University of Alberta

Magazine Images Depicting the Ideal Fit Male Body: An Outlet for Influencing Body Perceptions and Exercise Related Cognitions.

by

Jessica L. Walker

A thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Arts

Faculty of Physical Education and Recreation

Fall 2012
Edmonton, Alberta

Abstract

This study examined the effects of viewing health/fitness and sports magazine images on body perceptions and exercise related cognitions in males. The moderating effects of age were also examined. A series of 3 (image-only, magazine cover, control) by 3 (youngest, middle, oldest) ANOVA analyses with internalization, self-objectification, reasons for exercise, and exercise intentions as the dependent variables were conducted. Results from 280 male participants (mean age 36.34, range 18-68 years) showed that the image-only group displayed the greatest level of internalization-general: $F(2, 271) = 5.65$, $p = .004$, $\eta^2 = .040$. Additionally, older males reported the lowest level of internalization-general, $F(2, 271) = 15.19$, $p = .000$, $\eta^2 = .101$, internalization-athlete, $F(2, 271) = 13.07$, $p = .000$, $\eta^2 = .088$, and self-objectification, $F(2, 271) = 6.13$, $p = .002$, $\eta^2 = .043$. Findings help us gain a better understanding about the powerful force of the mass media and its effect on consumers.

Table of Contents

List of Tables

List of Appendices

Introduction

The booming fitness industry has resulted in more people engaging in their health by seeking out health and fitness information through the media (Cline & Haynes, 2001). However, researchers have argued that the media is the main culprit for conveying idealized gender specific body figures (Tiggemann, 2002). Although these idealized figures are nearly impossible to achieve, they are still set as the standard that some people strive to achieve (Gray & Ginsberg, 2007). The pressure to conform to these standards may influence male body perceptions and exercise related cognitions.

Print Media: Health/Fitness and Sports Magazines

There is increasing evidence pertaining to the cultural preference and endorsement of an ideal male body. The ideal male body is characterized by a mesomorphic shape: well-proportioned chest and shoulders that taper down at the hips and waist (Law & Labre, 2002; Mishkind, Rodin, Silverstein, & Streigel-Moore, 1986; Pope, Phillips, & Olivardia, 2000). Males also describe the ideal male figure as tall, fit, healthy, young, tanned, and moderately muscular (Pompper, Soto, & Piel, 2007).

Exposure to magazine images of this toned, athletic, and muscular physique portrayed by the media results in body concerns and dissatisfaction within males (Hatoum & Belle, 2004; Leit, Gray, & Pope, 2002; Lorenzen, Grieve, & Thomas, 2004; Morry & Staska, 2001). Researchers suggest that males are able to relate to the ideal male body and therefore use it for social comparison (Arbour & Martin Ginis, 2006). In contrast, males may reject comparing

themselves to physiques they perceive as unattainable or not relatable. For example, images of slightly obese males (Ogden & Mundray, 1996) or hyper-muscular males (Arbour & Martin Ginis, 2006) did not change male body dissatisfaction.

Magazines are one of the many key promoters of the ideal figure. Magazines are widely published and visually accessible to a large proportion of people. Even non-magazine readers are exposed to their covers as they are blatantly available in stores and newsstands. Currently, a variety of health/fitness and sports magazines targeted at males exist (Alexander, 2003). This is in conjunction with the fast growing and increasing saturation of health-based media (Dutta-Bergman, 2004). Although men's health/fitness magazines claim to promote health and fitness, they are often heavily focused on male body appearance and stress the importance of obtaining perfect bodies (Boni, 2002; Gray & Ginsberg, 2007; Pope et al., 2000). In addition, the magazine cover's catch phrases and slogans promise onlookers that the magazine will provide step-by-step instructions on ways to achieve such a body (Boni, 2002; Dworkin & Wachs, 2009).

Hatoum and Belle (2004) found that males experienced greater concerns surrounding their muscularity and general fitness when they skimmed male-focused magazines, such as *Men's Health* or *Men's Fitness*. Similar results were found by Morry and Staska (2001). Males who read more fitness magazines and females who read more fashion magazines exhibited greater concern about their physical appearance (Morry & Staska, 2001). Sports magazines are said to

emphasize what the body can do rather than how it looks (Tiggemann & Pickering, 1996). Yet males report similar levels of body dissatisfaction after exposure to sports magazines as when they were exposed to health/fitness magazines (Harrison, 2000).

The negative body image outcomes that the ideal body elicits may cause males to engage in several risky health behaviours, such as limiting fat and/or carb intake, eating a high protein diet, ingesting anabolic steroids, or taking nutritional or performance enhancing supplements (Cafri et al., 2005; Labre, 2005; Pope et al., 2000). However, there seems to be a competing tension between negative and positive body image within the literature. Not all studies frame the media as a negative source of information. For instance, women who exercise for fitness rather than thinness in relation to the ideal figure presented by the media may be protected against developing maladaptive behaviours and attitudes (Homan, 2010). Tiggemann and Pickering (1996) found a negative correlation between the hours spent watching sports programs and body dissatisfaction. Similarly, females who were shown images of athletic females engaging in sport made fewer objectifying statements about themselves (Daniels, 2009). Given the discrepancy of the media's ability to provoke both negative and positive thoughts, feelings, or behaviors for females, it is important to continue to address the impact of ideal health/fitness and sports magazine images on males.

Priming

Priming is "a means through which external sources trigger relevant cognitive activities that in turn activate behaviour" (Perugini & Prestwich, 2007, p. 304). Priming research focuses on the "temporary activation of an individual's mental representations by the environment and the effect this activation has on various psychological phenomenon" (Bargh & Chartrand, 2000, p. 4). Priming studies are therefore useful for examining current situational contexts and how external cues influence cognitions, motivations, and behaviors (Bargh & Chartrand, 2000). Priming theory posits that media exposure causes a temporary effect on viewers, suggesting that "for a short time after exposure, their thoughts, actions, and behaviours are colored by what they have just seen, heard, or read" (Jo & Berkowitz, 1994, pg. 45).

The growing health/fitness and sport industry has led to an abundance of magazines images that provide an opportunity for body comparison and observations of the current body ideals set by the media (Maibach, 2007). Therefore, the media and its promotion of the ideal male figure can easily serve as a prime. Maibach (2007) believes that the increasing availability of media in our environment has enhanced our day to day media consumption. The increased consumption of body ideals may cause males to passively shape their thoughts, feelings, and behaviours for a short time after exposure. This may in turn activate the required behaviours to obtain this ideal. More research regarding the effects of magazine image priming on males is needed to confirm such suppositions.

Internalization

Internalization can be understood as an individual's acceptance and adoption of body ideals portrayed by the media, which are then set as personal goals to achieve (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). With the growing presence of the media in day to day lives, internalizing body ideals is becoming a greater concern within men (Karazsia & Crowther, 2008; Morry & Staska, 2001).

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995) is a useful measure for assessing media internalization. Several revisions have led to the most recent version: SATAQ-3 by Karazsia and Crowther (2008). This version is the most appropriate male focused questionnaire for measuring the influence of the media on sports, exercise, and athleticism internalization, and the degree to which males internalize sociocultural beliefs about attractiveness (Karazsia & Crowther, 2008). In correspondence with Thompson and colleagues' (2004) SATAQ-3 for females, additional items and four subscales were added. The four subscales are: information (the importance of the media for obtaining information about being attractive), pressure (feelings of pressure imposed by the media to strive for cultural ideals of physical appearance), internalization-general (endorsement and acceptance of media messages that present unrealistic ideal images), and internalization-athlete (endorsement and acceptance of an athletic body ideal) (Thompson et al., 2004). Furthermore, feminine driven items were reworded to focus more on muscularity and masculinity (Karazsia & Crowther, 2008). Daniel

and Bridges (2010) recommended the use of Karazsia and Crowther's (2008) SATAQ-3 for all future studies examining body image in males.

Research has shown that males who read health/fitness magazines internalized the ideal body as being physically fit and muscular (Labre, 2005). However, internalization of this ideal is also responsible for self-objectification and mediated greater body dissatisfaction and disordered eating patterns (Morry & Staska, 2001; Tiggemann, 2003). However, few studies have examined the four internalization subscales separately. As magazine exposure may influence these four subscales differently, more research is needed to examine the internalization subscales separately.

Self-Objectification

For years, females have been bombarded with media messages and the socio-cultural pressure that looking thin and attractive is expected (Lewis, Medvedev, & Seponski, 2011). It was originally believed that males were not affected by the media (McCabe & Ricciardelli, 2004). Therefore, objectification theory was conceived to explain only female patterns of self-objectification.

Developed by Fredrickson and Roberts (1997), objectification theory postulates a framework for understanding the consequences that women experience from living in a western society where their bodies are constantly looked at and evaluated (Fredrickson & Roberts, 1997). As a result, women internalize a third person perspective on their physical selves and focus solely on their appearance (Fredrickson & Roberts, 1997). This process is known as self-

objectification and is the main underlying concept for objectification theory (Fredrickson & Roberts, 1997).

With the media being such an aggressive purveyor of pressure to conform to gender specific body standards, researchers suspect that males also experience self-objectification in ways similar to females (Strelan & Hargreaves, 2005). Therefore, studies examining self-objectification and men are becoming more prevalent and researchers indicate that objectification theory can be also be applied to males (Morry & Staska, 2001; Oehlhof, Musher-Eizenman, Neufeld, & Hauser, 2009). For males, higher levels of self-objectification were related to exercising for appearance based reasons (Strelan & Hargreaves, 2005) or wanting to obtain the muscular ideal body shape (Oehlhof et al., 2009). However, there is still limited clarity on the extent to which males claim ownership of body socialized ideals and experience self-objectification, suggesting a need for continued research.

Reasons for Exercise

There are seven main reasons for exercise that have been examined: weight control, attractiveness, body tone, health, fitness, enjoyment, and mood improvement (Silberstein, Striegel-Moore, Timko, & Rodin, 1988). More recently, researchers have classified these seven reasons for exercise into three domains: health/fitness, appearance, and enjoyment/mood (Prichard & Tiggemann, 2005; Strelan & Hargreaves, 2005; Strelan, Mehaffey, & Tiggemann, 2003). However, the literature for male reasons for exercise is inconsistent. Some studies report that males exercise for more health/fitness reasons (Tiggemann &

Williamson, 2000) while others report more appearance reasons (Strelan & Hargreaves, 2005). Combinations of reasons for exercise have also been shown. For instance, college aged males have reported that they value health/fitness reasons for exercise, but that appearance is an important contributing factor for engaging in exercise to aid in obtaining the ideal figure (Labre, 2005).

Further research has also been conducted to examine the relationship between an individual's reasons for exercise and their self-objectification levels. Greater self-objectification in males was related to exercising for appearance based reasons (Strelan & Hargreaves, 2005). This added further support that objectification theory can be applied to males, suggesting that males who exercise for their appearance may experience similar changes to self-objectification as females (Strelan & Hargreaves, 2005).

While the media can be an avid promoter of exercise through campaigns like ParticipACTION, it may also hinder exercise engagement. Exercise has been shown to reduce coronary heart disease, diabetes, and age-related degenerations, while simultaneously improving psychological well-being, energy, fitness, and mood (The Canadian Society for Exercise Physiology [CSEP], 2011; Health Canada, 2011). The Canadian Physical Activity Guidelines recommend that adults engage in 150 minutes of moderate to vigorous physical activity per week in order to obtain exercise benefits (CSEP, 2011). However, a recent Canadian Health Measures Survey reported that a striking 83% of male adults are not active enough to meet these guidelines (Colley et al., 2011). This may be a result of the increased daily media consumption, which "may displace time that we previously

spent being physically active" (Maibach, 2007, p. 355). Additionally, the preponderance of male ideal body images displayed by the media may lead males to exercise for more appearance reasons rather than for health or enjoyment reasons. Therefore more research is needed to understand reasons for exercise and the possible influence that health/fitness and sports magazine images have on male reasons for exercise.

Self-Efficacy

Exercise self-efficacy is defined as an individual's belief in their ability to achieve a given exercise goal (Bandura, 1997). Those who report higher levels of self-efficacy are more frequent exercisers, adhere to exercise programs, and persist in exercise behaviour in the face of challenges (McAuley, Elavsky, Jerome, Konopack, & Marquez, 2005). Three distinct sub-domains of self-efficacy have been identified which are believed to be important in sustaining exercise behaviours: task self-efficacy (an individual's confidence in their ability to perform elemental aspects of the behaviour), scheduling self-efficacy (an individual's confidence in their ability to schedule time for the behaviour) and coping self-efficacy (an individual's confidence in their ability to cope with challenges associated with the behaviour) (Rodgers & Sullivan, 2001). Scheduling and coping self-efficacy are directly related to exercise behaviour, while task self-efficacy is related to behavioural intentions (Rodgers & Sullivan, 2001; Rodgers, Hall, Blanchard, McAuley, & Munroe, 2002).

A study conducted by Berry and Howe (2005) is one of the only studies that provide evidence on the negative impact the media's promotion of

appearance has on self-efficacy. Results showed that men who viewed appearance-based exercise advertisements experienced a negative change in their self-efficacy (Berry & Howe, 2005). However, there is no research that has examined the influence of health/fitness and sports magazine images on the three self-efficacy subscales. If the media is able to reduce exercise self-efficacy, it may result in less exercise behaviour and could decrease an individual's confidence in their overall ability to exercise (Berry & Howe, 2005). Therefore, it is important to examine if magazine images have an effect on exercise self-efficacy for males.

Intentions for Exercise

Intentions are defined as a person's cognitive representation of readiness to perform a given behaviour (Ajzen & Fishbein, 1980). Intentions are markers of how hard people are willing to exert themselves in order to perform the behaviour (Ajzen, 1991) and are therefore predictive of behaviour (Maddux, 1995). The media has been shown to influence several health behaviour intentions. For example, females shown a video with a thin model had greater intentions to monitor their food consumption and limit their unhealthy food intake (Mask & Blanchard, 2011). In addition, video campaigns addressing skin cancer prevention resulted in greater intentions to change behaviour (Potente, Mciver, Anderson, & Coppa, 2011).

According to Ajzen and Fishbein's (1980) definition of intention, exercise intentions are an individual's readiness to engage in regular exercise. However, there are only a few studies that have examined the influences of the media on exercise intentions. Graham, Prapavessis, and Cameron (2006) found that those

exposed to a health promotion media DVD discussing the threats of colon cancer experienced higher intentions to exercise following the condition prime. Similar results were also found by McGowan and Prapavessis (2010).

Milne, Rodgers, Hall, and Wilson (2008) suggest that there are two main intentions for exercise behaviour: increase or maintain. However, there is no known research on the effects of health/fitness and sports magazine images on a male's acute intentions to increase or maintain current exercise behaviour. It is therefore important to examine this issue to enhance the literature surrounding body image.

Older Male Adults

The media is capable of influencing individuals of all ages. However, previous research suggests that body perceptions change and the effects of the media's body image portrayals have less of an influence as individuals get older (Fredrickson & Roberts, 1997). In a qualitative study conducted by Pompper et al. (2007), male participants in the baby boomer cohort emphasized 'health' and 'feeling good' in their older years to aid in enjoying retirement and continually providing for their family. Additionally, older adult males report engaging in exercise more for health/fitness and enjoyment/mood reasons given that it provides them with social interaction (Kolt, Driver, & Giles, 2004). Even so, older males still indicate that appearance reasons for exercise are somewhat important because magazine images constantly remind them of how they do not 'measure up' to the ideal body figure (Pompper et al., 2007). It is said that older males are more accepting of different body types and are less concerned about

their image, resulting in less body dissatisfaction and drive for muscularity (Nowell & Ricciardelli, 2008). Whereas college males are fairly rigid in their drive to obtain the toned and muscular ideal body (Labre, 2005).

Yet caution needs to be taken when comparing and examining research literature as the term 'older adult' has had several different age classifications. For instance, Nowell and Ricciardelli (2008) classified 'older males' as 22 to 30 years old while Wrand and Wright (2000) classified 'older males' as 33 to 59 years old. In a review conducted by Blond (2008), only two of the studies examined had a mean participant age over 25, indicating that a large proportion of body image studies are conducted with college aged individuals (Blond, 2008; McCabe & Ricciardelli, 2004). Therefore the results found for college aged males cannot be generalized to middle or older adult males as media influences may be different among the three age groups. Researchers have identified the need for more research on ideal body image in males over the age of 30 (Blond, 2008; Daniel & Bridges, 2010; Nowell & Ricciardelli, 2008). It is also recommended that future studies expose males of different age groups to the same experimental stimuli to establish any differences between ages (Blond, 2008).

Purpose

The purpose of this study was to examine the effects of being primed with popular health/fitness and sports magazines images (image-only, magazine cover, and control) and their influence on body perceptions and exercise related cognitions, such as internalization, self-objectification, reasons for exercise, exercise self-efficacy, and exercise intention.

Magazine covers often feature appearance comments and objectifying phrases that have been shown to result in higher body dissatisfaction (Aubrey, 2010; Nowell & Ricciardelli, 2008). The image-only and magazine cover conditions both depicted identical ideal male body images, yet the magazine cover condition contained the additional element of appearance comments and objectifying phrases seen on the cover of magazines. The purpose of this was to examine if male body perceptions and exercise related cognitions were influenced differently when males viewed both the images and surrounding text found on a magazine cover versus an image only.

It was also of interest to examine the moderating effects of age on the dependent variables. As the existing literature surrounding the media's influence on males is inconsistent, this study is beneficial as it was able to contribute to the growing body of research.

Hypotheses

Based on previous research studies, it is hypothesized that:

H1) Participants in the image-only condition will report higher levels of internalization on all four subscales and self-objectification compared to participants in the control group (Morry & Staska, 2001).

H2) Participants in the image-only condition will report more appearance reasons for exercise (Strelan & Hargreaves, 2005), while having greater intentions to increase their exercise (Milne et al., 2008). Comparatively, participants in the control condition will report more health/fitness reasons

for exercise, while having greater intentions to maintain their current exercise level.

H3) Participants in the image-only condition will report lower levels of scheduling and coping self-efficacy (Berry & Howe, 2005, Rodgers & Sullivan, 2001).

H4) Participants in the magazine cover condition will show slightly greater effects to those in the image-only condition due to viewing the added catch phrases and slogans (O'Malley, Latimer, & Berenbaum, 2011).

H5) The moderating effects of age: older males will report lower levels of internalization and self-objectification, exercise for health/fitness reasons, and have stronger intentions to maintain current activity level (Fredrickson & Roberts, 1997; Kolt et al., 2004; Pompper et al., 2007).

Methods

Pilot Study

Prior to implementing the main study, a pilot study was conducted to establish content validity for the images to be used in the main study. The goal of the pilot study was to obtain consensus on whether the images accurately represented a perceived ideal male.

Similar to Arbour and Martin Ginis's (2006) and Hobza, Walker, Yakushko and Peugh's (2007) procedure to establish content validity, 29 males with a mean age of 37.6 years (range 19 - 73) were presented with a series of images using PowerPoint. Raters were first shown 50 car magazine covers, followed by 60 male images from popular health/fitness and sports magazines.

Fewer car images were shown due to the inability to find 60 high quality and relatively recently published car magazine images that did not contain humans in the photos. Responding to the item-stem "*In your opinion, how well do the following images represent your vision of an ideal male?*" participants were asked to rate each image on a 5-point Likert interval scale ranging from 1 (*not at all representative*) to 5 (*extremely representative*). See Appendix A for the Image Validation Questionnaire.

Car images were chosen for the control condition because they are a male focused topic and because car magazines are read by both younger and older male adults (Pompper et al., 2007). In addition, car images have no relation to health/fitness or sports. As a result, this condition is differentiated from the health/fitness and sports magazine image conditions and is a neutral comparison group. Car images were obtained from various automobile magazines with high circulation rates within Canada, such as *Car and Driver, Motor Trend,* and *Road & Track* (Coast To Coast [CTC], 2010). The 20 images that male participants did not rate as ideal were used in the control condition for the main study. See Appendix B for control condition image examples. Table 1 presents the mean ratings of the 20 car magazine cover images chosen for the main study.

Fit and active male images were chosen for the image-only and magazine cover conditions to represent how the fitness industry portrays males. Each image was of a fit, physically toned, and active male depicting an aspect of fitness or sports, such as running or holding a football. Images were selected from popular health, fitness, and sports magazines with high circulation rates within Canada,

such as *Men's Health* or *Golf Digest* (CTC, 2010). The magazines chosen for this study targeted different ages to represent the wide age range of participants within the study's sample.

However, the pilot study results for the male images were not unified and only 14 images were above the original 3.5 cut-off mark. This is likely because there was a broad spectrum of ages involved in the pilot study. That is, images that younger males considered ideal did not parallel what older males considered ideal. Therefore, the cut-off mark was reduced to 3.25 in order to obtain 20 images that were seen as ideal across all ages. Table 1 presents the mean ratings of the 20 ideal male body images chosen for the main study. Fifteen of the 20 images were Caucasian males dressed in athletic attire. The remaining five images were African American males also dressed in athletic attire. Participants did not rate any of the images of older fit and active males as ideal in the pilot study.

The same 20 fit male body images were used for both the image-only and magazine cover conditions in the main study. To differentiate the two conditions, the 20 images were superimposed onto popular health/fitness and sports magazine covers to generate the images for the magazine cover condition in the main study. This process was done using computer manipulation via Adobe Photoshop. Titles of the magazines used for this condition were *Men's Health, Golf Digest, ESPN, Zoomer,* and *Sports Illustrated*. See Appendix C for a comparison of the image-only and magazine cover image examples.

Table 1

Mean Ratings for the Pilot Study Images used in the Main Study

Image Number	Car Images	Male Images
1	2.1	3.3
2	2.2	3.7
3	2.0	3.7
4	2.6	3.6
5	2.4	3.8
6	2.5	3.3
7	2.5	3.5
8	2.4	3.6
9	2.6	3.5
10	2.4	3.3
11	2.5	3.6
12	2.2	3.3
13	2.3	3.8
14	1.9	3.4
15	2.6	3.4
16	1.9	3.7
17	2.6	3.6
18	2.2	3.5
19	2.6	3.4
20	2.2	3.7

Main Study

Participants. The 3 (condition) x 3 (age) ANOVA design generated nine sample groups. In addition, the average effect size in the literature surrounding exposure to ideal male body images was 0.42 (Blond, 2008), a low-medium effect size (Cohen, 1992). Therefore, to make this study statistically powered with α = .05, a medium effect size, ANOVA statistical procedures, and 9 sample groups, approximately 30 participants were recommended in each group (Cohen, 1992). Thus, a total of 270 participants were required. To account for possible outliers and missing data, the recommended total sample size was increased to 300 participants.

Males (N = 300, mean age = 36.70 (SD = 12.74) in years) from the Edmonton region participated in this study. Participants were recruited from the University of Alberta and two recreation complexes: Saville Community Sports Centre and the Go Centre. Inclusion criteria consisted of: (a) being male, (b) the ability to read, write, and speak English fluently, and (c) aged 18 years or older. Exclusion criteria consisted of: (a) visual impairments and (b) being female. Participants from the university were recruited through inter-faculty emailing lists, personal contact, and posters around the University of Alberta campus. Full-time and part-time undergraduate and graduate students, university faculty, and community members were all invited to participate in this study. Participants from the recreation complexes were recruited by being approached by the researcher, as well as reading the study's information letter or advertisement.

Measures. Several questionnaires were administered to each participant. The questionnaire package took approximately 15 minutes to complete.

Internalization. Karazsia and Crowther's (2008) SATAQ-3 version for males was used for this study. This 30-item self-report questionnaire measures male internalization towards athletic bodies and appearance on four subscales: information (9-items; possible scores range from 9 to 45), pressure (7-items; possible scores range from 7 to 35), internalization-general (9-items; possible scores range from 9 to 45), and internalization-athlete (5-items; possible scores range from 9 to 25). All items are ranked on a 5-point Likert interval scale ranging from 1 (*completely disagree)* to 5 (*completely agree*) with higher scores representing greater internalization. Separate scores are computed for each of the

four subscales by summing all of the items that comprise that subscale. Strong convergent and discriminant validity have been established for this questionnaire (Karazsia & Crowther, 2008). Studies also have shown excellent internal consistency for each of the four subscales: information (.95), pressure (.92), internalization-general (.94), and internalization-athlete (.85) (Karazsia & Crowther, 2008). High internal consistency was also found for all four subscales in this study: information (.94), pressure (.91), internalization-general (.93), and internalization-athlete (.86). See Appendix D.

Activity Level. Godin and Shepard's (1985) Godin Leisure Time Exercise Questionnaire (GLTEQ) was used to measure participant activity level. This open ended questionnaire assesses the number of times an individual engages in various exercise intensity levels longer than 15 minutes during their free time. For this measure, exercise is categorized as strenuous (heart beats rapidly, sweating, e.g. running), moderate (not exhausting, light perspiration, e.g. easy bicycling), and mild (minimal effort, no perspiration, e.g. fishing). This questionnaire also inquires about the frequency of leisure time exercise in a typical week that is long enough for the participant to work up a sweat. This item is measured on a 3-point Likert interval scale ranging from 1 (*often*) to 3 (*never*). However, this question was not examined in this study. Weekly frequencies were multiplied by nine for strenuous activity, five for moderate activity, and three for mild activity to order to obtain three separate Metabolic Equivalent (MET) scores. According to Godin (2011), moderate and strenuous activities are the strongest contributors for health benefits. It was therefore recommended to use only strenuous and moderate MET

scores to generate a total weekly MET score to assess activity level (Godin, 2011). Participants were categorized as active if they achieved a total leisure time MET score of 24 or higher, moderately active for scores between 14-23, and inactive for scores lower then 14 (Godin, 2011). See Appendix E.

Self-Objectification. Self-objectification was measured by the Self-Objectification Questionnaire developed by Noll and Fredrickson (1998). Participants rank 10 attributes ranging from 1 (*least important*) to 10 (*most important*) according to their impact on physical self-concept. Five of the attributes are appearance based (sex appeal, measurement, weight, physical attractiveness, and muscle tone) and five are competency based (health, muscular strength, physical coordination, stamina, and physical fitness). Final self-objectification scores are obtained by subtracting the sum of the competency attributes from the sum of the appearance attributes. Scores range from +25 to –25 with more positive scores reflecting a greater emphasis on appearance and therefore implying stronger self-objectification (Noll & Fredrickson, 1998). See Appendix F.

Exercise Intentions. Using a 7-point Likert interval scale ranging from 1 (*strongly disagree*) to 7 (s*trongly agree*), participants were asked to indicate their intention to maintain, increase, or decrease self-perceived physical activity level in the forthcoming month (Milne et al., 2008). Each response was assessed separately. See Appendix G.

***Reasons for Exercise*.** Developed by Silberstein et al. (1988), the Reasons for Exercise Inventory (REI) measures the importance of various reasons for

exercise for an individual. This 24-item self-report measure consists of seven exercise subscales: weight control, attractiveness, body tone, health, fitness, enjoyment, and mood improvement. All items are ranked on a 7-point Likert interval scale ranging from 1 (*not important at all*) to 7 (*extremely important*). Following the methodology of Strelan and Hargreaves (2005) and Strelan et al. (2003), the seven subscales were collapsed into three conceptually distinct domains for ease of interpretation: appearance reasons (weight control, attractiveness, and body tone), health/fitness reasons (health and fitness), and enjoyment/mood reasons (enjoyment and mood improvement). For each of the three domains, a mean score was computed using the items that comprise each subscale. Higher scores represent the more prominent reasons why an individual engages in exercise. Prichard and Tiggemann (2005) found acceptable internal consistency for the three scales: appearance (.85), health/fitness (.85), and enjoyment/mood (.76). Similar levels of internal consistency were also found for all the three scales in this study: appearance (.84), health/fitness (.85), and enjoyment/mood (.78). See Appendix H.

Exercise Self-Efficacy. The Multidimensional Exercise Self-Efficacy Scale (MSES) developed by Rodgers, Wilson, Hall, Fraser, & Murray (2008), measures an individual's self-efficacy for exercise. Following the item-stem "*How confident are you that you can…*" participants respond to nine items on a 10-point Likert interval scale ranging from 1 (*not confident at all*) to 10 (*completely confident*). Of the nine items, three items measure task self-efficacy, three items measure coping self-efficacy, and three items measure scheduling

self-efficacy. Separate task, coping, and scheduling self-efficacy scores are obtained by calculating the mean of the three items comprising each subscale. Adequate convergent and discriminant validity, as well as acceptable internal consistency for each of the three subscales have been established: task (.82), coping (.87), and scheduling (.93) (Rodgers et al., 2008). Strong internal consistency was also found for each of the three subscales in this study: task (.88), coping (.87), and scheduling (.93). See Appendix I.

Demographics. Participants self-reported their age in years and selected their ethnicity from a provided list. See Appendix J.

Procedure and Design. This study was approved by The University of Alberta Human Research Ethics Board 3 (see Appendix K). Data were collected from January 2012 to March 2012. This study was a randomized, post-test only design which utilized convenience sampling based on the accessibility of participants to the researcher. The study was advertised as "Male Depictions in Popular Print Media" and participants were told that they would have to watch a 5-minute slideshow and answer a few questionnaires. When explaining the study, there was no mention of exercise or the three separate magazine image conditions.

The overall procedure outlined for this study is similar to the procedure employed by Hobza et al., (2007) and Arbour and Martin Ginis (2006). Individuals were first given an Information Letter containing all of the necessary information about the study, followed by an opportunity to ask questions and discuss the study (see Appendix L). If they agreed to the terms of the study and

understood their rights, an Informed Consent document was signed (see Appendix M).

Participants were then randomly assigned into one of three conditions: image-only, magazine cover, or control. Participants in each of the three groups were treated exactly the same except for the image primes presented. Using PowerPoint, each individual began by viewing the study's instructions and their randomly assigned condition slideshow displaying the images chosen from the pilot study. Each slide displayed a single image and automatically transitioned to the next slide after 10 seconds of exposure. Timing the 20 images for 10 seconds of exposure ensured that each participant received the same length of prime exposure. This section of the study took approximately 4 minutes to complete.

Following the image prime exposure, each participant completed the questionnaire package. To maintain anonymity, each participant was assigned a participant number for their questionnaire data which was not linked to their name in any way. All questionnaires were completed individually unless clarification from the researcher was necessary. This prevented the researcher from creating a bias in the results by either communicating a desired outcome or giving feedback that could have caused a variation in the response given. In addition, participants were told that there was no right or wrong answer to any of the questions with the intent of minimizing evaluation apprehension. The entire study took approximately 20 minutes to complete per participant.

Upon completion of the study, each participant was thanked for volunteering their time and any further questions were answered. They were also

encouraged to inform other males about the study (snowball sampling). However, participants were strongly discouraged from divulging any specific details about the study to prevent potential participants from gaining sufficient knowledge of the study's purpose prior to participating.

Data Analysis. Four of the 14 dependent variables initially considered for analysis were omitted. The enjoyment/mood subscale from the Reasons for Exercise Inventory was not analyzed because it is not a prominent factor in health/fitness and sports magazines. Additionally, the three exercise self-efficacy subscales (task, coping, and scheduling) were excluded from analysis and the subsequent self-efficacy hypothesis was not assessed. According to Rodgers and Sullivan (2001), the three subscales of self-efficacy are dependent on an individual's phase of change, which is measured through longitudinal designs. Given the immediate measurement and acute nature of this study, measuring task, scheduling, and coping self-efficacy did not fit the scope of the study. As a result, 10 dependent variables were analyzed.

A total of ten 3 (image-only, magazine cover, and control condition) x 3 (youngest, middle, and oldest) fully crossed, fixed effects Analyses of Variance (ANOVA) were conducted. The 10 dependent variables included were information, pressure, internalization-general, internalization-athlete, self-objectification, appearance reasons for exercise, health reasons for exercise, intentions to maintain exercise, intentions to increase exercise, and intentions to decrease exercise. To control for spurious type 1 error from the numerous ANOVA analyses conducted, a Bonferroni correction factor of $p < .005$ was used.

To explore the MET score as a possible covariate, correlations were analyzed. Given that only health reasons for exercise was correlated with MET score, it was rejected as an appropriate covariate for all dependent variables in order to keep statistical analyses and procedures consistent. See Table 2 for correlations.

Although conducting a MANOVA would have helped to control spurious type 1 error, ANOVAs were chosen over MANOVAs for several reasons. According to Tabachnick and Fidell (2001), MANOVAs work best when the dependent variables are highly negatively correlated. They are less desirable if the variables are highly positively correlated or near zero. Given that the dependent variable correlations for this study were somewhat highly positively correlated or near zero, this would violate a key component of computing a successful MANOVA (see Table 2). In addition, MANOVAs are not always easy to interpret. MANOVA results often show how one independent variable influences a combination of dependent variables. Therefore it is difficult to determine the effects of each independent variable on a single dependent variable (Tabachnick & Fidell, 2001). A step-down procedure would be required to extract this information which complicates the statistical method (Tabachnick & Fidell, 2001). Lastly, the statistical power for a MANOVA is largely influenced by the number of dependent variables. One degree of freedom is lost for every dependent variable in the analysis (Tabachnick & Fidell, 2001). Given there are 10 dependent variables within this study, power would be greatly reduced from the lost degrees of freedom. Power is also reduced when the variables are moderately or highly correlated (Tabachnick & Fidell, 2001), which was found for this study.

Table 2

Pearson Correlations Coefficients for Dependent Variables and Possible Covariates

	MET score	Intern – Inform.	Intern – Pressure	Intern – General	Intern – Athlete	Self-Objectify	REI – App.	REI – Health	Intend – Main.	Intend – Incre.	Intend – Decre.
MET score	1										
Intern – Inform.	-.009	1									
Intern – Pressure	.001	.466**	1								
Intern – General	.049	.461**	.663**	1							
Intern – Athlete	.044	.345**	.579**	.820**	1						
Self-Objectify	-.052	.149*	.256**	.250**	.219**	1					
REI – App	.004	.195**	.403**	.369**	.440**	.224**	1				
REI – Health	.202**	.013	.026	.071	.152*	-.160**	.491**	1			
Intend – Main.	.111	-.016	-.050	-.107	-.080	-.083	-.110	.009	1		
Intend – Incre.	-.106	.074	.194**	.148*	.213**	-.075	.314**	.284**	-.325**	1	
Intend – Decre.	-.044	.029	-.025	-.060	-.096	.021	-.118*	-.207**	-.030	-.286**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: Inter (Internalization; SATAQ3), REI (Reasons for Exercise Inventory), MSES (Multidimensional Exercise Self-Efficacy Scale), Intend (Intentions to Exercise).

Results

Determination of the Final Sample

Before analysis, data were inspected for outliers (>3 standard deviations from the mean) and missing data. The data of five participants were removed because of their extreme MET scores, twelve participants because of missing data, one participant because he rushed through the experiment, and two participants due to their lack of attention while participating, such as talking to individuals walking by or answering phone calls. After eliminating the data from these participants, data from 280 participants were analyzed. The number of subjects within each of the three conditions was 95 for image-only, 94 for magazine cover, and 91 for control.

Preliminary Analysis

One-way ANOVAs and Chi-square analyses were performed to ensure that randomization of the participants into the three conditions was successful. The three conditions did not differ significantly in terms of age ($F(2, 277) = 0.262$, $p = .77$, $\eta^2 = .002$), ethnicity ($\chi^2(12, N = 280) = 8.27$, $p = .76$), or METS score ($F(2, 277) = 0.24$, $p = .79$, $\eta^2 = .002$).

The ages of the 280 participants ranged from 18 to 68, with a mean age of 36.34 (SD = 12.54) years. Age was also classified into 3 separate groups based on equal thirds of the total sample: youngest (<28, n = 105); middle (29-43, n = 84); oldest (>44, n = 91). Age classifications did not differ significantly per condition, $\chi^2(12, N = 280) = 16.22$, $p = .18$. Likewise, the participants were classified into active (n = 212, 75.7%), moderately active (n = 49, 17.5%), and inactive (n = 19,

6.8%) based on their MET score. However, given the inadequate representation of moderately and inactive participants, activity level was not analyzed further. See Table 3 for participant age and activity level descriptive statistics by condition. The most dominant self-classified ethnic group within the full sample was Caucasian (n = 230, 82.1%). Therefore, ethnicity was also not analyzed further. See Table 4 for participant ethnicity descriptive data by condition.

Table 3

Descriptive Data for Participant Age and Activity Level by Condition

	Image-Only (N = 95)				Magazine Cover (N = 94)				Control (N = 91)			
	% (*n*)	Mean (SD)	Range Min	Range Max	% (*n*)	Mean (SD)	Range Min	Range Max	% (*n*)	Mean (SD)	Range Min	Range Max
Age												
Youngest	42% (40)	23.50 (2.94)	19	28	32% (30)	24.30 (2.84)	18	18	38% (35)	23.14 (3.01)	18	28
Middle	24% (23)	37.26 (4.34)	29	43	26% (34)	35.03 (5.57)	29	43	30% (27)	35.70 (4.76)	29	43
Oldest	34% (32)	50.97 (5.59)	44	63	32% (30)	50.40 (5.44)	44	65	32% (29)	51.48 (6.05)	44	68
Activity Level (METS)												
Active	75% (71)	47.30 (22.24)	24	115	79% (74)	48.49 (19.80)	24	113	74% (67)	48.85 (19.02)	24	98
Moderately Active	18% (17)	18.88 (2.60)	14	23	17% (16)	18.00 (3.33)	14	23	18% (16)	16.88 (2.66)	14	20
Inactive	7% (7)	7.00 (3.83)	0	10	4% (4)	3.75 (4.79)	0	10	9% (8)	7.13 (3.93)	0	10

Table 4

Descriptive Data for Participant Ethnicities by Condition

Ethnicity [% (*n*)]	Image-Only (N = 95)	Magazine Cover (N = 94)	Control (N = 91)
Asian	7% (7)	10% (9)	8% (7)
African American	2% (2)	1% (1)	3% (3)
Caucasian	80% (76)	82% (77)	85% (77)
Hispanic	1% (1)	2% (2)	0% (0)
Indigenous/ Aboriginal	1% (1)	2% (2)	1% (1)
Unidentified	1% (1)	0% (0)	1% (1)
Other	7% (7)	3% (3)	2% (2)

Main Analysis

The results of the ten 3 (condition) x 3 (age) fixed effects ANOVAs revealed that there were no significant interactions between age and condition for any of the ten dependent variables. Three of the ten dependent variables presented significant main effects: internalization-general, internalization-athlete, and self-objectification. The remaining seven dependent variables were not found significant: information, pressure, appearance reasons for exercise, health reasons for exercise, intentions to maintain exercise, intentions to increase exercise, and intentions to decrease exercise. The means, standard deviations, sample sizes, and ANOVA results for all 10 dependent variables are provided in Tables 5 and 6.

Tukey's Honestly Significant Difference (HSD) planned post hoc procedures were used following significant main effects. For consistency, post hoc procedures were tested using $p < 0.005$. Tukey's procedure was chosen over

other post hoc procedures, such as Scheffé's procedure, because only simple contrasts were of interest and Tukey's test is more powerful than Scheffé's test (Tabachnick & Fidell, 2001). The harmonic mean of the sample sizes was used for both condition and age post hoc procedures to take into account the unequal sample sizes in the groups.

Table 5

Means, Standard Deviations, and ANOVA results for Dependent Variables by Condition

	Image-Only Condition (N = 95)	Magazine Cover Condition (N = 94)	Control Condition (N = 91)	F-value	*p*-value	η^2
Inter - Information	26.64 (8.22)	25.14 (8.16)	25.24 (8.75)	0.87	.421	.006
Inter - Pressure	19.08 (6.55)	18.89 (6.78)	16.48 (6.54)	4.45	.013	.032
Inter - General	27.18 (7.92)	25.77 (8.37)	23.23 (8.49)	5.65	.004*	.040
Inter - Athlete	17.67 (4.50)	16.82 (4.69)	15.98 (4.51)	3.29	.039	.024
Self-Objectification	-9.61 (13.26)	-7.47 (12.53)	-10.16 (13.04)	1.27	.283	.009
REI - Appearance	4.24 (1.09)	4.28 (1.06)	4.04 (1.27)	0.91	.405	.007
REI - Health	5.43 (0.96)	5.55 (0.81)	5.45 (1.02)	0.37	.692	.003
Intend – Maintain	5.31 (1.76)	5.12 (2.02)	5.18 (2.04)	0.19	.822	.001
Intend – Increase	5.29 (1.62)	5.30 (1.74)	5.42 (1.56)	0.25	.778	.002
Intend – Decrease	1.61 (1.10)	1.47 (1.07)	1.48 (0.99)	0.43	.652	.003

* $p < .005$

Note: Inter (Internalization, SATAQ-3), REI (Reasons for Exercise Inventory), Intend (Exercise Intentions); Mean(Standard Deviation).

Table 6

Means, Standard Deviations, and ANOVA results for Dependent Variables by Age

	Youngest (N = 105)	Middle Aged (N = 84)	Oldest (N = 91)	F-value	*p*-value	η^2
Inter - Information	26.24 (8.60)	26.58 (7.43)	24.21 (8.82)	2.08	.128	.015
Inter - Pressure	18.88 (7.03)	18.93 (6.63)	16.67 (6.18)	3.65	.027	.026
Inter - General	27.88 (8.08)	26.27 (7.87)	21.80 (8.06)	15.19	.000*	.101
Inter - Athlete	18.19 (4.38)	17.14 (4.05)	14.99 (4.77)	13.06	.000*	.088
Self-Objectification	-6.68 (12.38)	-7.95 (14.00)	-12.87 (11.82)	6.13	.002*	.043
REI - Appearance	4.18 (1.21)	4.33 (1.21)	4.08 (1.10)	0.86	.425	.006
REI - Health	5.41 (0.90)	5.52 (1.04)	5.52 (0.86)	0.36	.699	.003
Intend – Maintain	5.29 (1.97)	5.08 (2.06)	5.21 (1.79)	0.22	.799	.002
Intend – Increase	5.40 (1.65)	5.37 (1.71)	5.23 (1.58)	0.21	.814	.002
Intend – Decrease	1.41 (0.91)	1.39 (0.82)	1.77 (1.33)	3.78	.024	.027

* $p < .005$

Note: Inter (Internalization, SATAQ-3), REI (Reasons for Exercise Inventory), Intend (Exercise Intentions); Mean(Standard Deviation).

Internalization-General. At $p < .005$, the main effect for condition was significant for internalization-general. See Table 5. Tukey's post hoc test revealed that the image-only condition had significantly higher levels of internalization-general compared to the control condition. The magazine cover condition was not significantly different than either the image-only or control conditions.

A significant main effect for age was also found for internalization-general. See Table 6. Tukey's post hoc test revealed that older males have significantly lower levels of internalization-general compared to younger and

middle aged males. There were no significant differences found between younger and middle aged males.

Internalization-Athlete. A significant main effect for age was found for internalization-athlete. See Table 6. Tukey's post hoc test revealed that older males have significantly lower internalization-athlete scores compared to younger and middle aged males. There were no significant differences found between younger and middle aged males.

Self-Objectification. There was a significant age main effect for self-objectification. See Table 6. Tukey's post hoc test revealed that older males have significantly lower levels of self-objectification compared to younger males. Middle aged males were not statistically different from the younger and older males.

Discussion

There are a growing number of health/fitness and sports magazines that promote body appearance and obtaining a toned yet muscular body. This study sought to contribute to the growing body of literature by examining acute exposure to health/fitness and sports magazine images depicting the ideal fit male body and their influence on body perceptions and exercise related cognitions. A secondary purpose was to examine the moderating effects of age on the dependent variables. Even though the findings of this study did not fully correspond to the stated hypotheses, this study still presented some unique trends and outcomes that contribute to the literature.

Internalization

This study hypothesized that males in the image-only condition would report the highest levels of internalization. Given that three of the four internalization subscales were not significant, the hypothesis was only partially supported. However, a noteworthy and overarching trend was presented within the data of this study. Males in the image-only condition reported the highest levels of internalization on all four internalization subscales. This finding suggests that males are more influenced when viewing only images of ideal figures rather than viewing both the text and pictorial displays.

It was interesting to find that only internalization-general was significantly different by condition. Compared to the magazine cover and control condition, further post hoc procedures revealed that those in the image-only condition experienced greater endorsement and acceptance of ideal and unrealistic portrayals of the body that are presented by magazine images, television, and film. This outcome coincides with findings by Morry and Staska (2001) where males who read fitness magazines experienced greater internalization-general towards societal ideals about appearance. Similar results have also been found for females (Tiggemann, 2003).

Since limited research is available examining magazine images of fit active males and their influence on the four internalization subscales separately, it is difficult to draw conclusions as to why internalization-general was the only subscale found significant. However, speculations can be made based on other research literature. It is possible that other predictors of internalization not

accounted for or measured in this study influenced internalization-general. For instance, Pelletier, Dion, and Lévesque (2004) found that females who are highly self-determined, which indicates that their actions are determined by internal motivations and interests rather than external factors, are less likely to internalize media body standards. However, Vartanian (2009) suggests that predictors of internalization among men remain relatively unknown and likely differ from females. Researchers are still unsure if personality and external factors, such as social pressure or teasing, influence male internalization (Ricciardelli & McCabe, 2004). Future studies should continue to broaden the literature on other constructs and their contribution to the internalization subscales.

It is also possible that participant implicit and explicit believability of the magazine images influenced internalization-general. Implicit refers to cognitive responses and thoughts that are unavailable to awareness or not easily controlled consciously, whereas explicit refers to responses intended by the participant after prime exposure (Huang & Hutchinson, 2008). Huang and Hutchinson (2008) found that implicit measures of advertising belief were better predictors of attitudes than explicit advertising belief measures. Similar results were found by Berry, Jones, McLeod, & Spence, (2011). Given that there were no significant findings for the information, pressure, and internalization-athlete subscales, it is possible that participants did not implicitly endorse the images and only slightly explicitly believed the images presented, thus resulting in the significant internalization-general subscale. This could be a result of participants already being active or believing that the images were unattainable. It would be

interesting to replicate this study using implicit and explicit measures of internalization to further understand the complex nature of the media and body image.

Lastly, the significant internalization-general finding could be related to the Tripartite Influence Model (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). This model provides a conceptual framework for understanding the relationships among three sociocultural influences (parents, peers, and media) and two mechanisms (internalization and social comparison) that have an influence on body dissatisfaction. Males tend to report more frequently comparing themselves to those with similar bodies, such as peers, and those with desirable physical features, such as sports athletes (Karazsia & Crowther, 2009; Krayer, Ingledew, & Iphofen, 2008). Thompson, Schaefer, and Menzel (2012) indicate that peers have a remarkable influence on internalization of general appearance ideals. In addition, social influence from peers has been shown to positively predict internalization-general (Karazsia & Crowther, 2009). Given such findings and that the majority of participant testing took place at recreation complexes, males could have experienced greater internalization-general because of the abundance of peers or teammates nearby.

Interestingly, Karazsia and Crowther (2009) suggest that the information males obtain through body comparisons to sports athletes can influence internalization. According to these findings and the fact that the images shown to participants focused on sport and fitness, it was surprising that internalization-athlete was not found significant. Researchers suggest that internalizing the

athletic ideal body may actually be beneficial and protect against the harmful effects of the media (Homan, McHugh, Wells, Watson, & King, 2012). Studies by Homan (2010) and Homan et al. (2012) both found that internalization of the athletic ideal did not produce negative feelings about the body. Additionally, sports media exposure has been linked to positive feelings about the body (Bissell, 2004). It is said that those who endorse the athletic ideal are likely to engage in behaviours to achieve this ideal, such as exercising or eating healthy (Homan et al., 2012). Therefore, males internalizing the athletic ideal shown on the covers of health/fitness and sports magazines may provide them with a source of motivation, thus yielding health benefits. However, other studies have found that internalization of the athletic ideal mediated the relationship between body dissatisfaction and harmful behaviours (Cahill & Mussap, 2007). As very different results have been found in relation to internalization-athlete, clearly more research is necessary. In addition, it would be interesting to further explore the potential positive benefits and motivational aspects of internalizing the athletic ideal male body. Whereas several studies focus on the negative outcomes associated with the media, it is evident that more research should focus on the positive aspects of the media and how the media can be used to promote positive body perceptions and exercise related cognitions.

Despite the interesting trends, the lack of significance for information, pressure, and internalization-athlete could be attributed to participants questioning the amount they could relate to the ideal body figure shown in the conditions. Males have stated that they do not accept health/fitness and sports magazine

images uncritically (Arbour & Martin Ginis, 2006; Labre, 2005; Pompper et al., 2007). They consider what is attainable and realistic before comparing their body to ideal images, which results in lower levels of internalization (Arbour & Martin Ginis, 2006). In a qualitative study by Labre (2005), participants had a hard time relating to ideal figures presented by the media because they believed them to be unrealistic and unfair. They understood that in order to obtain and maintain the body figure shown on magazine covers, one's life would have to revolve around fitness and appearance, which is precisely the job of the models and athletes shown on health/fitness and sports magazine covers (Labre, 2005). These previous studies speak directly to the findings of this study. Male participants in this study might not have been able to relate to the images presented and only internalized a small amount, hence the non-significant information, pressure, and internalization-athlete subscales and the significant internalization-general subscale. Clearly there is more work to be done in terms of internalization to fully understand its role in relation to media body ideal impact on males.

There were significant age main effects found for internalization on two of the four subscales: internalization-general and internalization-athlete. Planned post hoc procedures revealed that older males had significantly lower levels of internalization-general and internalization-athlete compared to younger and middle aged males. Although not significant, older males also reported the lowest values for information and pressure. Therefore, this study's hypothesis was reasonably confirmed.

The Social Comparison Theory (Festinger, 1954) could be used to explain the age main effect findings. The theory states that humans gain information about themselves and their characteristics by making comparisons to others perceived as better or ideal (Festinger, 1954). The findings of this study are consistent with the growing body of literature that suggests that social comparison decreases with age. Compared to older males, younger and middle aged males are still acutely aware of magazine images standards (Pompper et al., 2007). They are therefore more likely to internalize the ideal figure, set it as the gold standard for achievement, and self-objectify themselves through social comparison (McCabe & Ricciardelli, 2004). Comparatively, older males are more mature and critical in their thinking towards body ideals. They tend to focus more on who they are as a person rather than on their body image (Pompper et al., 2007). As a result, they do not compare their body to the ideal figure as much as younger males and therefore protect themselves against negative body perceptions, such as body dissatisfaction, internalization, and self-objectification (Arbour & Martin Ginis, 2006). In fact, older males may shift their body comparisons to more realistic figures, such as friends, peers, or family (Bessenoff & Del Priore, 2007).

It has also been suggested that magazine images exude youthfulness which may not be a source of internalization for older adults (Slevec & Tiggemann, 2011). Compared to magazines, Slevec and Tiggemann (2011) found that only television viewing was associated with body dissatisfaction for older females aged 35-55. This is likely because middle aged to older women are as equally represented to younger individuals in television shows, commercials, or movies.

Slevec and Tiggemann (2011) also suggest that reality makeover television shows, such as *The Biggest Loser,* may be more influential towards internalization. These shows stress that the average body is a discrepancy that must be improved and physical transformation of one's current body to a "perfect" or fit body will result in an all-round better you (Banet-Weiser & Portwood-Stacer, 2006). Transformation of the body on *The Biggest Loser* is often portrayed through intense workout regimes, which depict exercise as hard work rather than enjoyable or fun (Berry, McLeod, Pankratow, & Walker, in press). In fact, participants who were primed with a segment of *The Biggest Loser* displayed worse affective attitudes compared to participants in the control condition (Berry et al., in press). This is troubling considering that affective attitudes are predictive of exercise behavior (Rhodes, Blanchard, & Matheson, 2006). It is therefore possible that television depictions of the ideal body and body transformations through exercise may be more influential on internalization than magazine images. If this is the case, it is not surprising that older males had lower levels of internalization. It would be interesting to replicate this study and include an aspect of television viewing to further compare male internalization and various age groups.

It is important to find ways that will reduce internalization and protect people against the potential harmful effects of the media (Grogan, 2010). Reducing internalization is likely to reduce the level of concern males experience about their physical appearance (Wilksch, Tiggemann, & Wade, 2006). Diedrichs and Lee (2011) suggest that individual-level training to resist internalization of

ideal body images presented by the media is probably more realistic than trying to reduce the prevalence of these images in the environment.

Self-Objectification

A large proportion of self-objectification research focuses on women (Tiggemann & Kuring, 2004). Therefore this study sought to broaden the scope of examining self-objectification in males. It was postulated that those in the image-only condition would have greater levels of self-objectification compared to the control group. However, this hypothesis was not supported since there were no significant differences found. This outcome is similar to studies by Aubrey (2010) and Daniel and Bridges (2010). Female participants did not experience changes in their self-objectification following health or appearance magazine image exposure (Aubrey, 2010). Similarly, self-objectification in male participants did not lead to body image concerns (Daniel & Bridges, 2010). However, the findings of the present study contradicts Morry and Staska (2001) and Roberts and Gettman (2004). Morry and Staska (2001) found that males who read health/fitness magazines were more likely to have a negative body image and engage in self-objectification. Furthermore, exposure to sexually objectifying words has been shown to prime individual's self-objectification levels (Roberts & Gettman, 2004).

Grabe and Jackson (2009) indicate that males experience lower levels of self-objectification compared to females because of the situations and environments that males find themselves in. Since these situations are less frequent and less likely to result in objectifying the body, males may be protected

against developing high levels of self-objectification (Grabe & Jackson, 2009). Conversely, Hebl, King, and Lin (2004) provide evidence that males are not exempt from self-objectification. When males are placed in an objectifying situation, such as wearing a speedo bathing suit, they experience higher levels of self-objectification (Hebl, King, & Lin, 2004). Given that many of the participants completed the study in recreation complexes and were likely wearing comfortable athletic attire, the fitness and sporting environment may not have been a setting that participants found objectifying or be influenced by images of ideal males. It is also postulated that male participants in this study were comfortable with who they are and therefore did not feel the need to self-objectify their bodies.

Another plausible explanation for the absence of a significant self-objectification finding could be related to trait versus state self-objectification. Fredrickson and Roberts (1997) report that self-objectification can be described as either an emotional state or personality trait. Trait self-objectification is the extent to which a person adopts an observer's point of view of the self (Harrison & Fredrickson, 2003). Furthermore, trait self-objectification is usually stable across time, less sensitive to temporary exposure stimuli, and is measured by the Self-Objectification Questionnaire (Aubrey, 2010; Harper & Tiggemann, 2008). In contrast, certain situations or stimuli can intensify an individual's temporary perspective on the importance of appearance (Harper & Tiggemann, 2008). This is known as state self-objectification and has been shown to be more susceptible to manipulation (Harper & Tiggemann, 2008; Harrison & Fredrickson, 2003). It is therefore possible that the short bouts of exposure to the magazine image stimuli

influenced state self-objectification rather than trait self-objectification to which the Self-Objectification Questionnaire was designed to measure.

Daniel and Bridges (2010) also suggest that the Self-Objectification Questionnaire may not be the most appropriate questionnaire for males. They believed this caused their unexpected lack of significant self-objectification results. This may have also been the case for the present study. Daniel and Bridges (2010) note that the Self-Objectification Questionnaire was originally created for females and limited research is available on the measurement properties for males; thus questioning its applicability to males. Similarly, Tiggemann and Kuring (2004) suggest that the 10 attributes used in the questionnaire may be interpreted differently between males and females. For example, 'strength' may be seen as a competency attribute for females, whereas it may be seen as an appearance attribute for males (Tiggemann & Kuring, 2004). As a result, the Self-Objectification Questionnaire may be measuring male and female self-objectification differently. Given this possible self-objectification measurement issue, researchers should explore the creation of an appropriate male specific Self-Objectification Questionnaire (Tiggemann & Kuring, 2004).

It is unlikely that males of different ages experience self-objectification to the same extent. For females, self-objectification has been shown to decrease as women age and is therefore more prevalent in younger to middle aged females (Tiggemann & Lynch, 2001). Given this, it was hypothesized that older males would have the lowest levels of self-objectification. Interestingly, a significant age main effect for self-objectification did arise which confirmed this hypothesis.

This finding suggests that older adult males define themselves in terms of competency based attributes and focus on functionality of the body, rather than emphasizing appearance based attributes. Parallel to propositions made for females by Fredrickson and Roberts (1997), males may also abandon the observer's perspective of appearance on their own body as they get older. College males are fairly rigid in their drive to obtain the toned yet muscular ideal (Labre, 2005) and therefore experience high levels of self-objectification when shown images of the ideal figure (Morry & Staska, 2001). In contrast, older males are more accepting of different body types and are less concerned about their image (Nowell & Ricciardelli, 2008). In doing so, they avoid several of the potential harmful consequences that arise as the body begins to look less and less like the ideal through the natural aging process (Fredrickson & Roberts, 1997).

It is important to understand that research examining self-objectification in males is relatively new and the results of various studies should be replicated. In order to better understand magazine image induced self-objectification in males, more research is needed to specifically identify the factors that trigger self-objectification. Future studies should examine the relationships between self-objectification and other variables, such as internalization or reasons for exercise, and how they influence one another in relation to magazine images of the ideal figure.

Reasons for Exercise

It was also interesting that there were no significant differences in reasons for exercise between the three conditions. As a result, the stated hypotheses

proposing that males in the image-only and magazine cover conditions would exercise more for appearance reasons were not supported. Although non-significant, there was a trend for male participants in all three conditions to have slightly higher health reasons for exercise compared to appearance ones. This finding is noteworthy considering that it contradicts previous literature. Studies have demonstrated that males exposed to magazine images of the muscular ideal and females exposed to magazine images of the thin ideal experience greater body dissatisfaction and were more likely to exercise for appearance based reasons (Hatoum & Belle, 2004; Strelan & Hargreaves, 2005). Males have also been found to feel more anxious about their own appearance and were more motivated to exercise for appearance based reasons following exposure to magazine images of thin females (Aubrey & Taylor, 2009). However, participants reporting higher health reasons for exercise in this study could be attributed to some participants explicitly endorsed exercising more for health reasons because it is socially desirable (Berry et al., 2011).

The lower levels of appearance reasons for exercise could be explained in terms of self-objectification. The literature has shown that self-objectification is positively related to appearance reasons for exercise in both males and females (Prichard & Tiggemann, 2005; Strelan & Hargreaves, 2005: Strelan et al., 2003). The present study coincides with previous literature by revealing a positive correlational relationship between self-objectification and appearance reasons for exercise. However, given there were no significant differences for self-objectification in the three conditions, it is understandable that there were no

significant findings for appearance reasons for exercise. In other words, males in this study did not engage in self-objectification when shown images of ideal male bodies and were therefore less likely to gravitate towards exercising for appearance based reasons. It is important to monitor why males exercise so they are not exacerbating the potentially negative influences of self-objectification which could lead to harmful behaviours (Strelan & Hargreaves, 2005).

Surprisingly, there were no reasons for exercise differences between age groups which refutes this study's hypothesis. However, two interesting non-significant trends resulted. Younger, middle aged, and older males all reported more health/fitness reasons for exercise compared to appearance reasons for exercise. This finding is similar to the findings of studies conducted by Labre (2005) and Pompper et al. (2007). Although these studies were conducted on two different age groups, one on college aged students and another on males over 30, both studies showed that males tend to exercise for more health/fitness and enjoyment/mood reasons (Labre, 2005; Pompper et al., 2007). However, both studies revealed that appearance reasons for exercise was still somewhat important to males (Labre, 2005; Pompper et al., 2007), which relates to the second interesting trend found within this study's data. Even though all three age groups did not state high appearance reasons for exercise, the oldest group of males reported the lowest level of appearance reasons for exercise, which is consistent with previous research. This may be a result of older males understanding that changing their outer appearance and exercising for appearance based reasons does not necessarily translate into feeling better about themselves

(Strelan & Hargreaves, 2005). Therefore, they would rather omit the additional pressure of trying to meet the media's standard of body ideals and exercise for health/fitness and enjoyment/mood reasons. Additionally, research has shown that older individuals report a stronger focus on the social affiliation and connectedness that comes with participating in sport and exercise (Allen, 2003l Hodge, Allen, & Smellie, 2008). It is therefore highly plausible to say that older adult males were not influenced by the magazine images shown and value other aspects of life, exercise, and sport.

However, caution needs to be taken when interpreting both the health and appearance reasons for exercise outcomes within this study. The results may be confounded by the majority of participants classified as active or participant's frame of mind prior to participating. Given that a large proportion of participant testing was conducted at recreation complexes, people entering the facility, irrespective of age, likely had a predetermined reason for engaging in exercise, such as social interaction, playing on a sports team or for pure enjoyment. Male participants also may have been thinking about exercise related constructs prior to participating (Gaston & Gammage, 2010). It is therefore possible that showing active males images of ideal bodies depicting aspects of fitness or sports may not have changed their responses. Berry and Howe (2004) found that inactive individuals experienced worse exercise attitudes when shown appearance related media stimuli. With that said, the active participants in this study may have experienced unchanged exercise attitudes when shown appearance related magazine images. Future research should incorporate measures of exercise

attitudes to confirm or refute this claim. Overall, it is important to promote positive body images to reduce body concerns which could lead to exercise avoidance (Grogan, 2010).

Exercise Intentions

Based on findings by Milne et al. (2008), it was hypothesized that males who viewed the image-only and magazine cover conditions would have greater intentions to increase their current exercise level. However, exercise intentions did not differ between conditions and therefore this hypothesis was not supported. Similar results were found by Gaston and Gammage (2010). After reading a health or appearance based post-partum exercise brochure, there were no differences in exercise intentions (Gaston & Gammage, 2010). In addition, females did not experience changes in their exercise motivation and intention after being shown either a control or appearance exercise video (Martin Ginis, Prapavessis, & Haase, 2008). From these findings, it is possible to claim that similar trends occurred in the present study. People are not necessarily influenced by observing attractive and fit bodies or find them as a source of inspiration to enhance exercise intentions (Martin Ginis et al., 2008). Therefore, male participants in this study may not have found the images of ideal fit males encouraging enough to change exercise intentions.

The absence of a significant finding may have also resulted from the location of data collection. Participants entering a recreation complex already have set intentions to exercise otherwise they would not be entering the facility. With intentions previously determined and the participant possibly having an

exercise frame of mind prior to participation, it is likely that a combination of factors resulted in the unchanged exercise intentions.

It is also noteworthy that exercise intentions did not differ by age group which also goes against the stated hypothesis. All three age groups reported similar levels of intentions to maintain, increase, and decrease their current exercise level. Although not significant, all three age groups reported the greatest intention to increase current exercise level. Given that intentions are strong predictors of behaviour (Maddux, 1995), intentions to increase current exercise level may result in increased exercise behaviour. This is a valuable and encouraging finding. It was also reassuring to find that all three age groups of male participants reported the lowest levels of intentions to decrease their current exercise level. As stated previously, intentions to decrease current exercise level would likely result in decreased exercise behaviour. Considering that 83% of Canadian males are currently inactive (Colley et al., 2011), it is increasingly important to ensure that people do not have or develop intentions to decrease exercise behaviour. This would result in an even larger percentage of Canadians becoming inactive and thus increase health care expenses. Additionally, it is important to study the intention-behaviour relationship because findings indicate that approximately half of those who have positive intentions to exercise fail to actually engage in exercise (Rhodes & Plotnikoff, 2006). Future research should conduct longitudinal studies to examine if exercise intentions and subsequent behaviour for males of different ages changes over an extended period of time.

Lastly, the exercise intention outcomes could have resulted from the lack of exercise intention questionnaire applicability to the scope of this study. The exercise intention questionnaire was chosen because of its ability to measure three different forms of exercise intentions, rather than just one as several other research studies have done. However, this questionnaire was created for the context of examining changes in exercise intentions across a period of time based on current exercise status. Milne and colleagues (2008) suggested that a person may intend to increase their exercise level until they reach a threshold. At this point, their intention to increase exercise behaviour would decrease and their intention to maintain exercise behaviour would increase (Milne et al., 2008). Given that this study measured participants' immediate thoughts about exercise intentions, it is impossible to decipher what stage of exercise status an individual was in and how that may have influenced exercise intentions.

Magazine Image Condition

Similar to female focused magazines, male health/fitness and sports magazines covers have an array of objectifying slogans targeting male body appearance (Aubrey, 2010). Nowell and Ricciardelli (2008) found that frequent negative appearance comments that males read or receive, such as "you need to hit the gym" or "your muscles don't look strong", resulted in higher body dissatisfaction and a greater drive for muscularity. Based on these findings, it was hypothesized that males in the magazine cover condition would have more pronounced negative outcomes compared to the image-only conditions due to viewing both text and male body images. It was interesting to find that this

hypothesis was not supported given that there were no significant differences between the two conditions. That is, both the image-only and magazine cover condition elicited similar results for all ten dependent variables. However, this has not been the only study to lack differences between the priming conditions. These results are similar to Gaston and Gammage (2010) who did not find differences between the health or appearance focused exercise priming brochures for postpartum women. Similarly, Berry and Howe (2004) found no differences between the health, appearance, and control exercise advertising conditions.

There are several possibilities as to why there were no differences between the image-only and magazine cover conditions. It is possible that the two health/fitness and sports magazine image conditions were too similar to one another. The image-only and magazine cover condition displayed identical images of male body figures, while the magazine cover condition contained the additional element of magazine cover catch-phrases and slogans. These similarities were made to ensure that any differences found between the two conditions were specifically due to adding the objectifying phrases into the prime of the magazine cover condition (Gaston & Gammage, 2010). However, it may have been that the condition variations were just not strong enough to elicit different responses from participants.

It is also speculated that the lack of differences between the conditions is attributed to the length of prime exposure. Priming research is often conducted in a lab-like setting with short, passive, and isolated doses of priming exposure (Harrison & Fredrickson, 2003; Tiggemann, 2003). However, media consumption

in a real world setting is active, constant, and ongoing (Harrison & Fredrickson, 2003; Tiggemann, 2003). In this study, participants received only 10 seconds of priming exposure per image. This may not have been long enough for males in the magazine cover condition to look at and process both the image and surrounding text. Therefore the magazine cover prime would have lacked the ability to effectively elicit different results to the image-only condition. In fact, the single bout of priming exposure may not have been long enough for males in all three conditions to take in the prime and influence their thoughts or feelings.

It would be interesting to replicate this study using eye-tracking devices. Eye trackers measure eye movements and are useful tools for examining the amount of attention a viewer places on certain aspects of an advertisement and the order in which visual information is processed (O'Malley, 2009). However, it remains unclear if the textual and pictorial aspects of an advertisement work together or against one another (Wedel & Pieters, 2008). Some studies suggest that text attracts attention more quickly and hold attention longer (Fox, Krugman, Fletcher, & Fischer, 1998; Krugman, Fox, Fletcher, & Rojas, 1994), while others suggest images influence attention more (Pieters & Wedel, 2004; Rayner, Miller, & Rotello, 2008). Interestingly, O'Malley and colleagues (2011) found that the advertisement condition displaying both text and a picture, compared to the image-only or text-only conditions, was the most effective at attracting a viewer's attention. However, they suggest that cluttered and complex advertisements or magazine covers cause an increase in the number of eye movements (O'Malley et al., 2011). It is possible that males in the magazine cover condition found the

image too cluttered and did not have enough time to view both the text and image before the 10 seconds of exposure elapsed and a new magazine cover was presented. If the image was too cluttered, participants may have also reverted to looking at the center of the image where the male body was, and therefore the image-only and magazine cover conditions would have essentially been looking at the same prime. Eye tracking techniques would be useful when replicating the present study to determine what exactly males are looking at in both the image-only and magazine over condition.

Lastly, age may have played a part in the absence of condition differences. According to the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986), the less relevant the message content is, the less it will be considered. As stated previously, body perceptions change and the effects of the media's body image portrayals have less of an influence as individuals get older (Fredrickson & Roberts, 1997). Therefore older males' attention towards the magazine images presented in both the image-only and magazine cover conditions may not have been interpreted as relevant or considered as useful information.

Overall, the results of this study may have been influenced by the wide range of magazine covers used in this study. It is possible that health/fitness and sports magazines are too different from one another and therefore the prime was not strong enough. If this study is to be replicated using all three magazine conditions, it is recommended to use one genre of magazine, one magazine title, or to split health/fitness and sports magazine images into two separate conditions. These changes could also permit a content analysis of the slogans and catch

phrases shown on magazine covers. As a result of the variety of magazine covers used for this study, a content analysis was not conducted. Future research should continue to explore the relationship of the textual frames and visual images on magazine covers.

Condition by Age Interactions

No significant condition by age interactions were found for any of the ten dependent variables. This indicates that the condition and age main effects did not have to be interpreted relative to one another (Tabachnick & Fidell, 2001). The absence of significant interactions could be a product of the relatively small and unequal sample sizes in the nine interaction groups which may have therefore lacked power (Rhodes & Courneya, 2001). Interactions may have been found if the primes were presented for longer periods of time. Nevertheless, it would have been interesting to analyze age differences relative to the three image conditions presented to participants. Replication of this study may permit such findings.

General Discussion

Despite of the lack of several significant outcomes found for this study, there were several strengths that should be noted. This study was a randomized experimental design, which is one of the strongest research designs available in respect to internal validity (Trochim & Donnelly, 2007). It allows the focus of the study to be on the priming conditions to examine which features have an effect on the dependent variables (Trochim & Donnelly, 2007). This experimental design also contained a control group which provided the study with a neutral group to compare the two experimental magazine image conditions to. By including a

control group it also improved the internal validity of the study design (Trochim & Donnelly, 2007). Lastly, this study was easy to execute and did not require lengthy participation from male participants.

This study also differs from previous research studies in several ways. First, this study solely focused on males and it examined the effects of magazine images on a broad range of ages as suggested by Blond (2008), Daniel and Bridges (2010), and Nowell and Ricciardelli (2008). Second, this study used ideal male body images rather than other body figures to which males have a more difficult time relating to, such as thin or hyper-muscular images (Arbour & Martin Ginis, 2006). Third, this study continued to add to the literature regarding male body image and its relation to the self-objectification theory which was primarily thought of a as a female phenomenon. Fourth, it examined the influence of both health/fitness and sports magazine images as they have both been related to body concerns within males (Harrison, 2000; Labre, 2005). Lastly, this study used current and up-to-date questionnaires revised for males, such as the SATAQ-3 revised by Karazsia and Crowther's (2008).

Limitations

It is also important to critically evaluate the flaws of a study and address its limitations. For the present study, there were several limitations that require acknowledgment and discussion with regards to future research.

Participants

The majority of participants were classified as active in this study. Therefore moderately active and inactive participants were inadequately

represented for examination. This is likely a consequence of collecting a large proportion of the data at recreation complexes where the individuals entering the facility are doing so to be active. This hindered the study's findings as it omitted potential valuable information. Future studies should recruit participants from a variety of locations, such as shopping malls or grocery stores. This will enhance the likelihood of recruiting moderately active and inactive participants. If there was a greater representation of moderately active or inactive participants, different results may have been found.

Measurement

There was no measure of participant magazine exposure or reading frequency. This study assumed equal magazine exposure and readership for all participants. As a result, it was impossible to control or account for an individual's choices about their preferred media source, type of content viewed, or length of exposure. By having a magazine exposure or reading frequency questionnaire, it could have distinguished participants as readers or non-readers of magazines, thus providing another interesting variable for analysis. It would have been valuable to examine the relationships between age and magazine reading or exposure, and how that differentially influences body perceptions and exercise related cognitions. Future research studies should be more specific in measuring both the type and frequency of magazines read.

Methodological

It is important to note that a female researcher was explaining the study and testing male participants. Even though the researcher gave the participants

enough distance while participating so they would not feel under a watchful eye, it still may have affected the participant's responses. It is possible that the participant felt uncomfortable with a female researcher nearby or answered the questions in a socially desirable way. It would be interesting to see if males respond differently when a male researcher is present. In addition, there was no way of controlling for external variables that could have influenced participant answers, such as daily stressors or previous beliefs about exercise and the media.

Study Design

Researchers suggest that chronic media exposure to the ideal fit and muscular male body may lead to chronic body image concerns, whereas acute priming exposure may only influence males temporarily (Aubrey & Taylor, 2009). The present study was not able to assess the long term effects of media image exposure. The stimulus was only presented to the participants for approximately 4 minutes at 10 seconds per image. This length of exposure is not nearly long enough to compare to the amount of media exposure an individual encounters in a day, week, month, or year. Therefore, the results cannot be generalized to the chronic effects of media exposure but rather relates to acute effects. Additionally, this study tested participants in a lab like artificial setting. As a result, this limits the generalizability of the results to real world contexts (Trochim & Donnelly, 2007). Future studies should employ longitudinal designs to aid in examining the influences of chronic media exposure and enhance the applicability of the findings to the real world. Lastly, it is recommended to use different statistical procedures in future studies, such as a regression or path

analysis, to examine variable relationships and possible mediating or moderating factors.

Conclusion

Unlike most previous research, this study examined the influence magazine images and the difference between viewing only ideal fit male bodies versus images and text combined. Dependent variables (internalization, self-objectification, reasons for exercise, and exercise intentions) were measured in three participant age categories (young, middle, and old) and three magazine image conditions (image-only, magazine cover, and control).

Only internalization-general was found significant by condition. Although not significant, it was interesting to discover condition trends in participant's reasons for exercise. All three conditions had a higher health reasons for exercise scores compared to appearance reasons for exercise. In relation to age, older males (>44) had lower levels of internalization-general, internalization-athlete, and self-objectification compared to the younger (<28) or middle aged (29-43) males. A likely cause for the lack of significant findings in this study is due to the confounding majority of active participants within the sample.

Notwithstanding the limitations of this study, it has contributed to the growing body of literature and has provided some important practical implications. With the increasing availability of male directed health/fitness and sports magazines, it is important to examine how male body perceptions and exercise related cognitions are influenced by images of media body standards. By encouraging males to critically think about body ideals, it may reduce the drive

for setting these ideals as a source for self-definition. This would aid in the ability of health promoters and therapists to teach males about confronting their body concerns and preventing new ones from developing. In addition, it would allow prevention and intervention programs to be created to address psychological body image distress and body dissatisfactions before they result in problems that require clinical assistance, such as excessively taking steroids or limiting food intake (Grammas & Schwartz, 2009; McCabe & Ricciardelli, 2004). In conclusion, it is evident that more research is needed to fully understand the powerful force of mass media and its effect on consumers.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 179-211. doi: 10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs, NJ: Prentice-Hall.

Alexander, S. M. (2003). Stylish Hard Bodies: Branded Masculinity in Men's Health Magazine. *Sociological Perspectives, 46*, 535-554. doi: 10.1525/sop.2003.46.4.535

Allen, J. B. (2003). Social motivation in youth sport. *Journal of Sport and Exercise Psychology, 25*, 551-567. Retrieved from http://groups.jyu.fi/sporticus/lahteet/LAHDE_5.pdf

Arbour, K. P., & Martin Ginis, K. A. (2006). Effects of exposure to muscular and hypermuscular media images on young men's muscularity dissatisfaction and body dissatisfaction. *Body Image, 3,* 153–161. doi:10.1016/j.bodyim.2006.03.004

Aubrey, J. S. (2010). Looking good versus feeling good: An investigation of media frames of health advice and their effects on women's body-related self-perceptions. *Sex Roles, 63,* 50-63. doi: 10.1007/s11199-010-9768-4

Aubrey, J. S., & Taylor, L. D. (2009). The role of lad magazines in priming men's chronic and temporary appearance-related schemata: An investigation of longitudinal and experimental findings. *Human Communication Research, 35*, 28-58. doi: 10.1111/j.1468-2958.2008.01337.x

Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W.H. Freeman.

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

Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research (pp. 1-40). In H. T. Reis, & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology.* New York: Cambridge University Press. Retrieved from http://www.haas.berkeley.edu/Courses/Spring2000/BA269D/BarghChartrand00.pdf

Berry, T. R., & Howe, B. L. (2004). Effects of health-based and appearance-based exercise advertising on exercise attitudes, social physique anxiety and self-presentation in an exercise setting. *Social Behavior and Personality, 32,* 1-12. Retrieved from http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=037d5f61-4b6f-4774-8414-9730190e2722%40sessionmgr115&vid=2&hid=106

Berry, T. R., & Howe, B. L. (2005). The effects of exercise advertising on self-efficacy and decisional balance. *American Journal of Health Behavior, 29,* 117-126. Retrieved from http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/

pdfviewer?sid=92f5cb6e-c5ca-4b4a-a9fa-52f4d3001e0e%40sessionmgr115&vid=2&hid=106

Berry, T. R., Jones, K. E., McLeod, N. C., & Spence, J. C. (2011). The relationship between implicit and explicit believability of exercise-related messages and intentions. *Health Psychology, 30,* 746-752. doi: 10.1037/a0025082

Berry, T. R., McLeod, N. C., Pankratow, M., & Walker, J. (in press). Effects of Biggest Loser exercise depictions on exercise-related attitudes. *American Journal of Health Behavior.*

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

Bissell, K. L. (2004). Sports model/sports mind: the relationship between entertainment and sports media exposure, sports participation, and body image distortion in division 1female athletes. *Mass Communication and Society, 7*, 453-473. doi: 10.1207/s15327825mcs0704_5

Blond, A. (2008). Impacts of exposure to images of ideal bodies on male body dissatisfaction: A review. *Body Image, 5,* 244-250. doi*:* 10.1016/j.bodyim.2008.02.003

Boni, F. (2002). Framing media masculinities: Men's lifestyle magazines and the biopolitics of the male body. *European Journal of Communication, 17,* 165-478. doi: 10.1177/0267323102017004040l

Cafri, G., Thompson, J. K., Ricciardelli, L., McCabe, M., Smolak, l., & Yesalis, C. (2005). Pursuit of the muscular ideal: Physical and psychological consequences and putative risk factors. *Clinical Psychology Review, 25,* 215-239. doi:10.1016/j.cpr.2004.09.003

Cahill, S., & Mussap, A. J. (2007). Emotional reactions following exposure to idealized bodies predict unhealthy body change attitudes and behaviors in women and men. *Journal of Psychosomatic Research, 62,* 631-639. doi: 10.1016/j.jpsychores.2006.11.001

Cline, R. J., & Haynes, K. M. (2001). Consumer health information seeking on the Internet: The state of the art. *Health Education Research, 16,* 671–692. doi: 10.1093/her/16.6.671

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155-159. doi: 10.1037/0033-2909.112.1.155

The Canadian Society for Exercise Physiology [CSEP]. (2011). *The new Canadian physical activity guidelines.* Retrieved from http://www.csep.ca/english/view.asp?x=804

Coast To Coast [CTC]. (2010). *2010 Canadian Newsstand Boxscores*. Retrieved from http://www.ctcmagazines.com/boxscore/BoxScore2010/2010%20Boxscore.pdf

Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L., Clarke, J., & Tremblay, M. S. (2011). Physical activity of Canadian adults: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Statistics Canada:*

Health Reports, 22. Retrieved from: http://www.statcan.gc.ca/pub/82-003-x/2011001/article/11396-eng.pdf

Daniel, S., & Bridges, S. K. (2010). The drive for muscularity in men: Media influences and objectification theory. *Body Image, 7,* 32-38. doi:10.1016/j.bodyim.2009.08.003

Daniels, E. A. (2009). Sex objects, athletes, and sexy athletes: How media representations of women athletes can impact adolescent girls and women. *Journal of Adolescent Research, 24,* 399–422. doi: 10.1177/0743558409336748

Diedrichs, P. C., & Lee, C. (2011). Waif goodbye! Average-size female models promote positive body image and appeal to consumers. *Psychology & Health, 26,* 1273-1291. doi: 10.1080/08870446.2010.515308

Dutta-Bergman, M. J. (2004). The readership of health magazines: The role of health orientation. *Health Marketing Quarterly, 22,* 27-49. doi: 10.1300/J026v22n02_03

Dworkin, S. L., & Wachs, F. L. (2009). *Body Panic: Gender, Health, and the Selling of Fitness*. New York: New York University Press.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140. doi: 10.1177/001872675400700202

Fox, R. J., Krugman, D. M., Fletcher, J. E., & Fischer, P. M. (1998). Adolescents' attention to beer and cigarette print ads and associated product warnings. *Journal of Advertising, 27,* 57-68. Retrieved from

http://www.jstor.org.login.ezproxy.library.ualberta.ca/openurl?volume=27&date=1998&spage=57&issn=00913367&issue=3&

Fredrickson, B., & Roberts, S. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*, 173-206. doi: 10.1111/j.1471-6402.1997.tb00108.x

Gaston, A., & Gammage, K. L. (2010). Health versus appearance messages, self-monitoring and pregnant women's intentions to exercise postpartum. *Journal of Reproductive and Infant Psychology, 28*, 345-358. doi: 10.1080/02646830903487367

Godin, G. (2011). The Godin-Shephard Leisure-Time Physical Activity Questionnaire. *Health and Fitness Journal of Canada, 4,* 18-22. Retrieved from: http://www.healthandfitnessjournalofcanada.com/index.php/html/article/view/82/49

Godin, G., & Shephard, R. J. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Science, 10,* 141-146. Retrieved from: http://www.dapa-toolkit.mrc.ac.uk/documents/en/God/Godin_Leisure-Time_Exercise_Q.pdf

Grabe, S., & Jackson, B. (2009). Self-objectification and depressive symptoms: Does their association vary among Asian American and White American men and women? *Body Image: An International Journal, 6,* 141- 144. doi: 10.1016/j.bodyim.2009.02.001

Graham, S., Prapavessis, H., & Cameron, L. (2006). Colon cancer information as a source of exercise motivation. *Psychology & Health, 21*, 739-755. doi: 10.1080/14768320600603554

Grammas, D. L., & Schwartz, J. P. (2009). Internalization of messages from society and perfectionism as predictors of male body image. *Body Image, 6*, 31-36. doi: 10.1016/j.bodyim.2008.10.002

Gray, J. J. & Ginsberg, R. L. (2007). Muscle dissatisfaction: An overview of psychological and cultural research and theory. In J. K. Thompson, & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (pp. 15-39). Washington, DC: American Psychological Association.

Grogan, S. (2010). Promoting Positive Body Image in Males and Females: Contemporary Issues and Future Directions. *Sex Roles, 63*, 757-765. doi: 10.1007/s11199-010-9894-z

Harper, B. & Tiggemann, M. (2008). The effect of thin ideal media images on women's self-objectification, mood, and body image. *Sex Roles, 58*, 649-657. doi: 10.1007/s11199-007-9379-x

Harrison, K. (2000). The body electric: thin-ideal media and eating disorders in adolescents. *Journal of Communication, 50*, 119–143. doi: 10.1111/j.1460-2466.2000.tb02856.x

Harrison, K., & Fredrickson, B. L. (2003). Women's sports media, self-objectification, and mental health in black and white adolescent females.

Journal of Communication, 53, 216-232. doi: 10.1111/j.1460-2466.2003.tb02587.x

Hatoum, I. J., & Belle, D. (2004). Mags and abs: Media consumption and bodily concerns in men. *Sex Roles, 51,* 397–407. doi: 10.1023/B:SERS.0000049229.93256.48

Health Canada. (2011). *Healthy living: Physical activity.* Retrieved from http://www.hc-sc.gc.ca/hl-vs/physactiv/index-eng.php

Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ). *International Journal of Eating Disorders, 17,* 81-89. doi: 10.1002/eat.10257

Hebl, M. R., King, E. B., & Lin, J. (2004). The swimsuit becomes us all: Ethnicity, gender, and vulnerability to self-objectification. Personality and Social Psychology Bulletin, 30, 1322–1331. doi: 10.1177/0146167204264052

Hobza, C. L., Walker, K. E., Yakushko, O., & Peugh, J. L. (2007). What about men? Social comparison and the effects of media images on body and self-esteem. *Psychology of Men and Masculinity, 8,* 161-172. doi: 10.1037/1524-9220.8.3.161

Hodge, K., Allen, J. B., & Smellie, L. (2008). Motivation in masters sports: Achievement and social goals. *Psychology of Sport and Exercise, 9,* 157-176. doi: 10.1016/j.psychsport.2007.03.002

Homan, K. (2010). Athletic-ideal and thin-ideal internalization as prospective predictors of body dissatisfaction, dieting, and compulsive exercise. *Body Image, 7,* 240–245. doi: 10.1016/j.bodyim.2010.02.004

Homan, K., McHugh, E., Wells, D., Watson, C., & King, C. (2012). The effect of viewing ultra-fit images on college women's body dissatisfaction. *Body Image, 9,* 50-56. doi: 10.1016/j.bodyim.2011.07.006

Huang, Y., & Hutchinson, J. W. (2008). Counting every thought: Implicit measures of cognitive responses to advertising. *Journal of Consumer Research, 35,* 98–118. doi:10.1086/527340

Jo, E., & Berkowitz, L. (1994). A priming effect analysis of media influence: An update. In J. Bryant & D. Zillmann (Eds.), *Media effects* (pp. 43-60). Hillsdale, NJ: Lawrence Erlbaum Associates.

Karazsia, B. T., & Crowther, J. H. (2008). Psychological and behavioral correlates of the SATAQ-3 with males. *Body Image: An International Journal of Research, 5,* 109-115. doi:10.1016/j.bodyim.2007.08.004

Karazsia, B. T., & Crowther, J. H. (2009). Social body comparison and internalization: Mediators of social influences on men's muscularity-oriented body dissatisfaction. *Body Image: An International Journal of Research, 6,* 106–112. doi: 10.1016/j.bodyim.2008.12.003

Kolt, G. S., Driver, R. P., & Giles, L. C. (2004). Why older Australians participate in exercise and sport. *Journal of Aging and Physical Activity, 12,* 185-198. Retrieved from:

http://journals.humankinetics.com.login.ezproxy.library.ualberta.ca/AcuCustom/SiteName/Documents/DocumentItem/2999.pdf

Krayer, A., Ingledew, D. K., & Iphofen, R. (2008). Social comparison and body image in adolescence: A grounded theory approach. *Health Education Research, 5,* 892–903.

Krugman, D. M., Fox, R. J., Fletcher, J. E., & Rojas, T. H. (1994). Do adolescents attend to warnings in cigarette advertising? An eye tracking approach. *Journal of Advertising Research, 34,* 39–52. Retrieved from http://www.southerncenter.uga.edu/Do%20adolescents%20attend%20to%20warnings%20in%20cigarette%20advertising.pdf

Labre, M. P. (2005). The male body ideal: Perspectives of readers and non-readers of fitness magazines. *Journal of Men's Health and Gender, 2,* 223-229. doi: 10.1016/j.jmhg.2005.03.001

Law, C., & Labre, M. P. (2002). Cultural standards of attractiveness: A thirty year look at changes in male images in magazines. *Journalism & Mass Communication Quarterly, 79,* 697-711. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=0aab312a-7be5-4a43-8ace-a2c1e2785c35%40sessionmgr112&vid=2&hid=106

Leit, R. A, Gray, J. J., & Pope, H. G. (2002). The media's representation of the ideal male body: A cause for muscle dysmorphia? *International Journal of Eating Disorders, 31,* 334-338. doi: 10.1002/eat.10019

Lewis, D. C., Medvedev, K., & Seponski, D. M. (2011). Awakening to the desires of older women: Deconstructing ageism within fashion magazines. *Journal of Aging Studies, 25,* 101-109. doi:10.1016/j.jaging.2010.08.016

Lorenzen, L. A., Grieve, F. G., & Thomas, A. (2004). Exposure to muscular male models decreases men's body satisfaction. *Sex Roles, 51,* 743-748. doi: 10.1007/s11199-004-0723-0

Maddux, J. E. (1995). *Self-efficacy, adaptation, and adjustment: theory, research, and application.* New York: Plenum Press.

Maibach, E. (2007). The influence of the media environment on physical activity: looking for the big picture. *American Journal of Health Promotion, 21,* 353-362. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/detail?sid=d9326cbf-f994-4b07-9b51-754ddf9d1ae4%40sessionmgr115&vid=1&hid=106&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#db=s3h&AN=24127072

Martin Ginis, K. A., Prapavessis, H., & Haase, A. M. (2008). The effects of physique-salient and physique non-salient exercise videos on women's body image, self-presentational concerns, and exercise motivation. *Body Image, 5,* 164-172. doi: 10.1016/j.bodyim.2007.11.005

Mask, L., & Blanchard, C.M. (2011). The effects of "thin ideal" media on women's body image concerns and eating-related intentions: The beneficial role of an autonomous regulation of eating behaviors. *Body Image, 8,* 357-365. doi: 10.1016/j.bodyim.2011.06.00

McAuley, E., Elavsky, S., Jerome, G. J., Konopack, J. F., & Marquez, D. X. (2005). Physical activity-related well-being in older adults: Social cognitive influences. *Psychology and Aging, 20,* 295–302. doi: 10.1037/0882-7974.20.2.295

McCabe, M. P., & Ricciardelli, L. A. (2004). Body image dissatisfaction among boys across the lifespan: A review of past literature. *Journal of Psychosomatic Research, 56*, 675–685. doi:10.1016/S0022-3999(03)00129-6

McGowan, E., & Prapavessis, H. (2010). Colon cancer information as a source of exercise motivation for first- and second-degree relatives of colon cancer patients. *Psychology Health & Medicine, 15, 729-741. doi: 10.1080/13548506.2010.50771*.

Milne, M. I., Rodgers, W. M., Hall, C. R., & Wilson, P. M. (2008). Starting up or starting over: The role of intentions to increase and maintain the behavior of exercise initiates. *Journal of Sport & Exercise Psychology, 30*, 285-301. Retrieved from: http://journals.humankinetics.com.login.ezproxy.library.ualberta.ca/AcuCustom/SiteName/Documents/DocumentItem/15903.pdf

Mishkind, M. E., Rodin, J., Silverstein, L. R., & Streigel-Moore, R. H. (1986). The embodiment of masculinity: Cultural, psychological, and behavioral dimensions. *American Behavioral Scientist, 29,* 545-562. doi: 10.1177/000276486029005004

Morry, M. M., & Staska, S. L. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science, 33,* 269–279. doi: 10.1037/h0087148

Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly*, *22,* 623–636. doi: 10.1111/j.1471-6402.1998.tb00181.x

Nowell, C., & Ricciardelli, L.A. (2008). Appearance-based comments, body dissatisfaction and drive for muscularity in males. *Body Image, 5,* 337-345. doi: 10.1016/j.bodyim.2008.06.002

Oehlhof, M. E., Musher-Eizenman, D. R., Neufeld, J. M., & Hauser, J. C. (2009). Self-objectification and ideal body shape for men and women. *Body Image, 6,* 308-310. doi: 10.1016/j.bodyim.2009.05.002

Ogden, J., & Mundray, K. (1996). The effect of the media on body satisfaction: The role of gender and size. *European Eating Disorders Review, 4*, 171–182. doi: 10.1002/(SICI)1099-0968

O'Malley, D. A. (2009). *Setting the sites high: Measuring viewer attention to and recall of framed osteoporosis prevention print advertisements* (Master's thesis). Retrieved from Proquest Dissertations and Theses database. (UMI No. MR65245)

O'Malley, D. A., Latimer, A. E., & Berenbaum, E. (2011). Using eye tracking technology to determine the most effective viewing format and content for osteoporosis prevention print advertisements. *Journal of Applied*

Biobehavioral Research, 16, 167-186. doi: 10.1111/j.1751-9861.2011.00072.x

Pelletier, L. G., Dion, S., & Levesque, C. S. (2004). Can self-determination help protect women against sociocultural influences about body image and reduce their risk of experiencing bulimic symptoms? *Journal of Social and Clinical Psychology, 23,* 61-88. doi: 10.1521/jscp.23.1.61.26990

Perugini, M., & Prestwich, A. (2007). The gatekeeper: individual differences are key in the chain from perception to behaviour. *European Journal of Social Psychology, 21,* 303-317. doi: 10.1002/per.633

Petty, R. E., & Cacioppo, J. T. (1986). *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York: Springer-Verlag.

Pieters, R. & Wedel, M. (2004). Attention capture and transfer in advertising: brand, pictorial and text-size effects. *Journal of Marketing, 68,* 36-50. doi*:* 10.2307/30161988

Pompper, D., Soto, J., & Piel, L. (2007). Male body image and magazine standards: Considering dimensions of age and ethnicity. *Journalism & Mass Communication Quarterly, 84,* 525-545. doi: 10.1177/107769900708400308

Potente, S., McIver, J., Anderson, C., & Coppa, K. (2011) "It's a Beautiful Day for Cancer": An Innovative Communication Strategy to Engage Youth in Skin Cancer Prevention. *Social Marketing Quarterly, 17,* 86-105. doi:10.1080/15245004.2011.595604

Pope, H. G., Phillips, K. A., & Olivardia, R. (2000). *The Adonis complex: The secret crisis of male body obsession.* Sydney: The Free Press.

Prichard, I. J., & Tiggemann, M., (2005). Objectification in fitness centers: self-objectification, body dissatisfaction, and disordered eating in aerobic instructors and aerobic participants. *Sex Roles, 53,* 19-28. doi: 10.1007/s11199-005-4270-0

Rayner, K., Miller B., & Rotello, C. (2008). Eye movements when looking at print advertisements: The goal of the viewer matters. *Applied Cognitive Psychology, 22,* 697-707. doi: 10.1002/acp.1389

Rhodes, R. E., & Courneya, K. S. (2001). Effects of a health-based versus appearance-based persuasive message on attitudes towards exercise: Testing the moderating role of self-monitoring. *Journal of Social Behavior and Personality, 15,* 321-330. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=0a4ec124-e474-4a11-a05a-a11cd833f0e7%40sessionmgr112&vid=2&hid=106

Rhodes, R. E., Blanchard, C. M., & Matheson, D. H. (2006). A multi-component model of the theory of planned behavior. *British Journal of Health Psychology, 11,* 119-137. doi: 10.1348/135910705X52633

Rhodes, R. E., & Plotnikoff, R.C. (2006). Understanding action control: predicting physical activity intention–behavior profiles across six months in a Canadian sample. *Health Psychology, 25,* 292–299. doi: 10.1037/0278-6133.25.3.292

Ricciardelli, L. A., & McCabe, M. P. (2004). A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychological Bulletin, 130,* 179–205. doi:10.1037/0033-2909.130.2.179.

Roberts, T. A., & Gettman, J. Y. (2004). Mere exposure: Gender differences in the negative effects of priming a state of self-objectification. *Sex Roles, 51,* 17-27. doi: 10.1023/B:SERS.0000032306.20462.22

Rodgers, W., & Sullivan, M. (2001). Task, coping and scheduling self-efficacy in relation to frequency of physical activity. *Journal of Applied Social Psychology, 31,* 741-753. doi: 10.1111/j.1559-1816.2001.tb01411.x

Rodgers, W. M., Hall, C. R., Blanchard, C. M., McAuley, E., & Munroe, K. J. (2002). Task and scheduling self-efficacy as predictors of exercise behavior. *Psychological Health, 17,* 405-416. doi: 10.1080/0887044022000004902

Rodgers. W. M., Wilson, P. M., Hall, C. R., Fraser, S. N., & Murray, T. C. (2008). Evidence for a multidimensional self-efficacy for exercise scale. *Research Quarterly for Exercise & Sport*, *79*, 222-234. Retrieved from: http://www.ehpl.uwo.ca/Publication%20PDFs/MSES%20paper%20RQES%202008.pdf

Silberstein, L. R., Striegel-Moore, R. H., Timko, C., & Rodin, J. (1988). Behavioral and psychological implications of body dissatisfaction: Do men and women differ? *Sex Roles, 19,* 219-232. doi:10.1007/BF00290156

Slevec, J. H. & Tiggemann, M. (2011). Predictors of body dissatisfaction and disordered eating in middle-aged women. *Clinical Psychology Review*, 31, 515-524. doi: 10.1016/j.cpr.2010.12.002

Strelan, P., & Hargreaves, D. (2005). Reasons for exercise and body esteem: Men's response to self-objectification. *Sex Roles, 53,* 495–503. doi:10.1007/s11199-005-7137-5

Strelan, P., Mehaffey, S. J., & Tiggemann, M. (2003). Self-objectification and esteem in young women: The mediating role of exercise. *Sex Roles, 48,* 89–95. doi: 10.1023/A:1022300930307

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed). Needham Heights, MA: Allyn & Bacon.

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance.* Washington, DC: American Psychological Association.

Thompson, J. K., Schaefer, L. M., & Menzel, J. E. (2012). Internalization of thin-ideal and muscular-ideal. *Encyclopedia of Body Image and Human Appearance, 2,* 499-504. doi: 10.1016/B978-0-12-384925-0.00079-1

Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes toward appearance questionnaire (SATAQ-3): Development and validation. *International Journal of Eating Disorders, 35,* 293–304. doi: 10.1002/eat.10257

Tiggemann, M. (2002). Media influences on body image development. In T. F. Cash, & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 91–98). New York: Guilford Press.

Tiggemann, M. (2003). Media exposure, body dissatisfaction and disordered eating: Television and Magazines are not the same! *European Eating Disorders Review, 11,* 418-430. doi: 10.1002/erv.502

Tiggemann, M. & Kuring, J. K. (2004). The role of body objectification in disordered eating and depressed mood. *British Journal of Clinical Psychology,* 43, 299-311. Retrieved from http://www.unm.edu/~marni1/tiggemankuring2004.pdf

Tiggemann, M., & Lynch, J. E. (2001). Body image across the life span in adult women: The role of self-objectification. *Developmental Psychology, 37,* 243-253. doi: 10.1037/0012-1649.37.2.243

Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders, 20,* 199-203. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=52a3ada8-156b-4e09-8035-75a990543bce%40sessionmgr115&vid=2&hid=106

Tiggemann, M., & Williamson, S. (2000). The effect of exercise on body satisfaction and self-esteem as a function of gender and age. *Sex Roles, 43,* 119–127. doi: 10.1023/A:1007095830095

Trochim, W., & Donnelly, J. P. (2007). *The Research Methods Knowledge Base* (3rd ed). Cincinnati, OH, Atomic Dog Publishing.

Vartanian, L. R. (2009). When the body defines the self: Self-concept clarity, internalization, and body image. *Journal of Social and Clinical Psychology, 28*, 94-126. doi: 10.1521/jscp.2009.28.1.94

Wedel, M., & Pieters, R. (2008). Introduction to visual marketing. In M. Wedel & R. Pieters (Eds.), *Visual marketing: From attention to action* (pp. 1–8). New York: Taylor & Francis Group.

Wilksch, S. M., Tiggemann, M., & Wade, T. D., 2006. Impact of interactive school-based media literacy lessons for reducing internalization of media ideals in young adolescent girls and boys. *International Journal of Eating Disorders*, 39, 385-393. doi: 10.1002/eat.20237

Wrand, C. S., & Wright, B. A. (2000). Continuity and change in the evaluation of ideal and acceptable body sizes across a wide age span. *International Journal of Eating Disorders, 28*, 90–100. doi: 10.1002/(SICI)1098-108X(200007)28:1<90::AID-EAT11>3.0.CO;2-P

Appendix A: Image Validation Questionnaire

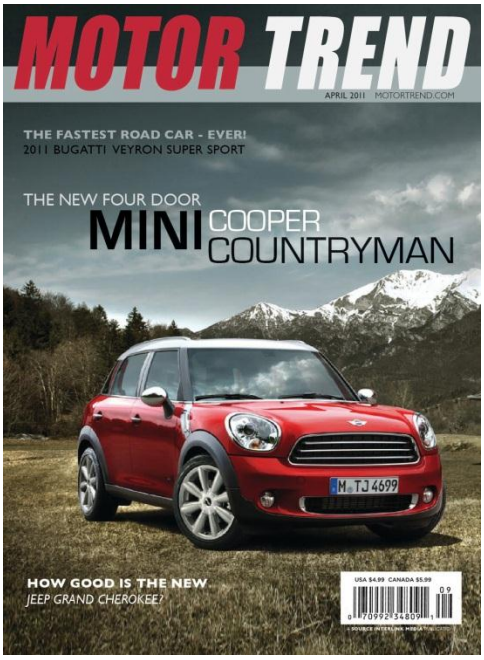
"*In your opinion, how well do the following images represent your vision of an ideal male?*"

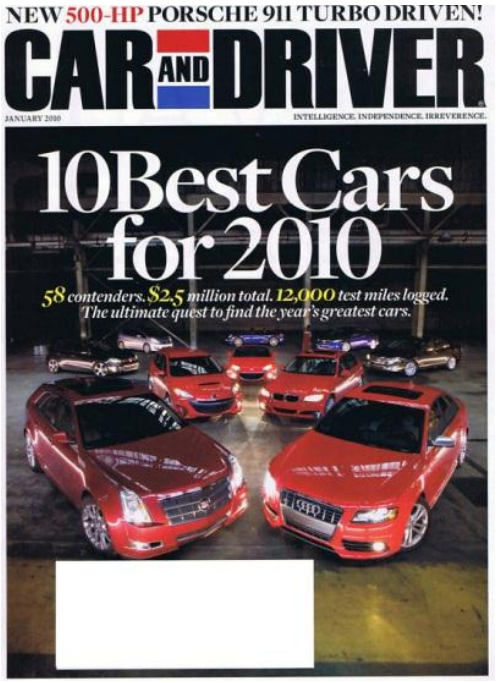
1 (*not at all representative*) and 5 (*extremely representative*)

Please place your rating in the spot provided.

#	Rating	#	Rating	#	Rating
1		**21**		**41**	
2		**22**		**42**	
3		**23**		**43**	
4		**24**		**44**	
5		**25**		**45**	
6		**26**		**46**	
7		**27**		**47**	
8		**28**		**48**	
9		**29**		**49**	
10		**30**		**50**	
11		**31**		**51**	
12		**32**		**52**	
13		**33**		**53**	
14		**34**		**54**	
15		**35**		**55**	
16		**36**		**56**	
17		**37**		**57**	
18		**38**		**58**	
19		**39**		**59**	
20		**40**		**60**	

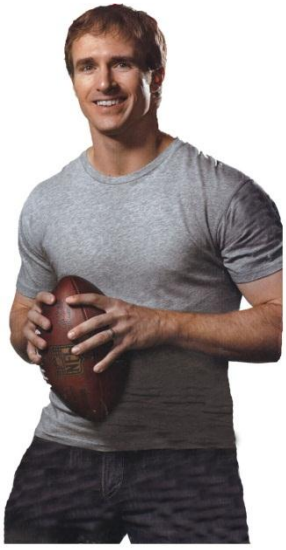
Appendix B: Control Condition Images Examples

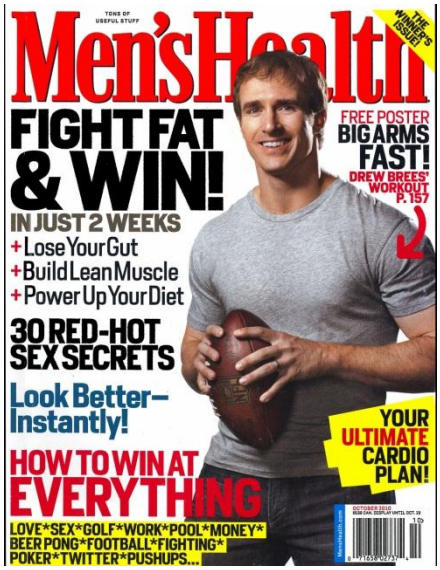




Appendix C: Ideal Male Body Condition Images Examples

Image-Only Condition *vs.* *Magazine Cover Condition*





Appendix D: Sociocultural Attitudes Towards Appearance Questionnaire-3

[1]. Please circle the number that best reflects your agreement with the statement.

Completely Disagree		*Neither Agree nor Disagree*		*Completely Agree*
1	**2**	**3**	**4**	**5**

1.	TV programs are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
2.	I’ve felt pressure from TV or magazines to lose weight.	1	2	3	4	5
3.	I would like my body to look like the people who are on TV	1	2	3	4	5
4.	I compare my body to the bodies of TV and movie stars	1	2	3	4	5
5.	TV commercials are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
6.	I’ve felt pressure from TV or magazines to look muscular	1	2	3	4	5
7.	I would like my body to look like the models who appear in magazines	1	2	3	4	5
8.	I compare my appearance to the appearance of TV and movie stars	1	2	3	4	5
9.	Music videos on TV are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
10.	I’ve felt pressure from TV and magazines to be muscular	1	2	3	4	5
11.	I would like my body to look like the people who are in the movies	1	2	3	4	5
12.	I compare my body to the bodies of people who appear in magazines	1	2	3	4	5
13.	Magazine articles are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
14.	I’ve felt pressure from TV or magazines to have a perfect body	1	2	3	4	5

15.	I wish I looked like the models in music videos	1	2	3	4	5
16.	I compare my appearance to the appearance of people in magazines	1	2	3	4	5
17.	Magazine advertisements are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
18.	I’ve felt pressure from TV or magazines to diet	1	2	3	4	5
19.	I wish I looked as athletic as people in magazines	1	2	3	4	5
20.	I compare my body to that of people in ‘‘good shape’’	1	2	3	4	5
21.	Pictures in magazines are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
22.	I’ve felt pressure from TV or magazines to exercise	1	2	3	4	5
23.	I wish I looked as athletic as sports stars	1	2	3	4	5
24.	I compare my body to that of people who are athletic	1	2	3	4	5
25.	Movies are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
26.	I’ve felt pressure from TV or magazines to change my appearance	1	2	3	4	5
27.	I try to look like the people on TV	1	2	3	4	5
28.	Movie stars are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
29.	Famous people are an important source of information about fashion and ‘‘being attractive’’	1	2	3	4	5
30.	I try to look like sports athletes	1	2	3	4	5

Appendix E: Godin Leisure Time Exercise Questionnaire

[2]. During a typical **7-Day period** (a week), how many **times** on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time? [Write on each line the appropriate number]

Times Per Week

A. **STRENUOUS PHYSICAL ACTIVITY**
(heart beats rapidly, sweating)

(e.g., running, jogging, hockey, soccer, squash, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling, vigorous aerobic dance classes, heavy weight training) _____

B. **MODERATE PHYSICAL ACTIVITY**
(not exhausting, light perspiration)

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

C. **MILD PHYSICAL ACITIVITY**
(minimal effort, no perspiration)

(e.g., easy walking, yoga, archery, fishing, bowling, lawn bowling, shuffleboard, horseshoes, golf, snowmobiling) _____

During a typical **7-Day period** (a week), in your leisure time, **how often** do you engage in any regular activity **long enough to work up a sweat** (heart beats rapidly)? [Circle the most appropriate answer]

1. Often 2. Sometimes 3. Never/rarely

Appendix F: Self-Objectification Questionnaire

[3]. Below are 10 different body attributes. Please rank order these body attributes from <u>greatest</u> impact to the <u>least</u> impact on your physical self-perception.

<u>Please first read over all of the attributes before rank ordering them</u>.

1 = **least** impact on physical self-perception (least important)

10 = **greatest** impact on physical self-perception (most important)

ATTRIBUTE	**RANK**
A. physical coordination	
B. health	
C. weight	
D. muscular strength	
E. sex appeal	
F. physical attractiveness	
G. energy level (e.g., stamina)	
H. firm/sculpted muscles (e.g., tone)	
I. physical fitness level	
J. measurements (e.g., chest, waist, hips)	

Appendix G: Exercise Intentions

[4]. In the forthcoming month…

Strongly Disagree **1**	**2**	**3**	*Neutral* **4**	**5**	**6**	*Strongly Agree* **7**						
I intend to <u>maintain</u> my current activity level							1	2	3	4	5	6	7
I intend to <u>increase</u> my current activity level							1	2	3	4	5	6	7
I intend to <u>decrease</u> my current activity level							1	2	3	4	5	6	7

Appendix H: Reasons for Exercise Inventory

[5]. I engage in exercise…

Not at all Important **1 2** **3** *Moderately Important* **4 5** **6** *Extremely Important* **7**

1.	To be slim.	1	2	3	4	5	6	7
2.	To lose weight.	1	2	3	4	5	6	7
3.	To maintain my current weight.	1	2	3	4	5	6	7
4.	To improve my muscle tone.	1	2	3	4	5	6	7
5.	To improve my strength.	1	2	3	4	5	6	7
6.	To improve my endurance, stamina.	1	2	3	4	5	6	7
7.	To improve my flexibility, coordination.	1	2	3	4	5	6	7
8.	To cope with sadness, depression.	1	2	3	4	5	6	7
9.	To cope with stress, anxiety.	1	2	3	4	5	6	7
10.	To increase my energy levels.	1	2	3	4	5	6	7
11.	To improve my mood.	1	2	3	4	5	6	7
12.	To improve my cardiovascular fitness.	1	2	3	4	5	6	7
13.	To improve my overall health.	1	2	3	4	5	6	7
14.	To increase my resistance to illness and disease.	1	2	3	4	5	6	7
15.	To maintain my physical well-being.	1	2	3	4	5	6	7
16.	To improve my appearance.	1	2	3	4	5	6	7
17.	To be attractive to members of the opposite sex.	1	2	3	4	5	6	7
18.	To be sexually desirable.	1	2	3	4	5	6	7
19.	To meet new people.	1	2	3	4	5	6	7
20.	To socialize with friends.	1	2	3	4	5	6	7
21.	To have fun.	1	2	3	4	5	6	7
22.	To redistribute my weight.	1	2	3	4	5	6	7
23.	To improve my overall body shape.	1	2	3	4	5	6	7
24.	To alter a specific area of my body.	1	2	3	4	5	6	7

Appendix I: Multidimensional Exercise Self-Efficacy Questionnaire

[6]. How confident are you that you can…

	Not at all Confident **1**									*Completely Confident* **10**
1.	…complete exercise using proper technique	1	2	3	4	5	6	7	8	9	10
2.	…follow directions to complete exercise	1	2	3	4	5	6	7	8	9	10
3.	…perform all of the required movements	1	2	3	4	5	6	7	8	9	10
4.	…exercise when you feel discomfort	1	2	3	4	5	6	7	8	9	10
5.	…exercise when you lack energy	1	2	3	4	5	6	7	8	9	10
6.	…exercise when you don't feel well	1	2	3	4	5	6	7	8	9	10
7.	…include exercise in your daily routine	1	2	3	4	5	6	7	8	9	10
8.	…consistently exercise three times per week	1	2	3	4	5	6	7	8	9	10
9.	…arrange schedule to include regular exercise	1	2	3	4	5	6	7	8	9	10

Appendix J: Demographic Information

Age: _____

Ethnicity: (Please check one)
- O Asian
- O African America
- O Caucasian/White
- O Hispanic
- O Indigenous/Aboriginal
- O I would rather not say
- O Other: _____

Appendix K: Human Ethics Research Board 3 Approval

UNIVERSITY OF ALBERTA

RESEARCH ETHICS BOARD

308 Campus Tower
Edmonton, AB, Canada T6G 1K8
Tel: 780.492.0459
Fax: 780.492.9429
www.reo.ualberta.ca

Notification of Approval

Date:	November 18, 2011
Study ID:	Pro00025306
Principal Investigator:	Jessica Walker
Study Supervisor:	Tanya Berry
Study Title:	The Effects of Viewing Magazine Images of the Ideal Male Figure on Exercise and Body Image Perception in Men
Approval Expiry Date:	November 16, 2012
Approved Consent Form:	Approval Date: 11/18/2011 — Approved Document: Informed Consent / Information Document
Sponsor/Funding Agency:	University of Alberta

Thank you for submitting the above study to the Research Ethics Board 3. Your application has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Research Ethics Board does not encompass authorization to access the staff, students, facilities or resources of local institutions for the purposes of the research.

Sincerely,

Dr. Wendy Rodgers, PhD
Chair, Research Ethics Board 3

Note: This correspondence includes an electronic signature (validation and approval via an online system).

Appendix L:
Information Letter

Faculty of Physical Education and Recreation

Information Letter
Male Depictions in Popular Print Media

Hello:

The purpose of this experiment is to help us learn more about how males are influenced or affected by the media's depictions of men in print media, such as magazines. The entire experiment will take approximately 20 minutes. You will be asked to watch a short slideshow and to complete a few questionnaires. The information that you provide in response to the questionnaires is valuable for future research.

Your answers will be kept private and anonymous. You will be assigned a participant number which will not be attached to your name. Data will be kept in a locked cabinet and on a password protected computer. All data, both hard copy and electronic, will be destroyed five years post-publication. Only Jessica Walker and her supervisor, Dr. Tanya Berry, will have access to the data. I am a graduate student in the Faculty of Physical Education and Recreation and this study is for my thesis research.

This study is completely voluntary and you are free to stop at any point without consequences. If you would like to participate, an informed consent document must be signed. There are no known risks to participate in this study. However, if you don't want to answer a question or wish to withdraw from participating, please tell the researcher and your data will not be included in the final results.

If you have any questions about this project, please feel free to e-mail Jessica Walker at jwalker3@ualberta.ca. If you have any further concerns about this study, you may contact my supervisor Dr. Tanya Berry at (780)-492-3280 (tanya.berry@ualberta.ca) or the Health Research Ethics Board at (780) 492-0302. This office has no affiliation or direct involvement with this study.

Thank you for participating.

Sincerely,

Jessica Walker
Faculty of Physical Education and Recreation
University of Alberta
jwalker3@ualberta.ca

Appendix M:
Consent Form

Faculty of Physical Education and Recreation

Consent Form

Title of Project: **Male Depictions in Popular Print Media**

Principal Investigator: Jessica Walker
Faculty of Physical Education and Recreation
University of Alberta
jwalker3@ualberta.ca

Do you understand that you have been asked to be in a research study?	Yes	No
Have you read and received a copy of the attached Information Sheet	Yes	No
Do you understand the benefits and risks involved in taking part in this research study?	Yes	No
Have you had an opportunity to ask questions and discuss this study?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request?	Yes	No
Has the issue of confidentiality been explained to you? Do you understand who will have access to your information?	Yes	No

This study was explained to me by: _____

I agree to take part in this study:

_____ _____
Signature of Research Participant Date

_____
Printed Name

For the Researcher ONLY:
I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

_____ _____
Signature of Investigator or Designee Date

Appendix N: Literature Review

This section provides a review of the literature relating to this study and further outlines the relevancy for conducting this study.

Print Media: Health/Fitness and Sports Magazines

There is increasing evidence pertaining to the cultural preference and endorsement of an ideal male body (Cafri et al., 2005; Pope, Phillips, & Olivardia, 2000). The media's dissemination of a lean and fit, yet muscular, male figure has caused males to become more concerned with achieving this ideal body figure (Labre, 2005; Nowell & Ricciardelli, 2008).

Magazines are one of the largest promoters of gender specific body ideals. Numerous articles, images, and advertisements address ways to improve shape, strengthen and tone muscles, lose fat, and enhance exercise habits (Anderson & Di Domenico, 1992; Law & Labre, 2002). However, a person doesn't have to read magazines to be exposed to male body ideals. They are abundantly displayed in advertisements, including those for material objects such as cars or watches (Pope et al., 2000).

McCracken (1993) indicates that magazine covers have two purposes. The first purpose is to provide people with a "window to their future self" and secondly to promote the services inside the magazine (McCracken, 1993). Together, the images and catch phrases intrigue and welcome the reader into the magazine (Alexander, 2003). Male health/fitness and sports magazine covers work in the same fashion as female magazines do. They target anxiety in order to

get the attention of the onlooker, thus providing them with a source of body dissatisfaction (Alexander, 2003).

Exposure to magazine images of the toned, athletic, and muscular physique portrayed by the media results in body concerns and dissatisfaction within males (Hatoum & Belle, 2004; Leit, Gray, & Pope, 2002; Lorenzen, Grieve, & Thomas, 2004; Morry & Staska, 2001). It was suggested that males have a hard time relating to other body figures (Arbour & Martin Ginis, 2006). For example, overweight images were said to be associated with negative personality traits that men are ashamed of, such as laziness, unmotivated, or a 'couch potato' (Berry & Spence, 2009; Ogden & Mundray, 1996), while hyper-muscular images are thought of as unrealistic to be achieved through normal weight training regimes (Arbour & Martin Ginis, 2006).

As for the influence of sports media, studies have found varying results suggesting that the influences of magazine images and television do not operate the same (Tiggemann, 2003). For instance, Harrison and Fredrickson (2003) and Tiggemann and Pickering (1996) found that sports television exposure did not influence body dissatisfaction. Conversely, Harrison (2000) found that regular exposure to sports magazine images negatively influences body dissatisfaction.

Priming

Priming is a useful technique to include in research studies. It plays an important role in determining how a person's internal mental state interacts with environmental factors to passively influence their cognitions, motivations, and behaviors (Bargh & Chartrand, 2000). In the first phase of an experiment, relevant

mental representations are presented in a subtle and unobtrusive manner, known as the prime (Bargh & Chartrand, 2000). The second phase follows with measuring the effects of the prime (Bargh & Chartrand, 2000). Priming research has shown a wide variety of psychological and physical behaviours caused by the external stimuli presented. For instance, participants shown elderly stereotype words resulted in slower walking speeds (Bargh, Chen, & Burrows, 1996). When participants were subjected to rudeness related stimuli, there was an increased frequency of participant interruptions when the researcher was speaking (Bargh et al., 1996). After exposure to extremely muscular action figures, participants had slower reaction times for words depicting positive feelings on a lexical decision task (Barlett, Smith, & Harris, 2006).

Although, priming effects are typically temporary and weaken with the passage of time (Jo & Berkowitz, 1994), it is possible that they can produce long-term effects. For instance, magazine reading that reinforced appearance norms caused males to experience greater body self-consciousness by year two of the study (Aubrey & Taylor, 2009). Researchers suggest that chronic media exposure to the ideal fit and muscular male body may lead to chronic body image concerns, whereas acute priming exposure may only influence males temporarily (Aubrey & Taylor, 2009). Hence, the importance of continually expanding the literature to determine the severity of the media's influences both acutely and longitudinally.

Internalization

Internalization is the extent to which an individual accepts societal norms of appearance to the point of modifying their behaviour in an attempt to achieve

these standards (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). This practice can influence attitudes, behaviours, body satisfaction, and unhealthy activities (Cafri et al., 2005).

Originally developed for the context of eating disturbances within females, the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) measures internalization of sociocultural body image standards (Heinberg, Thompson, & Stormer, 1995). However, Heinberg and colleagues (1995) acknowledged the measure's need for future psychometric work on various subgroups, such as males or adolescents.

Smolak, Levine, and Thompson (2001) were the first researchers to validate a slightly modified version of the SATAQ which targeted males. Their goal was to address the issue that the SATAQ only refers the desire to be thinner and therefore underestimates muscle and body dissatisfaction for males. Feminine driven items were reworded to focus on muscularity and masculinity (Smolak et al., 2001). For example, item #6 was reworded from "I've felt pressure from TV or magazines to look pretty'' to ''. . . to look muscular'' (Smolak et al., 2001).

Thompson and colleagues (2004) adapted another edition entitled SATAQ-3. The aim of this version was to measure fitness media influences on female body image and the degree to which females internalize sociocultural beliefs about attractiveness (Thompson et al., 2004). Additional items and four subscales were added to measure the influence of the media on sports, exercise, and athleticism. The four subscales added were information, pressure, internalization-general, and internalization-athlete (Thompson et al., 2004). The

most recent revision of the SATAQ was developed by Karazsia and Crowther (2008). This version follows the same format as the SATAQ-3 by Thompson et al. (2004), but was amended for males following Smolak and colleague's (2001) SATAQ. Constructs were reworded in order to tap into the effects of fitness media influences and male internalization of standards of attractiveness.

Self-objectification

Originally created for females, objectification theory postulates a model of relationships between unhealthy psychological and body modification strategies (Fredrickson & Roberts, 1997). The idea behind this theory is that female bodies are objectified through visual evaluation creating the belief that women are appreciated only for what they look like and not who they are (Fredrickson & Roberts, 1997). Females then begin to value their body from a third person perspective focusing on appearance attributes (how do I look?), rather than a first person perspective focusing on competency attributes (how do I feel?) (Fredrickson & Roberts, 1997). This process is called self-objectification and is the main underlying theme and construct for objectification theory (Fredrickson & Roberts, 1997).

Self-objectification in females has been shown to result in appearance anxiety, negative mood states, body dissatisfaction, and harmful eating behaviours (Harper & Tiggemann, 2007; Noll & Fredrickson, 1998; Tiggemann & Lynch, 2001). Women who experience self-objectification are more self-conscious of their body, which generates an obsession with their appearance (Fredrickson & Roberts, 1997).

However, research surrounding male self-objectification is contradictory. Some studies find that self-objectification in males is not linked to the same outcomes as with females, such as body shame, appearance anxiety, or disordered eating (Tiggemann & Kuring, 2004). Conversely, other studies have shown that males are not immune to self-objectification. For example, self-objectification was shown to increase when males are found in a position of exposing their figure, such as wearing a speedo bathing suit (Hebl, King, & Lin, 2004). From these inconsistencies, it is evident that more research is needed examining if males also claim ownership of body socialized ideals and experience self-objectification.

Reasons for Exercise

Regular exercise is related to a variety of psychological and physical benefits (The Canadian Society for Exercise Physiology [CSEP], 2011; Health Canada, 2011). Researchers have classified the various reasons for exercise into three distinct domains: health/fitness, appearance, and enjoyment/mood (Prichard & Tiggemann, 2005; Strelan & Hargreaves, 2005; Strelan, Mehaffey, & Tiggemann, 2003). Exercising for health/fitness or enjoyment/mood reasons have shown to reduce stress, enhance well-being, and improve self-esteem (Tiggemann & Williamson, 2000). Conversely, exercising for appearance reasons has been shown to negatively affect psychological well-being, body dissatisfaction, and self-esteem (Furnham, Badmin, & Sneade, 2002; Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Strelan et al., 2003). As males are increasingly becoming

victims to media standards of attractiveness, it is possible that their reasons for exercise may also change.

Further research has been conducted to examine the relationship between an individual's reasons for exercise and their self-objectification levels. Females who have a high self-objectification level were more likely to exercise for appearance reasons, such as weight loss, weight control, body tone, and satisfying an external pressure to look thin and attractive (Strelan et al., 2003). Conversely, females with low self-objectification levels are more likely to exercise for health, fitness, mood, and enjoyment (Strelan et al., 2003). Greater self-objectification in males has been shown to be related to exercising for appearance based reasons (Strelan & Hargreaves, 2005). Thereafter, it was concluded that objectification theory can be applied to males, suggesting that males who exercise in terms of their level of self-objectification may experience similar consequences to females (Strelan & Hargreaves, 2005). However, there is limited research on male magazine image induced self-objectification and its influence on male reasons for exercise.

Exercise Self-Efficacy

Self-efficacy is defined as an individual's beliefs in their ability to perform a specific behaviour or a set of behaviours required to produce a desired outcome (Bandura, 1977). However, self-efficacy is not merely concerned with the skills that an individual has. Self-efficacy is also concerned with what an individual can do with these skills under a variety of situations in order to engage in relatively routine behaviours and cope with environmental challenges (Bandura, 1997).

Self-Efficacy has shown to be a strong predictor and a key motivational variable for exercise behaviour (Rodgers & Sullivan, 2001). It influences behaviour both directly and indirectly through its influence on intentions, such that intentions may mediate the influence of self-efficacy on behaviour. There are three distinct sub-domains of self-efficacy: task, scheduling, and coping (Rodgers & Sullivan, 2001). Scheduling and coping self-efficacy have been shown to be directly related to exercise behaviour, while task self-efficacy being related to behavioural intentions (Rodgers & Sullivan, 2001; Rodgers, Hall, Blanchard, McAuley, & Munroe, 2002).

When examining the influence of the media on self-efficacy, there tends to be several negative outcomes. However, not all media exposure leads to negative self-efficacy outcomes. Maibach and Flora (1993) found that self-efficacy can be enhanced with the use of media modeling and cognitive rehearsal. In their study, young unmarried females who viewed AIDS information videotapes with modeling and cognitive rehearsal had significantly increased levels of self-efficacy for various AIDS prevention behaviours (Maibach & Flora, 1993). Therefore, if magazines are providing information on how to obtain a particular fit body ideal, it may be possible that this advice is enhancing self-efficacy for engaging in healthy exercise behaviours. In fact, males who read health/fitness or sports magazines had an increase in their self-efficacy and in turn this predicted greater exercise intentions (Wang, 2010).

Exercise Intention

Intentions are one of the main constructs in the Theory of Planned Behaviour (Ajzen 1985); a theoretical model that has been successfully used to predict and understand exercise behaviours (Godin, 1993). Intentions are defined as a person's cognitive representation of readiness to perform a given behaviour (Ajzen & Fishbein, 1980). As they are key markers of behaviour, intentions are important indicators of initiating or sustaining a desired behaviour (Ajzen 1985; Maddux, 1995). In other words, the greater the intention, the more likely an individual will engage in the behaviour.

The media has been able to influence and impact numerous health behaviour intentions. Females shown a video with a thin model had greater intentions to monitor their food consumption and limit their unhealthy food intake (Mask & Blanchard, 2011). Video campaigns addressing skin cancer prevention resulted in greater intentions to change behaviour (Potente, Mciver, Anderson, & Coppa, 2011). Even though the media is a strong promoter for instilling positive healthy behaviour intentions, it can also result in negative intentions. For example, non-smokers who were shown smoking images were more likely to state a future intention to smoke compared to those who saw non-smoking images (Carter, Donovan, Weller, & Jalleh, 2007).

In conjunction with all other health behaviours, exercise also requires intention. Most research examining exercise intentions addresses the amount of exercise a person intends to do or the strength of the intention: such as "how often do you intend to exercise over the following 4 weeks" or "I intend to exercise a

much as possible over the next 4 weeks" (Milne, Rodgers, Hall, & Wilson, 2008). However, the results could change based on current exercise state. Therefore, Milne and colleagues (2008) suggest that there are two main intentions for exercise behaviour: increase or maintain. A person may intend to increase their exercise level until they reach a threshold. At this point, their intention to increase exercise behaviour would decrease and their intention to maintain exercise behaviour would increase (Milne et al., 2008). Nevertheless, this study was conducted in relation to a 12 week exercise program. There is little research on the effects of health/fitness and sport magazine images on a male's acute intentions to increase or maintain current exercise behaviour. Therefore, more research is needed to examine these variables.

Aging

Studies have shown that body concerns and dissatisfaction may vary among men of different age groups (Gray & Ginsberg, 2007). By middle school, boys have already internalized the importance of body ideals and state a preference for a well-proportioned, average build (McCabe & Ricciardelli, 2004; Miskind, Rodin, Silberstein, & Striegel-Moore, 1986).

Upon entering college, males and females experience similar levels of body dissatisfaction (Miskind et al., 1986); 46% of males are dissatisfied with their body and want to gain weight (Pope et al., 2000). This is likely due to the increased pressure males receive as they age for obtaining an ideal figure (Labre, 2005).

Males older than 30 were found to be more satisfied with their body compared to their college aged counterparts, suggesting that the internalization of the media's pressure diminishes over time (Lynch & Zeller, 1999). However, this is not to say that the pressure to conform reduces. The media depicts the aging process as controllable and emphasizes that looking young should be of great importance to people (Fredrickson & Roberts, 1997), such that reduced muscle tone, wrinkles, and greying hair should all be improved. To reiterate this message, people are bombarded with images of the idealized young and fit individuals (Lewis, Medvedev, & Seponski, 2011). These images of typically of people much younger than the age being targeted (Fredrickson & Roberts, 1997). Fueling the fear of the natural aging process has been shown to result in damaged self-esteem, body satisfaction, and engaging in unhealthy behaviours (Fredrickson & Roberts, 1997; Lewis et al., 2011). Nonetheless, the lingering pressure to control aging may still influence older males to internalized images of youthful fit males shown in health/fitness and sports magazines.

As life expectancy continues to increase within the Canadian population (Statistics Canada, 2011), it means that people will spend a longer period of time in their 'old age'. Therefore improving means to keep this cohort of the population healthy is important. More research is needed on variables that will encourage older adults to stay active.

Literature Review References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhi & J. Beckmann (Eds.), *Action Control: From cognition to behavior* (pp. 11.39). Heidelberg: Springer.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs, NJ: Prentice-Hall.

Alexander, S. M. (2003). Stylish Hard Bodies: Branded Masculinity in Men's Health Magazine. *Sociological Perspectives, 46*, 535-554. doi: 10.1525/sop.2003.46.4.535

Anderson, A. E., & Di Domenico, L. (1992). Diet vs. shape content of popular male and female magazines: A dose-response relationship to the incidence of eating disorders? *International Journal of Eating Disorders, 11,* 283-287. doi: 10.1002/1098-108X(199204)11:3<283::AID-EAT2260110313>3.0.CO;2-O

Arbour, K. P., & Martin Ginis, K. A. (2006). Effects of exposure to muscular and hypermuscular media images on young men's muscularity dissatisfaction and body dissatisfaction. *Body Image, 3,* 153–161. doi:10.1016/j.bodyim.2006.03.004

Aubrey, J. S., Taylor, L. D. (2009). The Role of Lad Magazines in Priming Men's Chronic and Temporary Appearance-Related Schemata: An Investigation of Longitudinal and Experimental Findings. *Human Communication Research, 35*, 28-58. doi: 0.1111/j.1468-2958.2008.01337.x

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York: W. H. Freeman and Company.

Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. *Handbook of research methods in social and personality psychology.* New York: Cambridge University Press.

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology, 71*, 230-244. doi: 10.1037/0022-3514.71.2.230

Barlett, C. P., Smith, S. J., & Harris, R. J. (2006). The interference effect of men's handling of muscular action figures on a lexical decision task. *Body Image, 3,* 375-383. doi 10.1016/j.bodyim.2006.09.003

Berry, T. R., & Spence, J. C. (2009). Automatic activation of exercise and sedentary stereotypes. *Research Quarterly for Exercise and Sport, 80,* 1-8. doi: 10.5641/027013609X13088500159921

Cafri, G., Thompson, J. K., Ricciardelli, L., McCabe, M., Smolak, L., & Yesalis, C. (2005). Pursuit of the muscular ideal: Physical and psychological consequences and putative risk factors. *Clinical Psychology Review, 25*, 215-239. doi:10.1016/j.cpr.2004.09.003

Carter, O., Donovan, R., Weller, N., & Jalleh, G. (2007). Impact of Smoking Images in Magazines on the Smoking Attitudes and Intentions of Youth: An

Experimental Investigation. *Tobacco Control, 16*, 368-72. doi: 10.1136/tc.2007.020446

The Canadian Society for Exercise Physiology [CSEP]. (2011). The new Canadian physical activity guidelines. Retrieved from http://www.csep.ca/english/view.asp?x=804

Fredrickson, B., & Roberts, S. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*, 173-206. doi: 10.1111/j.1471-6402.1997.tb00108.x

Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *The Journal of Psychology, 136,* 581-596. Retrieved from: http://www.csub.edu/~lhecht/Classes/BEHS501/Articles/BodyImage.pdf

Gray, J. J., & Ginsberg, R. L. (2007). Muscle dissatisfaction: An overview of psychological and cultural research and theory. In J.K. Thompson & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (pp. 15-39). Washington, DC: American Psychological Association.

Godin, G. (1993). The theories of reasoned action and planned behavior: overview of findings, emerging research problems and usefulness for exercise promotion. *Journal of Applied Sport Psychology, 5*, 141-157. doi: 10.1080/10413209308411311

Hatoum, I. J., & Belle, D. (2004). Mags and abs: Media consumption and bodily concerns in men. *Sex Roles, 51,* 397–407. doi: 10.1023/B:SERS.0000049229.93256.48

Harrison, K. (2000). The body electric: thin-ideal media and eating disorders in adolescents. *Journal of Communication, 50,* 119–143. doi: 10.1111/j.1460-2466.2000.tb02856.x

Harrison, K., & Fredrickson, B. L. (2003). Women's sports media, self-objectification, and mental health in black and white adolescent females. *Journal of Communication, 53,* 216-232. doi: 10.1111/j.1460-2466.2003.tb02587.x

Harper, B., & Tiggemann, M. (2007). The effect of thin ideal media images on women's self-objectification, mood, and body image. *Sex Roles, 58,* 649–657. doi: 10.1007/s11199-007-9379-x

Health Canada. (2011). *Healthy living: Physical activity*. Retrieved from http://www.hc-sc.gc.ca/hl-vs/physactiv/index-eng.php

Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ). *International Journal of Eating Disorders, 17,* 81-89. doi: 10.1002/eat.10257

Hebl, M. R., King, E. B., & Lin, J. (2004). The swimsuit becomes us all: Ethnicity, gender, and vulnerability to self-objectification. *Personality and Social Psychology Bulletin, 30,* 1322–1331. doi: 10.1177/0146167204264052

Jo, E., & Berkowitz, L. (1994). A priming effect analysis of media influence: An update. In J. Bryant & D. Zillmann (Eds.), *Media effects* (pp. 43-60). Hillsdale, NJ: Lawrence Erlbaum Associates.

Karazsia, B. T., & Crowther, J. H. (2008). Psychological and behavioral correlates of the SATAQ-3 with males. *Body Image: An International Journal of Research, 5,* 109-115. doi:10.1016/j.bodyim.2007.08.004

Labre, M. P. (2005). The male body ideal: Perspectives of readers and non-readers of fitness magazines. *Journal of Men's Health and Gender, 2,* 223-229. doi: 10.1016/j.jmhg.2005.03.001

Law, C., & Labre, M. P. (2002). Cultural standards of attractiveness: A thirty year look at changes in male images in magazines. *Journalism & Mass Communication Quarterly, 79,* 697-711. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=0aab312a-7be5-4a43-8ace-a2c1e2785c35%40sessionmgr112&vid=2&hid=106

Leit, R. A., Gray, J. J., & Pope, H. G. (2002). The media's representation of the ideal male body: A cause for muscle dysmorphia? *International Journal of Eating Disorders, 31,* 334-338. doi: 10.1002/eat.10019

Lewis, D. C., Medvedev, K., & Seponski, D. M. (2011). Awakening to the desires of older women: Deconstructing ageism within fashion magazines. *Journal of Aging Studies, 25,* 101-109. doi:10.1016/j.jaging.2010.08.016

Lorenzen, L. A., Grieve, F. G., & Thomas, A. (2004). Exposure to muscular male models decreases men's body satisfaction. *Sex Roles, 51,* 743-748. doi: 10.1007/s11199-004-0723-0

Lynch, S. M., & Zellner, D. A. (1999). Figure Preferences in Two Generations of Men: The Use of Figure Drawings Illustrating Differences in Muscle Mass. *Sex Roles, 40,* 833-843. doi: 10.1023/A:1018868904239

Maddux, J. E. (1995). *Self-efficacy, adaptation, and adjustment: theory, research, and application.* New York: Plenum Press.

Maibach, E. W., & Flora, J. A. (1993). Symbolic modeling and cognitive rehearsal: Using video to promote AIDS prevention self-efficacy. *Communication Research, 20,* 517-545. doi: 10.1177/009365093020004002

Mask, L., & Blanchard, C. M. (2011). The effects of "thin ideal" media on women's body image concerns and eating-related intentions: The beneficial role of an autonomous regulation of eating behaviors. *Body Image, 8,* 357-365. doi: 10.1016/j.bodyim.2011.06.00

McCabe, M. P., & Ricciardelli, L. A. (2004). Body image dissatisfaction among boys across the lifespan: A review of past literature. *Journal of Psychosomatic Research, 56,* 675–685. doi:10.1016/S0022-3999(03)00129-6

McCracken, E. (1993). *Decoding women's magazines: From Mademoiselle to Ms*. London: MacMillan Press.

Milne, M. I., Rodgers, W. M., Hall, C. R., & Wilson, P. M. (2008). Starting up or starting over: The role of intentions to increase and maintain the behavior of

exercise initiates. *Journal of Sport & Exercise Psychology, 30*, 285-301. Retrieved from: http://journals.humankinetics.com.login.ezproxy.library.ualberta.ca/AcuCustom/SiteName/Documents/DocumentItem/15903.pdf

Morry, M. M., & Staska, S. L. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science, 33,* 269–279. doi: 10.1037/h0087148

Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly, 22,* 623–636. doi: 10.1111/j.1471-6402.1998.tb00181.x

Nowell, C., & Ricciardelli, L. A. (2008). Appearance-based comments, body dissatisfaction and drive for muscularity in males. *Body Image, 5,* 337-345. doi: 10.1016/j.bodyim.2008.06.002

Ogden, J., & Mundray, K. (1996). The effect of the media on body satisfaction: The role of gender and size. *European Eating Disorders Review, 4*, 171–182. doi: 10.1002/(SICI)1099-0968

Potente, S., McIver, J., Anderson, C., & Coppa, K. (2011) "It's a Beautiful Day for Cancer": An Innovative Communication Strategy to Engage Youth in Skin Cancer Prevention. *Social Marketing Quarterly, 17,* 86-105. doi:10.1080/15245004.2011.595604

Pope, H. G., Phillips, K. A., & Olivardia, R. (2000). *The Adonis complex: The secret crisis of male body obsession.* Sydney: The Free Press.

Prichard, I. J., & Tiggemann, M. (2005). Objectification in fitness centers: self-objectification, body dissatisfaction, and disordered eating in aerobic instructors and aerobic participants. *Sex Roles, 53,* 19-28. doi: 10.1007/s11199-005-4270-0

Rodgers, W., & Sullivan, M. (2001). Task, coping and scheduling self-efficacy in relation to frequency of physical activity. *Journal of Applied Social Psychology, 31,* 741-753. doi: 10.1111/j.1559-1816.2001.tb01411.x

Rodgers, W. M., Hall, C. R., Blanchard, C. M., McAuley, E., & Munroe, K. J. (2002). Task and scheduling self-efficacy as predictors of exercise behavior. *Psychological Health, 17,* 405-416. doi: 10.1080/0887044022000004902

Silberstein, L. R., Striegel-Moore, R. H., Timko, C., & Rodin, J. (1988). Behavioral and psychological implications of body dissatisfaction: Do men and women differ? *Sex Roles, 19,* 219-232. doi: 10.1007/BF00290156

Smolak, L., Levine, M. P., & Thompson, J. K. (2001). The use of the sociocultural attitudes towards appearance questionnaire with middle school boys and girls. *The International journal of eating disorders, 29,* 216-23. doi: 10.1002/1098-108X(200103)29:2<216::AID-EAT1011>3.0.CO;2-V

Statistics Canada (2011). *Life expectancy at birth, by sex, by province.* Retrieved from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/health26-eng.htm

Strelan, P., & Hargreaves, D. (2005). Reasons for exercise and body esteem: Men's response to self-objectification. *Sex Roles, 53,* 495–503. doi:10.1007/s11199-005-7137-5

Strelan, P., Mehaffey, S. J., & Tiggemann, M. (2003). Self-objectification and esteem in young women: The mediating role of exercise. *Sex Roles, 48*, 89–95. doi: 10.1023/A:1022300930307

Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes toward appearance questionnaire (SATAQ-3): Development and validation. *International Journal of Eating Disorders, 35,* 293–304. doi: 10.1002/eat.10257

Tiggemann, M. (2003). Media exposure, body dissatisfaction and disordered eating: Television and Magazines are not the same! *European Eating Disorders Review, 11,* 418-430. doi: 10.1002/erv.502

Tiggemann, M., & Kuring, J. K. (2004). The role of body objectification in disordered eating and depressed mood. *British Journal of Clinical Psychology, 43,* 299-311. doi: 10.1348/0144665031752925

Tiggemann, M., & Lynch, J. E. (2001). Body image across the life span in adult women: The role of self-objectification. *Developmental Psychology, 37,* 243-253. doi: 10.1037/0012-1649.37.2.243

Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders, 20,* 199-203. Retrieved from: http://web.ebscohost.com.login.ezproxy.library.ualberta.ca/ehost/pdfviewer/pdfviewer?sid=52a3ada8-156b-4e09-8035-75a990543bce%40sessionmgr115&vid=2&hid=106

Tiggemann, M., & Williamson, S. (2000). The effect of exercise on body satisfaction and self-esteem as a function of gender and age. *Sex Roles, 43,* 119–127. doi: 10.1023/A:1007095830095

Wang, X. (2010). More than just anorexia and steroid abuse: Effects of media exposure on attitudes toward body image and self-efficacy. *Atlantic Journal of Communication, 18,* 50-62. doi: 10.1080/15456870903210089