling strategies for baby boomer women.

The study involves the following:

1. *A Body Image and Food Choice Survey*: Participants will complete the survey using FluidSurveys^{TM}. It will take approximately 20-25 minutes to complete.

After completion of the survey, participants will be entered into a draw for one twenty-five draws for local grocery store gift cards in dominations ranging from $25 -$100, as a token of appreciation. In addition, all participants will be entered for an early bird prize (iPad mini worth approx. $400) as incentive to complete the survey within the first week of its release online. To receive a summary of the results from the survey complete the section at the end of this consent form.

All of the data from the surveys will be accessed through FluidSurveysTM via encrypted files which are accessible to the researcher only. The survey data will be permanently erased from

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FluidSurveysTM databases within a year of data collection, and the data stored at the University of Manitoba will be destroyed within five years or one year after initial publication, whichever comes first. All of the encrypted files (consent forms and survey) will be stored on a password protected computer in a locked room that is accessible to the researcher only.

Your approval on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Joint-Faculty Research Board of Ethical Review at the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at ████ A copy of this consent form has been given to you to keep for your records and reference.

Please click on one of the following statements before proceeding:

□ Yes, I agree to participate in this study □ No, I do not want to participate in this study

If yes, please fill out the information below.

_____

Participant's Name Date

_____

Researcher and/or Delegate's Name Date

FOR A COPY OF THE STUDY RESULTS PLEASE COMPLETE THE FOLLOWING:

_____

Name (Please Print)

Preferred Email Address:

_____ E-mail Address

Appendix E: Recoded and Newly Created Variables

Appendix E. Summary of Recoded and Newly Created Variables

Survey Question	Original Variable	Variable Label	Variable Categories	Collapsed Variable Categories	Recoded Variable
3	q_q3_score	Relationship status	1= Single	1= Single	q_q3_recode
			2= Common-law partner[a] 3= Legally married and not separated	2= Common-law OR Married	
			4= Separated, but legally married 5= Divorced	3= Separated OR Divorced	
			6= Widowed	4= Widowed	
			7= Other	5= Other	
5	q_q5_score	Number of persons one lives with	1= 1	1= 1	q_q5_recode
			2= 2	2= 2	
			3= 3	3= 3	
			4= 4 5= 5 6= 6 7= 7	4= 4 or more	
7	q_q7_score	Household income	1= Less than $20,000 2= $20,000 - $39,999	1= $39,999 or less	q_q7_recode
			3= $40,000 - $59,999	2= $40,000 - $59,999	
			4= $60,000 - $79,999	3= $60,000 - $79,999	
			5= $80,000 - $99,999	4= $80,000 - $99,999	
			6= $100,000 - $149,999	5= $100,000 - $149,999	
			7= $150,000 or more	6= $150,000 or more	
8	q_q8_score	Level of education	1= Less than high school 2= High school diploma	1= High school or less	q_q8_recode
			3= Vocational/Trade	2= Vocational/trade	
			4= College (diploma/certificate)	3= College (diploma/certificate)	
			5= University (Bachelor degree)	4= University (Bachelor degree)	
			6= Graduate degree (Masters or Doctorate)	5= Graduate degree (Masters or Doctorate)	
			7= Other	6= Other	

10	q_q10_score	Self-rated health	1= Excellent	1= Excellent	q_q10_recode
			2= Very good	2= Very good	
			3= Good	3= Good	
			4= Fair 5= Poor	4= Fair to Poor	
13	q_13_score	Body weight satisfaction	1= Very satisfied 2= Moderately satisfied	1= Satisfied	q_q13_recode
			3= Neutral	2= Neutral	
			4= Moderately dissatisfied 5= Very dissatisfied	3= Dissatisfied	
14	q_q14_score	Overall appearance satisfaction	1= Very satisfied 2= Moderately satisfied	1= Satisfied	q_q14_recode
			3= Neutral	2= Neutral	
			4= Moderately dissatisfied 5= Very dissatisfied	3= Dissatisfied	
15	q_q15_score	Impact of aging on appearance	1= Strongly agree 2= Agree	1= Agree	q_q15_recode
			3= Neutral	2= Neutral	
			4= Disagree 5= Strongly disagree	3= Disagree	
16	q_q16_score	Appearance preoccupation	1= Always 2= Often	1= Frequently	q_q16_recode
			3= Sometimes	2= Sometimes	
			4= Rarely 5= Never	3= Rarely to Never	
17	q_q17_score	Appearance anxiety	1= Always 2= Often	1= Frequently	q_q17_recode
			3= Sometimes	2= Sometimes	
			4= Rarely 5= Never	3= Rarely to Never	

18	q_q18_score	Media pressure on appearance	1= Always 2= Often 3= Sometimes 4= Rarely 5= Never	1= Frequently 2= Sometimes 3= Rarely 4= Never	q_q18_recode
22	q_q21_score	Use of anti-aging products	1= Daily (6-7 times a week) 2= 3-5 times a week 3= 1-2 times a week 4= 2-3 times a month 5= Once a month or less 6= Never 7= Not sure	1= Daily (6-7 times a week) 2= 3-5 times a week 3= 1-2 times a week 4= 3 times a month or less 5= Never 6= Not sure	q_q21_recode
29	q_q28_score	Consumption of local foods	1= Daily (6-7 times a week) 2= 3-5 times a week 3= 1-2 times a week 4= 2-3 times a month 5= Once a month or less 6= Never 7= Not sure	1= Daily (6-7 times a week) 2= Weekly (1-5 times a week) 3= 3 times a month or less 4= Never 5= Not sure	q_q28_recode
30	q_q29_score	Consumption of organic foods	1= Daily (6-7 times a week) 2= 3-5 times a week 3= 1-2 times a week 4= 2-3 times a month 5= Once a month or less 6= Never 7= Not sure	1= Daily (6-7 times a week) 2= weekly (1-5 times a week) 3= 3 times a month or less 4= Never 5= Not sure	q_q29_recode
31	q_q30_score	Consumption of functional foods	1= Daily (6-7 times a week) 2= 3-5 times a week 3= 1-2 times a week 4= 2-3 times a month 5= Once a month or less 6= Never 7= Not sure	1= Daily (6-7 times a week) 2= weekly (1-5 times a week) 3= 3 times a month or less 4= Never 5= Not sure	q_q30_recode

			1= Daily (6-7 times a week)	1= Daily (6-7 times a week)	
32	q_q31_score	Consumption of foods and/or supplements for weight loss	2= 3-5 times a week 3= 1-2 times a week	2= weekly (1-5 times a week)	q_q31_recode
			4= 2-3 times a month 5= Once a month or less	3= 3 times a month or less	
			6= Never	4= Never	
			7= Not sure	5= Not sure	
33	q_q32_score	Media influence on food choices	1= Always 2= Often 3= Sometimes	1= Sometimes to always	media_food
			4= Rarely	2= Rarely	
			5= Never	3= Never	

Created Variable	Created From	Variable Label	Measure	Variable Categories
agein2015	q_q1_score	Age in 2015	Scale	n/a
olderyounger	agein2015	Age category	Nominal	1= 1946-1955 2= 1956-1965
ruralurban	q_q2_score	Location of residence	Nominal	1= Rural 2= Urban
DWC[b]	estwgtlbs deswgtlbs	Desired weight change	Scale	Weight (in pounds)
deswtchgn	DWC	Type of weight change	Ordinal	1= Want to gain weight 2= Want to maintain estimated weight 3= Want to lose weight

[a]Example of how collapsed variables were created in Table: 2-common-law, 3-legally married and not separated (variable categories) changed to: 2-common-law OR married (collapsed variable category)

[b]Negative values corresponded to wanting to gain weight, zero corresponded to wanting to maintain estimated weight, and positive values were associated with wanting to lose weight

Appendix F: Distribution of Desired Weight Change Variable

Histogram

Mean = 26.94
Std. Dev. = 29.456
N = 1,080

Desired weight change (number of pound change)
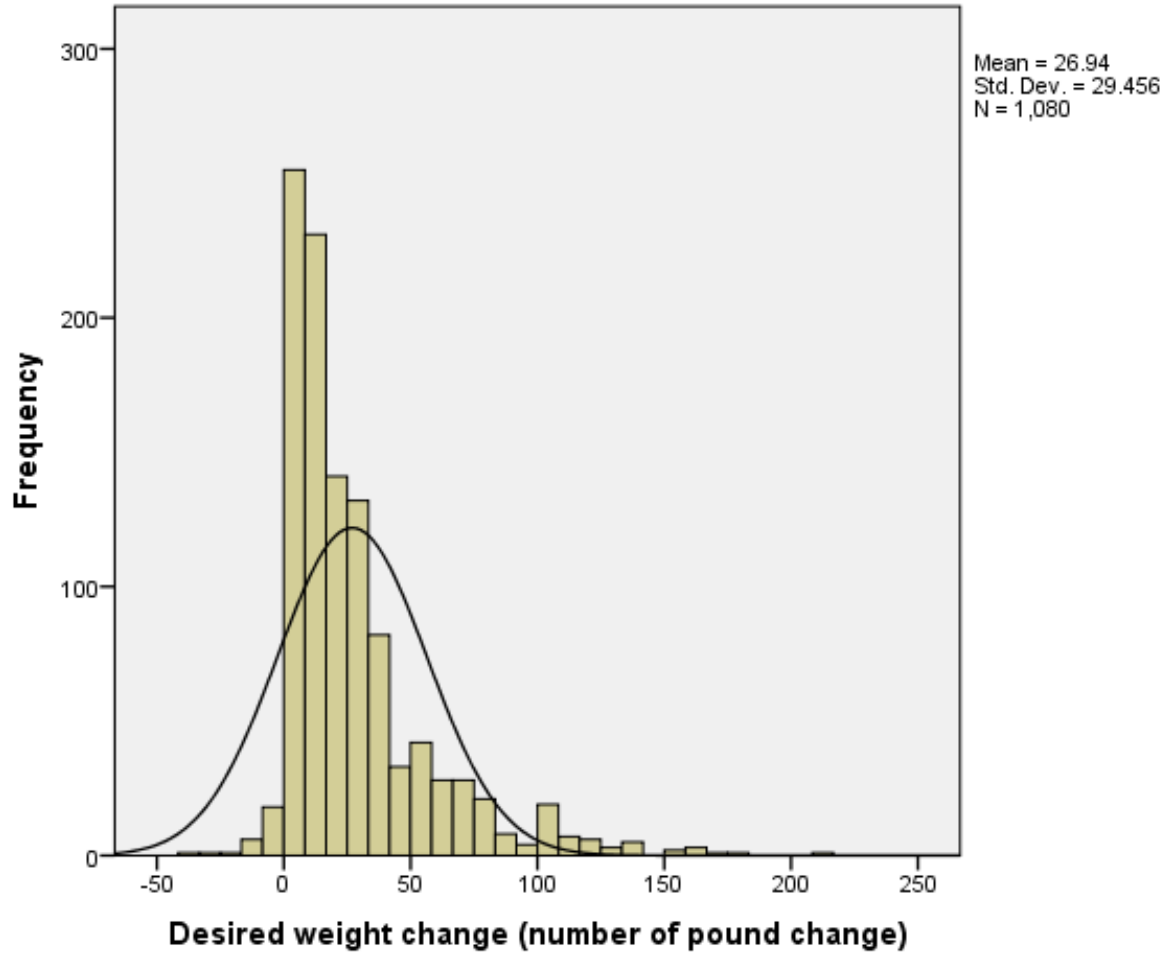
Appendix G: Raw Data Table: Participant Characteristics

Appendix G. Raw Data Tables: Participant Characteristics

Variable	Total Participants Overall n = 1083	OBBW[a] Overall n = 547	YBBW[b] Overall n = 536
Location of Residence	% (n)	% (n)	% (n)
Urban[c]	62.4 (676)	61.1 (334)	63.8 (342)
Rural[d]	37.6 (407)	38.9 (213)	36.2 (194)
Relationship Status	% (n)	% (n)	% (n)
Single	9.7 (105)	8.8 (48)	10.7 (57)
Common-law partner	5.1 (55)	3.8 (21)	6.3 (34)
Legally married (and not separated)	66.2 (717)	64.9 (355)	67.5 (362)
Separated (and still legally married)	2.7 (29)	1.5 (8)	3.9 (21)
Divorced	9.9 (107)	10.8 (59)	9.0 (48)
Widowed	6.4 (69)	10.1 (55)	2.6 (14)
Other	0.1 (1)	0.2 (1)	0.0 (0)
Ethnicity[e]	% (n)	% (n)	% (n)
Aboriginal or Indigenous	4.1 (49)	4.3 (26)	3.8 (23)
North American	73.9 (888)	73.8 (445)	74.1 (443)
Latin American/Caribbean	0.5 (6)	0.3 (2)	0.7 (4)
European	20.9 (251)	21.4 (129)	20.4 (122)
African	0.2 (2)	0.2 (1)	0.2 (1)
Asian	0.5 (6)	0.0 (0)	1.0 (6)
Polynesian	0.0 (0)	0.0 (0)	0.0 (0)
Number of persons (including self) that live with you ($\geq$ 3 days/week)			
Mean (SD)	2.1 (1.0)	1.8 (0.8)	2.4 (1.1)
Range	1 – 7	1 – 7	1 – 7
Annual Household Income (before taxes)	% (n)	% (n)	% (n)
< $20,000	3.2 (35)	4.0 (22)	2.4 (13)
$20,000 - $39,99	12.7 (137)	18.5 (101)	6.7 (36)
$40,000 - $59,999	21.2 (230)	24.7 (135)	17.7 (95)
$60,000 - $79,999	19.9 (215)	20.8 (114)	18.8 (101)
$80,000 - $99,999	15.8 (171)	14.4 (79)	17.2 (92)
$100,000 - $149,999	17.3 (187)	12.2 (67)	22.4 (120)
$\geq$ $150,000	10.0 (108)	5.3 (29)	14.7 (79)

Highest Level of Education	% (n)	% (n)	% (n)
< High School	3.4 (37)	4.0 (22)	2.8 (15)
High School Diploma	21.6 (234)	20.1 (110)	23.1 (124)
Vocational/Trade	6.1 (66)	7.3 (40)	4.9 (26)
College (Diploma/Certificate)	30.4 (329)	30.2 (165)	30.6 (164)
University (Bachelor Degree)	28.9 (313)	28.9 (158)	28.9 (155)
Graduate Degree (Masters or Doctorate)	8.9 (96)	8.8 (48)	9.0 (48)
Other	0.7 (8)	0.7 (4)	0.7 (4)
Cigarette Smoking Status	**% (n)**	**% (n)**	**% (n)**
Currently Smoke Cigarettes	9.8 (106)	9.1 (50)	10.4 (56)
Quit Smoking Cigarettes	39.2 (425)	42.0 (230)	36.4 (195)
Never Smoked Cigarettes	48.4 (524)	45.7 (250)	51.1 (274)
Other	2.6 (28)	3.1 (17)	2.1 (11)
Self-rated Health	**% (n)**	**% (n)**	**% (n)**
(How would you describe your health compared to others your age?)			
Excellent	13.9 (151)	15.2 (83)	12.7 (68)
Very Good	40.6 (440)	41.1 (225)	40.1 (215)
Good	33.0 (357)	33.1 (181)	32.8 (175)
Fair	9.7 (105)	8.4 (46)	11.0 (59)
Poor	2.8 (30)	2.2 (12)	3.4 (18)

[a]Born between 1946-1955 (60-69 years of age, in 2015)
[b]Born between 1956-1965 (50-59 years of age, in 2015)
[c]Within the Winnipeg perimeter
[d]Within Manitoba, outside the Winnipeg perimeter
[e]Multiple response question – participants selected all responses that applied to their self-identified ethnic background. Total participant responses = 1202, older BBW responses = 603, younger BBW responses = 599.

***Appendix H: Raw Data Table: Comparison of Participant Characteristics by Age Category
and Location of Residence***

Appendix H. Raw Data Table: Comparison of Participant Characteristics by Age Category and Location of Residence

Variable	Urban[a]			Rural[b]		
	Total **n = 676**	**OBBW[c]** **n = 334**	**YBBW[d]** **n = 342**	**Total** **n = 407**	**OBBW[c]** **n = 213**	**YBBW[d]** **n = 194**
Age	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
	100 (676)	49.4 (334)	50.6 (342)	100 (407)	52.3 (213)	47.7 (194)
Relationship Status	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Single	12.4 (84)	11.4 (38)	13.5 (46)	5.2 (21)	4.7 (10)	5.7 (11)
Common-law partner	5.3 (36)	4.5 (15)	6.1 (21)	4.7 (19)	2.8 (6)	6.7 (13)
Legally married (and not separated)	59.5 (402)	57.2 (191)	61.7 (211)	77.4 (315)	77.0 (164)	77.8 (151)
Separated (and still legally married)	3.3 (22)	1.5 (5)	5.0 (17)	1.7 (7)	1.4 (3)	2.1 (4)
Divorced	13.5 (91)	15.6 (52)	11.4 (39)	3.9 (16)	3.3 (7)	4.6 (9)
Widowed	5.9 (40)	9.6 (32)	2.3 (8)	7.1 (29)	10.8 (23)	3.1 (6)
Other	0.1 (1)	0.3 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Ethnicity[e]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Aboriginal or Indigenous	3.8 (29)	5.1 (19)	2.6 (10)	4.5 (20)	3.0 (7)	6.0 (13)
North American	73.6 (555)	71.7 (267)	75.4 (288)	74.3 (333)	77.1 (178)	71.4 (155)
Latin American/Caribbean	0.7 (5)	0.5 (2)	0.8 (3)	0.2 (1)	0.0 (0)	0.5 (1)
European	21.0 (158)	22.6 (84)	19.4 (74)	20.6 (93)	19.5 (45)	22.1 (48)
African	0.1 (1)	0.0 (0)	0.3 (1)	0.2 (1)	0.4 (1)	0.0 (0)
Asian	0.8 (6)	0.0 (0)	1.6 (6)	0.0 (0)	0.0 (0)	0.0 (0)
Polynesian	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Number of persons (including self) that live with you ($\geq$ 3 days/week)						
Mean (SD)	2.1 (1.1)	1.7 (0.9)	2.4 (1.2)	2.1 (0.9)	1.8 (0.	2.4 (1.1)
Range	1 – 7	1 – 7	1 – 7	1 – 7	1 – 5	1 – 7
Annual Household Income (before taxes)	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
< $20,000	4.1 (28)	5.4 (18)	2.9 (10)	1.7 (7)	1.9 (4)	1.5 (3)
$20,000 - $39,999	12.3 (83)	18.0 (60)	6.7 (23)	13.3 (54)	19.2 (41)	6.7 (13)
$40,000 - $59,999	18.2 (123)	21.9 (73)	14.6 (50)	26.3 (107)	29.1 (62)	23.2 (45)
$60,000 - $79,999	19.2 (130)	19.8 (66)	18.7 (64)	20.9 (85)	22.5 (48)	19.1 (37)
$80,000 - $99,999	14.9 (101)	14.4 (48)	15.5 (53)	17.2 (70)	14.6 (31)	20.1 (39)
$100,000 - $149,999	19.8 (134)	14.1 (47)	25.4 (87)	13.0 (53)	9.4 (20)	17.0 (33)
$\geq$ $150,000	11.4 (77)	6.6 (22)	16.1 (55)	7.6 (31)	3.3 (7)	12.4 (24)

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Highest Level of Education	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
< High School	2.2 (15)	2.4 (8)	2.0 (7)	5.4 (22)	6.6 (14)	4.1 (8)
High School Diploma	20.1 (136)	18.9 (63)	21.3 (74)	24.1 (98)	22.1 (47)	26.3 (51)
Vocational/Trade	5.5 (37)	7.2 (24)	3.8 (13)	7.1 (29)	7.5 (16)	6.7 (13)
College (Diploma/Certificate)	28.4 (192)	28.7 (96)	28.1 (96)	33.7 (137)	32.4 (69)	35.1 (68)
University (Bachelor Degree)	32.2 (218)	31.1 (104)	33.3 (114)	23.3 (95)	25.4 (54)	21.1 (41)
Graduate Degree (Masters or Doctorate)	11.1 (75)	10.8 (36)	11.4 (39)	5.2 (21)	5.6 (12)	4.6 (9)
Other	0.4 (3)	0.9 (3)	0 (0.0)	1.2 (5)	0.5 (1)	2.1 (4)
Cigarette Smoking Status	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Currently Smoke Cigarettes	11.1 (75)	11.1 (37)	11.1 (38)	7.6 (31)	6.1 (13)	9.3 (18)
Quit Smoking Cigarettes	38.6 (261)	40.7 (136)	36.5 (125)	40.3 (164)	44.1 (94)	36.1 (70)
Never Smoked Cigarettes	47.0 (318)	44.3 (148)	49.7 (170)	50.6 (206)	47.9 (102)	53.6 (104)
Other	3.3 (22)	3.9 (13)	2.6 (9)	1.5 (6)	1.9 (4)	1.0 (2)
Self-rated Health	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
(How would you describe your health compared to others your age?)						
Excellent	14.8 (100)	18.3 (61)	11.4 (39)	12.5 (51)	10.3 (22)	14.9 (29)
Very Good	40.1 (271)	40.1 (134)	40.1 (137)	41.5 (169)	42.7 (91)	40.2 (78)
Good	33.0 (223)	31.4 (105)	34.5 (118)	32.9 (134)	35.7 (76)	29.9 (58)
Fair	8.4 (57)	6.9 (23)	9.9 (34)	11.8 (48)	10.8 (23)	12.9 (25)
Poor	3.7 (25)	3.3 (11)	4.1 (14)	1.2 (5)	0.5 (1)	2.1 (4)

[a]Within the Winnipeg perimeter
[b]Within Manitoba, outside the Winnipeg perimeter
[c]Born between 1946-1955 (60-69 years of age, in 2015)
[d]Born between 1956-1965 (50-59 years of age, in 2015)
[e]Multiple response question – participants selected all responses that applied to their self-identified ethnic background. Total urban BBW responses = 754, total older urban BBW responses = 372, total younger urban BBW responses = 382, total rural BBW responses = 448, total older rural BBW responses = 231, total younger urban BBW responses = 217.

Appendix I: Raw Data Table: Body Satisfaction, Influences on Appearance, Body Work, Aging Concerns, and Physical Activity

Appendix I. Raw Data Table: Body Satisfaction, Influences on Appearance, Body Work, Aging Concerns, and Physical Activity

Variable	Total Participants Overall n = 1083	OBBW[a] Overall n = 547	YBBW[b] Overall n = 536
Appearance Satisfaction	% (n)	% (n)	% (n)
Very Satisfied	8.9 (96)	10.2 (56)	7.5 (40)
Moderately Satisfied	44.1 (478)	47.0 (257)	41.2 (221)
Neutral	15.1 (164)	14.4 (79)	15.9 (85)
Moderately Dissatisfied	24.5 (265)	22.5 (123)	26.5 (142)
Very Dissatisfied	7.4 (80)	5.9 (32)	9.0 (48)
Stress Related to Appearance *(VAS[c] question range 0-100)*	% (n)	% (n)	% (n)
Mean Level of Stress (SD)	31.5 (27.9)	27.3 (25.9)	35.8 (29.2)
Range	1-100	1-100	1-100
Weight Satisfaction *(How satisfied are you with your current body weight?)*	% (n)	% (n)	% (n)
Very Satisfied	10.4 (113)	11.2 (61)	9.7 (52)
Moderately Satisfied	23.4 (253)	24.7 (135)	22.0 (118)
Neutral	10.7 (116)	9.9 (54)	11.6 (62)
Moderately Dissatisfied	35.4 (383)	36.4 (199)	34.3 (184)
Very Dissatisfied	20.1 (218)	17.9 (98)	22.4 (120)
Desired Weight Change (in pounds)[d]	% (n)	% (n)	% (n)
Gain Weight	2.5 (27)	3.3 (18)	1.7 (9)
Maintain Current Weight	6.7 (72)	8.2 (45)	5.1 (27)
Lose Weight	90.8 (981)	88.5 (483)	93.3 (498)
Concern about Aging *(I am worried about the impact of aging on my overall appearance)*	% (n)	% (n)	% (n)
Strongly Agree	9.1 (99)	9.0 (49)	9.3 (50)
Agree	37.0 (401)	35.8 (196)	38.2 (205)
Neutral	32.6 (353)	34.9 (191)	30.2 (162)
Disagree	17.7 (192)	17.2 (94)	18.3 (98)
Strongly Disagree	3.5 (38)	3.1 (17)	3.9 (21)

Overall Appearance Importance			
(VAS[c] question range 0-100)			
Mean Level of Stress (SD)	70.7 (22.4)	69.7 (22.7)	71.6 (22.0)
Range	1 – 100	1 – 100	1 – 100
Appearance Preoccupation	**% (n)**	**% (n)**	**% (n)**
(During a typical day, how often do you think about your appearance?)			
Always	1.6 (17)	1.6 (9)	1.5 (8)
Often	17.4 (188)	16.3 (89)	18.5 (99)
Sometimes	60.4 (654)	59.6 (326)	61.2 (328)
Rarely	19.9 (215)	21.4 (117)	18.3 (98)
Never	0.8 (9)	1.1 (6)	0.6 (3)
Appearance Anxiety	**% (n)**	**% (n)**	**% (n)**
(Do you feel self-conscious about your body shape/size in the company of others?)			
Always	11.7 (127)	10.1 (55)	13.4 (72)
Often	24.3 (263)	21.6 (118)	27.1 (145)
Sometimes	42.4 (459)	45.0 (246)	39.7 (213)
Rarely	18.6 (201)	19.2 (105)	17.9 (96)
Never	3.0 (33)	4.2 (23)	1.9 (10)
Do feelings about your body prevent participation in activities you enjoy?	**% (n)**	**% (n)**	**% (n)**
Yes	23.2 (251)	20.1 (110)	26.3 (141)
No	76.8 (832)	79.9 (437)	73.7 (395)
Pressure from the Media	**% (n)**	**% (n)**	**% (n)**
[How frequently do you feel pressure from the media (television, magazines, radio, Internet ads, etc.) to look a certain way for acceptance?]			
Always	4.9 (53)	3.5 (19)	6.3 (34)
Often	18.5 (200)	17.0 (93)	20.0 (107)
Sometimes	28.3 (307)	27.2 (149)	29.5 (158)
Rarely	34.3 (372)	36.4 (199)	32.3 (173)
Never	13.9 (151)	15.9 (87)	11.9 (64)

Do you feel pressure from others to look a certain way for acceptance?	% (n)	% (n)	% (n)
Yes	23.5 (254)	19.3 (106)	27.6 (148)
No	76.5 (829)	80.7 (441)	72.4 (388)
Pressure from Whom?[e]	**% (n)**	**% (n)**	**% (n)**
Friends	42.9 (109)	40.1 (43)	44.6 (66)
Coworkers	29.9 (76)	18.9 (20)	37.8 (56)
Peers	35.0 (89)	30.2 (32)	38.5 (57)
Spouse	32.7 (83)	32.0 (34)	33.1 (49)
Parent(s)	17.7 (45)	11.3 (12)	22.3 (33)
Siblings	23.6 (60)	25.5 (27)	22.3 (33)
Children	29.1 (74)	30.2 (32)	28.4 (42)
Other family members	29.1 (74)	28.3 (30)	29.7 (44)
Other	17.3 (44)	16.0 (17)	18.2 (27)
Body Work Practices Used[f]	**% (n)**	**% (n)**	**% (n)**
Wearing make-up	82.1 (889)	82.2 (451)	81.9 (438)
Wearing shape forming undergarments	35.3 (380)	30.1 (166)	40.0 (214)
Breast augmentation or reduction	4.4 (48)	4.6 (25)	4.9 (23)
Eye wrinkle removal	11.0 (120)	9.3 (51)	12.9 (69)
Mole removal	12.6 (136)	14.4 (79)	10.7 (57)
Botox injections	3.3 (36)	2.7 (15)	3.9 (21)
Esthetic services	35.3 (382)	36.1 (198)	34.4 (184)
Tummy tuck	0.7 (8)	0.5 (3)	0.9 (5)
Nose reshaping	0.9 (10)	1.1 (6)	0.7 (4)
Liposuction	1.2 (13)	1.1 (6)	1.3 (7)
Varicose vein treatments	3.8 (41)	4.0 (22)	3.6 (19)
Facelift	0.6 (6)	0.9 (5)	0.2 (1)
Eyelid surgery	1.3 (14)	1.6 (9)	0.9 (5)
Dental work	22.4 (243)	25.5 (140)	19.3 (103)
Piercings	16.3 (177)	13.9 (76)	18.9 (101)
Tattoos	6.3 (68)	5.1 (28)	7.5 (40)
Other	3.1 (34)	3.8 (21)	2.4 (13)
None of the above	8.4 (91)	8.8 (48)	8.0 (43)

Body Work Practices Considered[f]	% (n)	% (n)	% (n)
Wearing make-up	16.0 (173)	19.0 (104)	12.9 (69)
Wearing shape forming undergarments	20.1 (225)	19.3 (106)	22.2 (119)
Breast augmentation or reduction	9.7 (105)	8.4 (46)	11.0 (59)
Eye wrinkle removal	11.7 (127)	12.4 (68)	11.0 (59)
Mole removal	10.2 (110)	11.1 (61)	9.2 (49)
Botox injections	6.0 (65)	7.3 (40)	4.7 (25)
Esthetic services	13.2 (143)	14.4 (79)	12.0 (64)
Tummy tuck	13.5 (146)	13.0 (71)	14.0 (75)
Nose reshaping	2.7 (29)	2.7 (15)	2.6 (14)
Liposuction	10.0 (108)	9.3 (51)	10.7 (57)
Varicose vein treatments	8.7 (94)	8.4 (46)	9.0 (48)
Facelift	8.0 (87)	9.0 (49)	7.1 (38)
Eyelid surgery	11.9 (129)	12.4 (68)	11.4 (61)
Dental work	14.4 (156)	13.3 (73)	15.5 (83)
Piercings	1.8 (20)	2.2 (12)	1.5 (8)
Tattoos	4.6 (50)	3.5 (19)	5.8 (31)
Other	2.2 (24)	2.9 (16)	1.5 (8)
None of the above	27.9 (302)	26.8 (147)	29.0 (155)
Use of Anti-Aging Products	**% (n)**	**% (n)**	**% (n)**
Daily (6-7 times a week)	33.7 (365)	34.6 (189)	32.8 (176)
3-5 times a week	12.3 (133)	10.8 (59)	13.8 (74)
1-2 times a week	5.0 (54)	3.7 (20)	6.3 (34)
2-3 times a month	3.5 (38)	3.8 (21)	3.2 (17)
Once a month or less	8.8 (95)	8.6 (47)	9.0 (48)
Never	33.1 (358)	34.0 (186)	32.1 (172)
Not sure	3.7 (40)	4.6 (25)	2.8 (15)
Dieting Behaviour	**% (n)**	**% (n)**	**% (n)**
(Within the past year, how frequently have you controlled, restricted or reduced your food intake in an effort to lose weight?)			
Always	4.9 (53)	4.6 (25)	5.2 (28)
Often	27.2 (295)	24.5 (134)	30.0 (161)
Sometimes	39.3 (426)	40.0 (219)	38.6 (207)
Rarely	18.0 (195)	19.0 (104)	17.0 (91)
Never	10.5 (114)	11.9 (65)	9.1 (49)

(Currently, are there specific foods that you do not eat or eat very little of in an effort to look better?)			
Yes	54.4 (589)	54.3 (297)	54.5 (292)
No	45.6 (494)	45.7 (250)	45.5 (244)
Use of Diet Plans/Programs	**% (n)**	**% (n)**	**% (n)**
(Have you participated in a formal weight loss program or diet plan within the last 5 years?)			
Yes	23.6 (256)	22.9 (125)	24.5 (131)
No	76.4 (827)	77.1 (422)	75.6 (405)
Change in participation in physical activity with age?	**% (n)**	**% (n)**	**% (n)**
Yes	77.4 (838)	76.6 (419)	78.2 (419)
No	22.6 (245)	23.4 (128)	21.8 (117)
Why participate in physical activity?	**% (n)**	**% (n)**	**% (n)**
Stay Healthy	27.2 (295)	31.4 (172)	22.9 (123)
Lose Weight	1.6 (17)	1.8 (10)	1.3 (7)
Both: stay healthy and lose weight	53.0 (574)	50.3 (275)	55.8 (299)
Other	5.2 (56)	4.9 (27)	5.4 (29)
I do not participate in physical activity	13.0 (141)	11.5 (63)	14.6 (78)
Importance of Body Work to Self-Esteem			
(VAS[c] question range 0-100)			
Mean Level of Importance (SD)	49.6 (31.5)	49.3 (31.4)	50.0 (31.7)
Range	1 – 100	1 - 100	1 – 100
Importance of Physical Activity to Appearance			
(VAS[c] question range 0-100)			
Mean Level of Importance (SD)	77.6 (21.7)	76.5 (22.5)	78.8 (20.7)
Range	1 – 100	1 – 100	1 -100

[a]Born between 1946-1955 (60-69 years of age)

[b]Born between 1956-1965 (50-59 years of age)

[c]Visual Analog Scale ranges from 0 ("not at all stressed" or "not at all important") – 100 ("extremely stressed" or "very important")

[d]Missing 3 responses (n = 1080) due to: presumed incorrect unit of measure provided by participant (kg instead of lbs), estimated weight of 0lbs, and desired weight change = 100% of current weight

[e]Multiple response question only answered by participants who answered yes to the previous question ("Feel pressure from others to look a certain way for acceptance") – participants selected all responses that applied, % is calculated by dividing total row values by column totals (total participant = 254, total older BBW = 106, total younger BBW = 148). Results are an estimate as equal weight among categories is unlikely.

[f]Multiple response question - participants selected all responses that applied. % is calculated out of total number of participants per column.

Appendix J: Raw Data Table: Comparison of Body Satisfaction, Influences on Appearance, Body Work, Aging Concerns, and Physical Activity by Age Category and Location of Residence

Appendix J. Raw Data Table: Comparison of Body Satisfaction, Influences on Appearance, Body Work, Aging, and Physical Activity by Age Category and Location of Residence

Variable	Urban[a]			Rural[b]		
	Total n = 676	OBBW[c] n = 334	YBBW[d] n = 342	Total n = 407	OBBW[c] n = 213	YBBW[d] n = 194
Appearance Satisfaction	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Very Satisfied	8.6 (58)	10.2 (34)	7.0 (24)	9.3 (38)	10.3 (22)	8.2 (16)
Moderately Satisfied	44.4 (300)	47.9 (160)	40.9 (140)	43.7 (178)	45.5 (97)	41.8 (81)
Neutral	15.1 (102)	13.5 (45)	16.7 (57)	15.2 (62)	16.0 (34)	14.4 (28)
Moderately Dissatisfied	25.0 (169)	23.4 (78)	26.6 (91)	23.6 (96)	21.1 (45)	26.3 (51)
Very Dissatisfied	7.0 (47)	5.1 (17)	8.8 (30)	8.1 (33)	7.0 (15)	9.3 (18)
Stress Related to Appearance *(VAS[e] question range 0-100)*						
Mean Level of Stress (SD)	32.2 (27.8)	27.9 (25.7)	36.5 (29.2)	30.3 (28.0)	26.4 (26.2)	34.6 (29.2)
Range	1 - 100	1 – 100	1 – 100	1 - 100	1 – 100	1 – 100
Weight Satisfaction *(How satisfied are you with your current body weight?)*	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Very Satisfied	10.2 (69)	11.4 (38)	9.1 (31)	10.8 (44)	10.8 (23)	10.8 (21)
Moderately Satisfied	23.4 (158)	25.1 (84)	21.6 (74)	23.3 (95)	23.9 (51)	22.7 (44)
Neutral	10.4 (70)	8.4 (28)	12.3 (42)	11.3 (46)	12.2 (26)	10.3 (20)
Moderately Dissatisfied	35.5 (240)	36.5 (122)	34.5 (118)	35.1 (143)	36.2 (77)	34.0 (66)
Very Dissatisfied	139 (20.6)	18.6 (62)	22.5 (77)	19.4 (79)	16.9 (36)	22.2 (43)
Desired Weight Change (in pounds)[f]	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Gain Weight	2.5 (17)	3.3 (11)	1.8 (6)	2.5 (10)	3.3 (7)	1.5 (3)
Maintain Current Weight	6.8 (46)	9.3 (31)	4.4 (15)	6.4 (26)	6.6 (14)	6.2 (12)
Lose Weight	90.7 (611)	87.4 (291)	93.8 (320)	91.1 (370)	90.1 (192)	91.8 (178)
Concern about Aging *(I am worried about the impact of aging on my overall appearance)*	**100 (676)**	**100 (334)**	**100 (342)**	**100 (407)**	**100 (213)**	**100 (194)**
Strongly Agree	9.8 (66)	9.6 (32)	9.9 (34)	8.1 (33)	8.0 (17)	8.2 (16)
Agree	39.8 (269)	38.9 (130)	40.6 (139)	32.4 (132)	31.0 (66)	34.0 (66)
Neutral	31.2 (211)	33.2 (111)	29.2 (100)	34.9 (142)	37.6 (80)	32.0 (62)
Disagree	16.3 (110)	16.2 (54)	16.4 (56)	20.1 (82)	18.8 (40)	21.6 (42)
Strongly Disagree	3.0 (20)	2.1 (7)	3.8 (13)	4.4 (18)	4.7 (10)	4.1 (8)
Overall Appearance Importance	**100 (676)**	**100 (334)**	**100 (342)**	**100 (407)**	**100 (213)**	**100 (194)**

(VAS[e] question range 0-100)						
Mean Level of Importance (SD)	71.5 (22.0)	70.7 (22.8)	72.2 (21.2)	69.3 (23.0)	68.0 (22.4)	70.7 (23.5)
Range	1 – 100	2 – 100	1 – 100	1 - 100	1 – 100	1 – 100
Appearance Preoccupation	**100 (676)**	**100 (334)**	**100 (342)**	**100 (407)**	**100 (213)**	**100 (194)**
(During a typical day, how often do you think about your appearance?)						
Always	1.9 (13)	1.8 (6)	2.0 (7)	1.0 (4)	1.4 (3)	0.5 (1)
Often	17.3 (117)	17.1 (57)	17.5 (60)	17.4 (71)	15.0 (32)	20.1 (39)
Sometimes	59.0 (399)	57.8 (193)	60.4 (206)	62.7 (255)	62.4 (133)	62.9 (122)
Rarely	20.7 (140)	21.9 (73)	19.6 (67)	18.4 (75)	20.7 (44)	16.0 (31)
Never	1.0 (7)	1.5 (5)	0.6 (2)	0.5 (2)	0.5 (1)	0.5 (1)
Appearance Anxiety	**100 (676)**	**100 (334)**	**100 (342)**	**100 (407)**	**100 (213)**	**100 (194)**
(Do you feel self-conscious about your body shape/size in the company of others?)						
Always	11.8 (80)	8.7 (29)	14.9 (51)	11.5 (47)	12.2 (26)	10.8 (21)
Often	22.2 (150)	19.8 (66)	24.6 (84)	27.8 (113)	24.4 (52)	31.4 (61)
Sometimes	43.5 (294)	47.6 (159)	39.5 (135)	40.5 (165)	40.8 (87)	40.2 (78)
Rarely	18.8 (127)	19.2 (64)	18.4 (63)	18.2 (74)	19.2 (41)	17.0 (33)
Never	3.7 (25)	4.8 (16)	2.6 (9)	2.0 (8)	3.3 (7)	0.5 (1)
Do feelings about your body prevent participation in activities you enjoy?	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Yes	24.6 (166)	20.7 (69)	28.4 (97)	20.9 (85)	19.2 (41)	22.7 (44)
No	75.4 (510)	79.3 (265)	71.6 (245)	79.1 (322)	80.8 (172)	77.3 (150)
Pressure from the Media	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
[How frequently do you feel pressure from the media (television, magazines, radio, Internet ads, etc.) to look a certain way for acceptance?]						
Always	4.9 (33)	2.7 (9)	7.0 (24)	4.9 (20)	4.7 (10)	5.2 (10)
Often	17.2 (116)	17.4 (58)	17.0 (58)	20.6 (84)	16.4 (35)	25.3 (49)
Sometimes	30.3 (205)	26.9 (90)	33.6 (115)	25.1 (102)	27.7 (59)	22.2 (43)
Rarely	34.0 (230)	37.7 (126)	30.4 (104)	34.9 (142)	34.3 (73)	35.6 (69)
Never	13.6 (92)	15.3 (51)	12.0 (41)	14.5 (59)	16.9 (36)	11.9 (23)

Do you feel pressure from others to look a certain way for acceptance?	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Yes	25.1 (170)	20.7 (69)	29.5 (101)	20.6 (84)	17.4 (37)	24.2 (47)
No	74.9 (506)	79.3 (265)	70.5 (241)	79.4 (323)	82.6 (176)	75.8 (147)
Pressure from Whom?[g]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Friends	43.5 (74)	40.6 (28)	45.5 (46)	41.7 (35)	40.5 (15)	42.6 (20)
Coworkers	31.8 (54)	20.3 (14)	39.6 (40)	26.2 (22)	16.2 (6)	43.0 (16)
Peers	36.5 (62)	34.8 (24)	37.6 (38)	32.1 (27)	21.6 (8)	40.4 (19)
Spouse	26.5 (45)	30.4 (21)	23.8 (24)	45.2 (38)	35.1 (13)	53.2 (25)
Parent(s)	18.8 (32)	13.0 (9)	22.8 (23)	15.5 (13)	8.1 (3)	21.3 (10)
Siblings	23.5 (40)	24.6 (17)	22.8 (23)	23.8 (20)	27.0 (10)	21.3 (10)
Children	29.4 (50)	33.3 (23)	26.7 (27)	28.6 (24)	24.3 (9)	31.9 (15)
Other family members	30.6 (52)	27.5 (19)	32.7 (33)	26.2 (22)	32.4 (11)	23.4 (11)
Other	17.6 (30)	15.9 (11)	18.8 (19)	16.7 (14)	16.2 (6)	17.0 (8)
Body Work Practices Used[h]	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**	**% (n)**
Wearing make-up	83.9 (567)	84.2 (282)	83.6 (285)	79.1 (322)	79.3 (169)	78.9 (153)
Wearing shape forming undergarments	38.5 (260)	34.0 (114)	42.8 (146)	29.5 (120)	24.4 (52)	35.0 (68)
Breast augmentation or reduction	5.0 (34)	5.1 (17)	5.0 (17)	3.4 (14)	3.8 (8)	3.1 (6)
Eye wrinkle removal	12.7 (86)	11.0 (37)	14.4 (49)	8.4 (34)	6.6 (14)	10.3 (20)
Mole removal	14.1 (95)	15.8 (53)	12.3 (42)	10.1 (41)	12.2 (26)	7.7 (15)
Botox injections	4.4 (30)	3.9 (13)	5.0 (17)	1.5 (6)	0.9 (2)	2.1 (4)
Esthetic services	39.2 (265)	40.0 (134)	38.4 (131)	28.7 (117)	30.0 (64)	27.3 (53)
Tummy tuck	0.7 (5)	0.6 (2)	0.9 (3)	0.7 (3)	0.5 (1)	1.0 (2)
Nose reshaping	1.2 (8)	1.2 (4)	1.2 (4)	0.5 (2)	0.9 (2)	0.0 (0)
Liposuction	1.6 (11)	1.5 (5)	1.8 (6)	0.5 (2)	0.5 (1)	0.5 (1)
Varicose vein treatments	3.7 (25)	4.2 (14)	3.2 (11)	3.9 (16)	3.8 (8)	4.1 (8)
Facelift	0.9 (6)	1.5 (5)	0.3 (1)	0.0 (0)	0.0 (0)	0.0 (0)
Eyelid surgery	1.8 (12)	2.1 (7)	1.5 (5)	0.5 (2)	0.9 (2)	0.0 (0)
Dental work	22.2 (150)	25.7 (86)	18.8 (64)	22.9 (93)	25.4 (54)	20.1 (39)
Piercings	17.3 (117)	13.7 (46)	20.8 (71)	14.7 (60)	14.1 (30)	15.5 (30)
Tattoos	6.8 (46)	6.3 (21)	7.3 (25)	5.4 (22)	3.3 (7)	7.7 (15)
Other	4.0 (27)	4.8 (16)	3.2 (11)	1.7 (7)	2.3 (5)	1.0 (2)
None of the above	8.0 (54)	8.1 (27)	7.9 (27)	9.1 (37)	9.9 (21)	8.2 (16)

Body Work Practices Considered[h]	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Wearing make-up	17.6 (119)	19.1 (64)	16.1 (55)	13.3 (54)	18.8 (40)	7.2 (14)
Wearing shape forming undergarments	21.0 (142)	16.7 (56)	25.2 (86)	20.4 (83)	23.5 (50)	17.0 (33)
Breast augmentation or reduction	11.1 (75)	9.3 (31)	12.9 (44)	7.9 (30)	7.0 (15)	7.7 (15)
Eye wrinkle removal	11.8 (80)	13.7 (46)	10.0 (34)	11.5 (47)	10.3 (22)	12.9 (25)
Mole removal	11.2 (76)	14.0 (47)	8.5 (29)	8.4 (34)	6.6 (14)	10.3 (20)
Botox injections	6.5 (44)	7.8 (26)	5.3 (18)	5.2 (21)	6.6 (14)	3.6 (7)
Esthetic services	13.0 (88)	13.4 (45)	12.6 (43)	13.5 (55)	16.0 (34)	10.8 (21)
Tummy tuck	14.8 (100)	14.6 (49)	15.0 (51)	11.3 (46)	10.3 (22)	12.4 (24)
Nose reshaping	3.3 (22)	2.7 (9)	3.8 (13)	1.7 (7)	2.8 (6)	0.5 (1)
Liposuction	10.9 (74)	10.4 (35)	11.4 (39)	8.4 (34)	7.5 (16)	9.3 (18)
Varicose vein treatments	9.0 (61)	8.1 (27)	10.0 (34)	8.1 (33)	8.9 (19)	7.2 (14)
Facelift	9.2 (62)	10.4 (35)	7.9 (27)	6.1 (25)	6.6 (14)	5.7 (11)
Eyelid surgery	12.7 (86)	13.7 (46)	11.7 (40)	10.6 (43)	10.3 (22)	10.8 (21)
Dental work	14.5 (98)	13.1 (44)	15.8 (54)	14.3 (58)	13.6 (29)	14.9 (29)
Piercings	1.9 (13)	2.1 (7)	1.8 (6)	1.7 (7)	2.3 (5)	1.0 (2)
Tattoos	4.7 (32)	3.9 (13)	5.6 (19)	4.4 (18)	2.8 (6)	6.2 (12)
Other	3.0 (20)	4.2 (14)	1.8 (6)	1.0 (4)	0.9 (2)	1.0 (2)
None of the above	27.5 (186)	27.2 (91)	27.9 (95)	28.5 (116)	26.3 (56)	30.9 (60)
Use of Anti-Aging Products	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Daily (6-7 times a week)	36.5 (247)	37.4 (125)	35.7 (122)	29.0 (118)	30.0 (64)	27.8 (54)
3-5 times a week	13.0 (88)	11.4 (38)	14.9 (51)	10.8 (44)	9.9 (21)	11.9 (23)
1-2 times a week	4.3 (29)	3.3 (11)	5.3 (18)	6.1 (25)	4.2 (9)	8.2 (16)
2-3 times a month	3.6 (24)	3.9 (13)	3.2 (11)	3.4 (14)	3.8 (8)	3.1 (6)
Once a month or less	8.9 (60)	9.9 (33)	7.9 (27)	8.6 (35)	6.6 (14)	10.8 (21)
Never	30.3 (205)	30.5 (102)	29.8 (102)	37.8 (154)	39.4 (84)	36.1 (70)
Not sure	3.4 (23)	3.6 (12)	3.2 (11)	4.2 (17)	6.1 (13)	2.1 (4)
Dieting Behaviour	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
(Within the past year, how frequently have you controlled, restricted or reduced your food intake in an effort to lose weight?)						
Always	4.9 (33)	4.2 (14)	5.6 (19)	4.9 (20)	5.2 (11)	4.6 (9)
Often	27.7 (187)	24.6 (82)	30.7 (105)	26.5 (108)	24.4 (52)	28.9 (56)
Sometimes	39.5 (267)	40.4 (135)	38.6 (132)	39.1 (159)	39.4 (84)	38.7 (75)
Rarely	17.0 (115)	18.6 (62)	15.5 (53)	19.7 (80)	19.7 (42)	19.6 (38)
Never	10.9 (74)	12.3 (41)	9.6 (33)	9.8 (40)	11.3 (24)	8.2 (16)

(Currently, are there specific foods that you do not eat or eat very little of in an effort to look better?)						
Yes	57.2 (387)	56.0 (187)	58.5 (200)	49.6 (202)	51.6 (110)	47.4 (92)
No	42.8 (289)	44.0 (147)	41.5 (142)	50.4 (205)	48.4 (103)	52.6 (102)
Use of Diet Plans/Programs	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
(Have you participated in a formal weight loss program or diet plan within the last 5 years?)						
Yes	24.6 (166)	24.3 (81)	24.9 (85)	22.1 (90)	20.7 (44)	23.7 (46)
No	75.4 (510)	75.7 (253)	75.1 (257)	77.9 (317)	79.3 (169)	76.3 (148)
Change in participation in physical activity with age?	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Yes	78.0 (527)	76.9 (257)	78.9 (270)	76.4 (311)	76.1 (162)	76.8 (149)
No	22.0 (149)	23.1 (77)	21.1 (72)	23.6 (96)	23.9 (51)	23.2 (45)
Why participate in physical activity?	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Stay Healthy	27.4 (185)	30.5 (102)	24.3 (83)	27.0 (110)	32.9 (70)	20.6 (40)
Lose Weight	1.6 (11)	1.8 (6)	1.5 (5)	1.5 (6)	1.9 (4)	1.0 (2)
Both: stay healthy and lose weight	53.6 (362)	51.5 (172)	55.6 (190)	52.1 (212)	48.4 (103)	56.2 (109)
Other	4.6 (31)	3.6 (12)	5.6 (19)	6.1 (25)	7.0 (15)	5.2 (10)
I do not participate in physical activity	12.9 (87)	12.6 (42)	13.2 (45)	13.3 (54)	9.9 (21)	17.0 (33)
Importance of Body Work to Self-Esteem						
(VAS[e] question range 0-100)						
Mean Level of Importance (SD)	50.8 (31.5)	51.5 (31.4)	50.2 (31.5)	47.7 (31.6)	45.8 (31.1)	49.7 (32.1)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100
Importance of Physical Activity to Appearance						
(VAS[e] question range 0-100)						
Mean Level of Importance (SD)	78.7 (21.1)	78.0 (21.5)	79.4 (20.8)	75.9 (22.4)	74.2 (24.0)	77.7 (20.5)
Range	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100	1 – 100

[a]Within the Winnipeg perimeter
[b]Within Manitoba, outside the Winnipeg perimeter
[c]Born between 1946-1955 (60-69 years of age)
[d]Born between 1956-1965 (50-59 years of age)
[e]Visual Analog Scale ranges from 0 ("not at all stressed" or "not at all important") – 100 ("extremely stressed" or "very important")
[f]Missing 3 responses (total urban, n = 674; total rural, n = 406) due to: presumed incorrect unit of measure provided by participant (kg instead of lbs), estimated weight of 0lbs, and desired weight change = 100% of current weight

[g]Multiple response question only answered by participants who answered yes to the previous question ("Feel pressure from others to look a certain way for acceptance") – participants selected all responses that applied, % is calculated by dividing total row values by column totals (total urban participant = 170, total older urban participants = 69, total younger urban participants = 101; total rural participants = 84, total older rural participants = 37, total younger rural participants = 47). Results are an estimate as equal weight among categories is unlikely.

[h]Multiple response question - participants selected all responses that applied. % is calculated out of total number of participants per column.

Appendix K: Ethical Approval Certificate

RENEWAL APPROVAL

Date: May 29, 2018   **New Expiry:** June 22, 2019

TO: **Christina Lengyel**
               Principal Investigator

FROM: **Kevin Russell, Chair**
               Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2015:040 (HS18055)**
               "Perceptions of Body Image and Food Choices among Rural and Urban
               Baby Boomer Women"

Joint-Faculty Research Ethics Board (JFREB) has reviewed and renewed the above research. JFREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*.

This approval is subject to the following conditions:
1. Any modification to the research must be submitted to JFREB for approval before implementation.
2. Any deviations to the research or adverse events must be submitted to JFREB as soon as possible.
3. This renewal is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
4. A Study Closure form must be submitted to JFREB when the research is complete or terminated.

Funded Protocols:
- **Please mail/e-mail a copy of this Renewal Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.**

Research Ethics and Compliance is a part of the Office of the Vice-President (Research and International)
umanitoba.ca/research

Appendix L: Table of t-test Results

Appendix L. Health/Behaviour Related Comparisons by Location of Residence and Age Category

Body Image and Food Choice Questions	Category	N	Mean	SD	t	df	p-value
How much would you ideally like to weigh? (in lbs)	Rural[a]	407	143.5	21.3	0.935	1081	0.350
	Urban[b]	676	142.2	22.2			
	Older[c]	547	142.9	22.2	0.251	1081	0.802
	Younger[d]	536	142.6	21.6			
Desired weight change (in lbs)	Rural[a]	406	26.6	28.7	-0.278	1078	0.781
	Urban[b]	674	27.1	29.9			
	Older[c]	546	24.2	26.6	-3.114	1036	0.002**
	Younger[d]	534	29.8	31.9			
Without using a scale, estimate what you weigh today (in lbs)	Rural[a]	407	169.7	40.5	0.158	1081	0.874
	Urban[b]	676	169.3	44.4			
	Older[c]	547	167.0	39.7	-1.874	1052	0.061
	Younger[d]	536	171.9	45.9			
On average, how stressed do you feel about your appearance?[+]	Rural[a]	407	30.3	27.9	-1.134	1081	0.257
	Urban[b]	676	32.3	27.8			
	Older[c]	547	27.4	25.9	-5.041	1060	<0.001**
	Younger[d]	536	35.8	29.2			
How important do you think nutrition is to healthy aging?[+]	Rural[a]	407	90.8	12.8	0.005	1081	0.996
	Urban[b]	676	90.8	12.4			
	Older[c]	547	90.4	13.1	-0.997	1081	0.319
	Younger[d]	536	91.2	11.9			
How important is the availability of current information about food choices and body image?[+]	Rural[a]	407	60.7	27.4	-1.297	1081	0.195
	Urban[b]	676	62.9	27.1			
	Older[c]	547	61.2	27.2	-1.025	1081	0.306
	Younger[d]	536	62.9	27.2			
How important is what you currently eat and drink to your overall appearance?[+]	Rural[a]	407	73.6	23.3	0.098	1081	0.992
	Urban[b]	676	73.4	23.0			
	Older[c]	547	72.7	24.0	-1.088	1081	0.277
	Younger[d]	536	74.3	22.2			
How important are body work practices to your self-esteem?[+]	Rural[a]	407	47.7	31.6	-1.597	1081	0.110
	Urban[b]	676	50.8	31.5			
	Older[c]	547	49.3	31.4	-0.367	1081	0.714
	Younger[d]	536	50.0	31.7			

How important is physical activity to your overall appearance and body image?[+]	Rural[a]	407	75.9	22.4	-2.055	1081	0.04*
	Urban[b]	676	78.7	21.1			
	Older[c]	547	76.5	22.5	-1.684	1081	0.093
	Younger[d]	536	78.7	20.7			
How healthy is your diet?	Rural[a]	407	70.8	20.3	1.563	1081	0.118
	Urban[b]	676	68.8	20.4			
	Older[c]	474	70.9	20.8	2.112	1081	0.035*
	Younger[d]	536	68.2	19.9			

[a]Within MB, outside the Winnipeg perimeter
[b]Within the Winnipeg perimeter
[c]Born between 1946-1955 (60-69 years of age)
[d]Born between 1956-1965 (50-59 years of age)
[+]VAS questions asked on a scale from 0-100, with 0 referring to either no stress or not important at all and 100 referring to high stress or very important
Significance level: *$p \leq 0.05$; **$p \leq 0.01$

Appendix M: Table of Visual Analog Scale Quartiles

**Appendix M. VAS Scores Expressed in Quartiles and Percentages**

Variable	Quartile 1 0 – 24 % (n)	Quartile 2 25 – 49 % (n)	Quartile 3 50 – 74 % (n)	Quartile 4 75 – 100 % (n)
Average daily appearance stress[a]	50.3 (545)	18.4 (199)	21.3 (231)	10.0 (108)
Importance of overall appearance[b]	5.5 (60)	8.2 (89)	31.8 (344)	54.5 (590)
Healthiness of diet[c]	3.5 (38)	11.4 (124)	34.0 (368)	51.1 (553)
Importance of nutrition in healthy aging[b]	0.2 (2)	0.9 (10)	8.7 (94)	90.2 (977)
Importance of availability of current info about food choices and body image[b]	11.9 (129)	11.8 (128)	34.9 (378)	41.4 (448)
Importance of current food and drink to body image[b]	7.5 (81)	7.9 (86)	29.7 (322)	54.8 (594)
Importance of body work to self-esteem[b]	27.8 (301)	15.8 (171)	27.4 (297)	29.0 (314)
Importance of current food and drink to overall appearance[b]	5.3 (57)	5.8 (64)	28.9 (313)	59.9 (649)
Importance of physical activity to appearance and body image[b]	3.7 (40)	4.2 (46)	23.5 (254)	68.6 (743)

[a]Quartile 1= never stressed, Quartile 2= sometimes stressed, Quartile 3= often stressed, Quartile 4= extremely stressed
[b]Quartile 1= not important, Quartile 2= somewhat important, Quartile 3= fairly important, Quartile 4= very important
[c] Quartile 1= not healthy, Quartile 2= somewhat healthy, Quartile 3= fairly healthy, Quartile 4= very healthy

Appendix N: Themed Responses for Foods Avoided or Restricted for Weight Loss
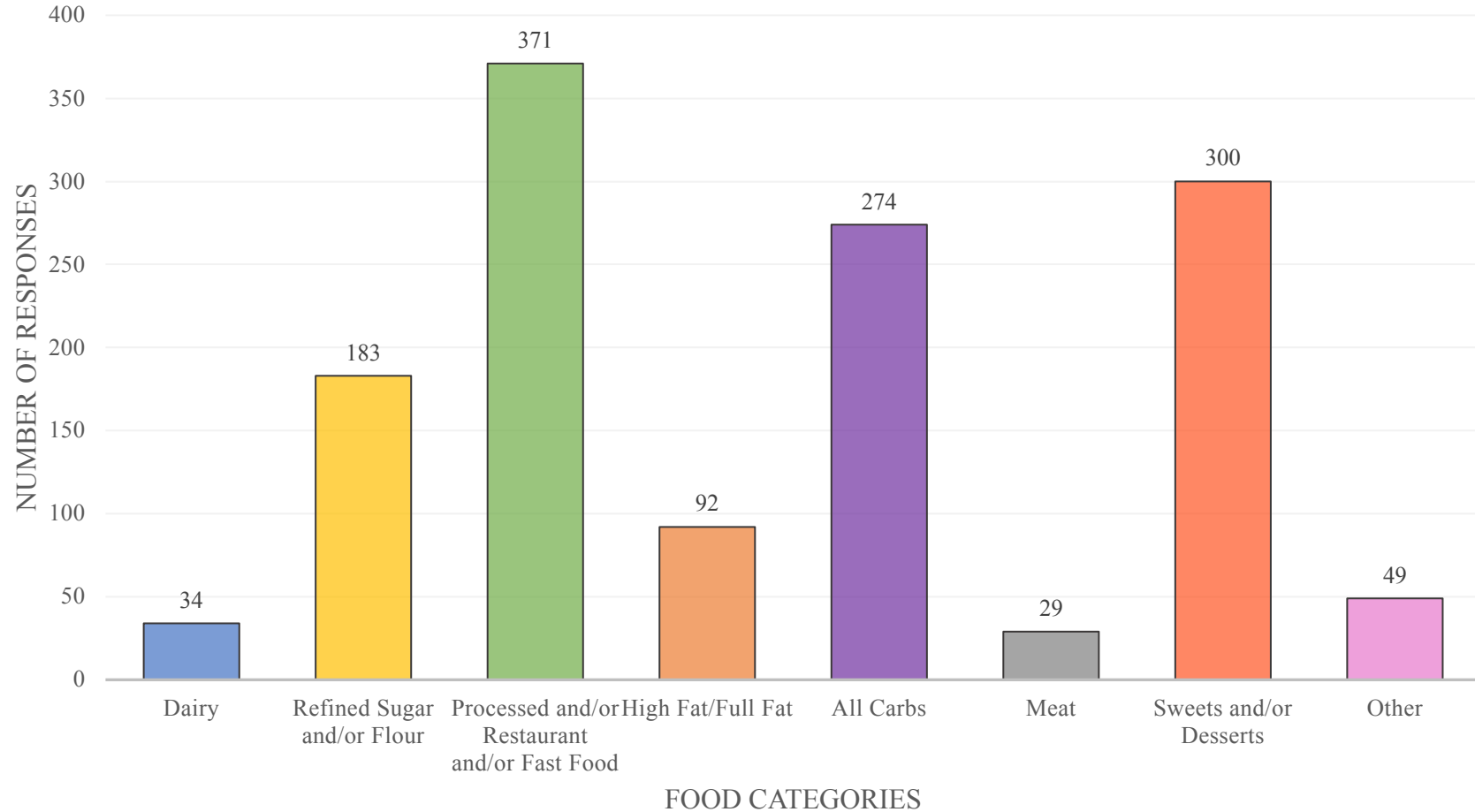
Appendix N. Themed Responses for Foods Avoided or Restricted for Weight Loss*

*Open-ended responses from those participants who answered "yes" to survey question 25 Participants may have identified more than one category in their response; therefore, total number of responses (n= 1332) is greater than the number of participants who responded yes (n= 589)

Appendix O: Complete Backwards Multinomial Logistic Regression Model: Predictors of Body Weight Satisfaction

Appendix O. Complete Backwards Multinomial Logistic Regression Model: Predictors of Body Weight Satisfaction

Predictor	Model 1 (p-value)	Model 2 (p-value)	Model 3 (p-value)	Model 4 (p-value)	Model 5 (p-value)	Model 6 (p-value)	Model 7 (p-value)	Model 8 (p-value)
Self-rated health	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Appearance anxiety	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average daily appearance stress	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Desired weight change	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dieting behaviour	0.007	0.006	0.006	0.007	0.008	0.006	0.005	0.005
Level of education	0.073	0.075	0.083	0.065	0.053	0.068	0.079	0.070
Importance of overall appearance	0.090	0.072	0.064	0.051	0.060	0.044	0.082	0.040
Appearance pressure from others	0.195	0.195	0.201	0.205	0.153	0.160	0.092	0.084
Household income	0.060	0.061	0.063	0.060	0.068	0.066	0.099	0.090
Importance of current food and drink to overall appearance	0.020	0.021	0.015	0.024	0.028	0.053	0.057	0.144
Importance of availability of current info about food choices and body image	0.434	0.405	0.445	0.234	0.224	0.236	0.277	-
Cigarette smoking status	0.169	0.164	0.168	0.170	0.175	0.240	-	-
Healthiness of diet	0.315	0.304	0.285	0.279	0.332	-	-	-
Media pressure on appearance	0.411	0.397	0.409	0.431	-	-	-	-
Importance of current food and drink to body image	0.554	0.557	0.555	-	-	-	-	-
Importance of body work to self-esteem	0.703	0.737	-	-	-	-	-	-
Appearance preoccupation	0.951	-	-	-	-	-	-	-
-2 Log Liklihood	1169.163	1169.863	1170.472	1171.650	1177.579	1179.782	1231.974	1234.539
Pseudo R-square (Nagelkerke)	0.622	0.622	0.622	0.621	0.618	0.616	0.605	0.604

| Predictor	Model 9 (p-value)	Model 10 (p-value)	Model 11 (p-value)
Self-rated health	<0.001	<0.001	<0.001
Appearance anxiety	<0.001	<0.001	<0.001
Average daily appearance stress	<0.001	<0.001	<0.001
Desired weight change	<0.001	<0.001	<0.001
Dieting behaviour	0.001	0.001	0.001
Level of education	0.064	0.031	0.039
Importance of overall appearance	0.073	0.043	0.045
Appearance pressure from others	0.097	0.098	-
Household income	0.107	-	-
Importance of current food and drink to overall appearance	-	-	-
Importance of availability of current info about food choices and body image	-	-	-
Cigarette smoking status	-	-	-
Healthiness of diet	-	-	-
Media pressure on appearance	-	-	-
Importance of current food and drink to body image	-	-	-
Importance of body work to self-esteem	-	-	-
Appearance preoccupation	-	-	-
-2 Log Liklihood	1237.027	1252.768	1256.021
Pseudo R-square (Nagelkerke)	0.602	0.593	0.591

Appendix P: Complete Backwards Multinomial Logistic Regression Model: Predictors of Overall Appearance Satisfaction

Appendix P. Complete Backwards Multinomial Logistic Regression Model: Predictors of Overall Appearance Satisfaction

Predictor	Model 1 (p-value)	Model 2 (p-value)	Model 3 (p-value)	Model 4 (p-value)	Model 5 (p-value)	Model 6 (p-value)	Model 7 (p-value)	Model 8 (p-value)
Age category	0.210	0.218	0.234	0.259	0.188	0.172	0.188	0.169
Self-rated health	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Appearance anxiety	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average daily appearance stress	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Importance of overall appearance	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Desired weight change	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Age	0.049	0.052	0.052	0.069	0.043	0.040	0.041	0.032
Impact of aging on appearance	0.073	0.068	0.068	0.051	0.067	0.071	0.069	0.055
Healthiness of diet	0.031	0.028	0.031	0.037	0.044	0.074	0.082	0.070
Appearance pressure from others	0.033	0.035	0.035	0.066	0.118	0.111	0.129	0.097
Appearance preoccupation	0.113	0.111	0.112	0.105	0.140	0.129	0.129	-
Dieting behaviour	0.161	0.160	0.133	0.113	0.153	0.142	-	-
Importance of nutrition in healthy aging	0.345	0.362	0.263	0.181	0.192	-	-	-
Media pressure on appearance	0.167	0.174	0.202	0.210	-	-	-	-
Cigarette smoking status	0.398	0.402	0.402	-	-	-	-	-
Importance of availability of current info about food choices and body image	0.414	0.452	-	-	-	-	-	-
Importance of current food and drink to body image	0.836	-	-	-	-	-	-	-
-2 Log Liklihood	1468.070	1468.428	1470.018	1511.814	1520.222	1523.524	1535.734	1542.869
Pseudo R-square (Nagelkerke)	0.512	0.511	0.510	0.508	0.502	0.500	0.493	0.489

Predictor	Model 9 (p-value)	Model 10 (p-value)
Age category	0.180	0.199
Self-rated health	<0.001	<0.001
Appearance anxiety	<0.001	<0.001
Average daily appearance stress	<0.001	<0.001
Importance of overall appearance	<0.001	<0.001
Desired weight change	<0.001	<0.001
Age	0.039	0.042
Impact of aging on appearance	0.049	0.034
Healthiness of diet	0.068	-
Appearance pressure from others	-	-
Appearance preoccupation	-	-
Dieting behaviour	-	-
Importance of nutrition in healthy aging	-	-
Media pressure on appearance	-	-
Cigarette smoking status	-	-
Importance of availability of current info about food choices and body image	-	-
Importance of current food and drink to body image	-	-
-2 Log Liklihood	1547.530	1552.906
Pseudo R-square (Nagelkerke)	0.486	0.482

Appendix Q: Themed Responses About Changes in Physical Activity with Age
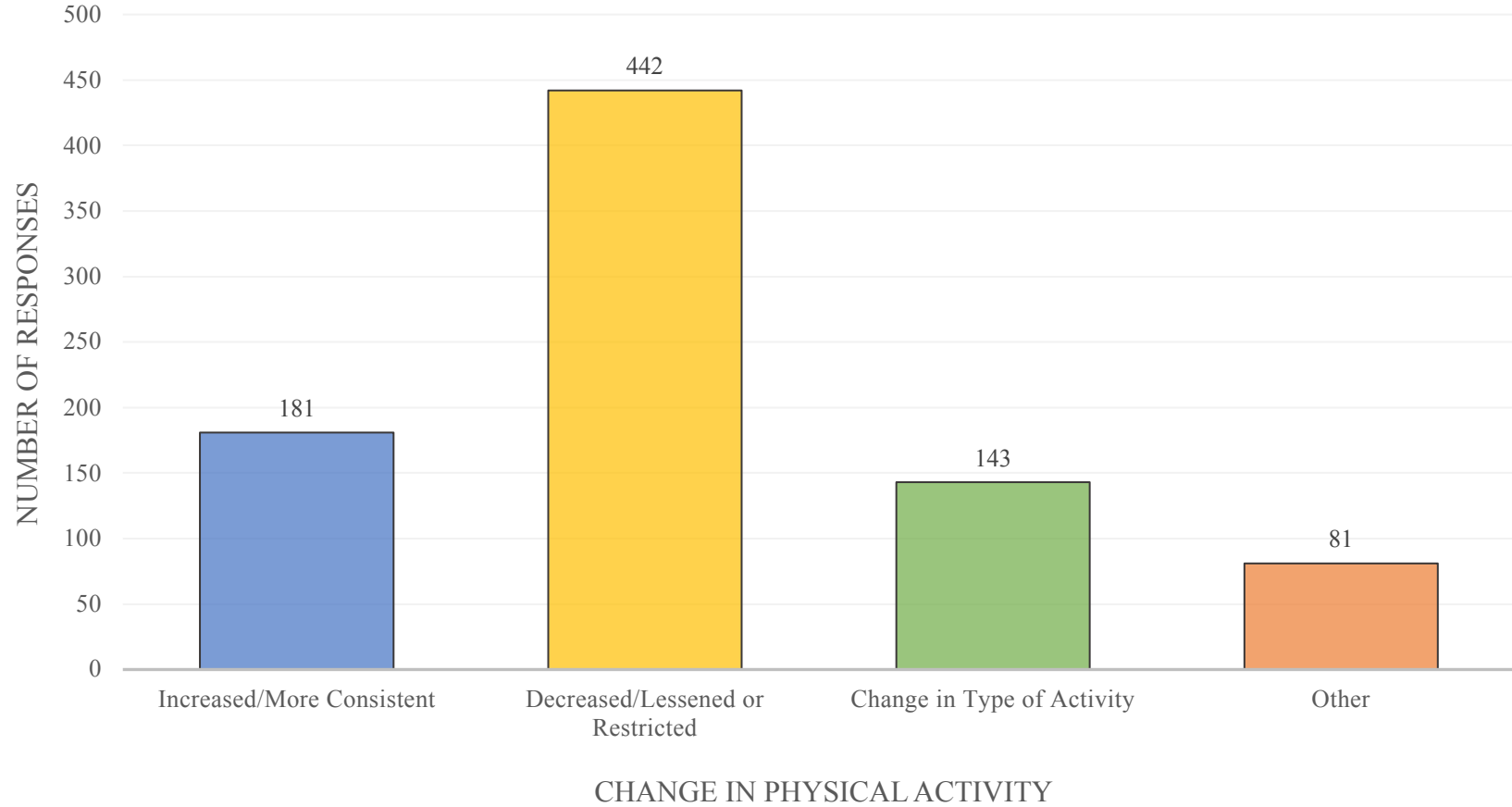
Appendix Q. Themed Responses About Changes in Physical Activity with Age*

*Open-ended responses from those participants who answered "yes" to survey question 28. Participants may have identified more than one category in their response; therefore, total number of responses (n= 847) is greater than the number of participants who responded yes (n= 838).

Appendix R: Participant Breakdown

Appendix R. Participant Breakdown

Location of Residence	Number of Participants
Eastern Manitoba	51
Northern Interlake	45
South East Manitoba	43
South Central Manitoba	36
Riding Mountain	30
Brandon (East)	31
Western Manitoba	24
Brandon Region	23
South West Manitoba	22
Selkirk	16
Brandon (South)	13
South Interlake	13
Portage la Prairie	10
Steinbach	10
Morden	7
Dauphin	5
Northern Manitoba	5
Flin Flon	4
St. Francois Xavier	4
Headingly (East)	3
Ste. Anne	3
The Pas	3
Winkler	3
Thompson	2
Lockport	1
Winnipeg	676