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*Corresponding author: Paulina Swiatkowski, Department of Communication, Hope College, 257 Columbia Ave, Holland, MI 49423, USA
E-mail: Swiatkowski@hope.edu

Reviewing editor:
Tonny Krijnen, Erasmus University
Rotterdam, Netherlands

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the end of the article

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Magazine influence on body dissatisfaction: Fashion vs. health?

Paulina Swiatkowski^{1*}

Abstract: Fashion magazines have been shown to have a negative relationship with body dissatisfaction and psychological health, while the effects of health magazines on body dissatisfaction and psychological health have mainly been studied with men. However, because of gender differences, health magazine consumption effects on men cannot be applied equally to women. Therefore, the present study uses sociocultural theory to study health magazine and possible similarities to fashion magazine effects on women's body dissatisfaction and drive for thinness. Sociocultural attitude toward appearance is then explored as a mediator and potential moderator in the established relationship between magazine consumption and psychological health, defined in this study as drive for thinness and body dissatisfaction. The sample of 230 college-age women completed a cross-sectional survey online. Results suggest differences between health and fashion magazines in their effects on body dissatisfaction. The results and their implications are discussed.

Subjects: Media Theory; Media Effects; Communication Studies; Mass Media & Communication; Magazines

Keywords: body dissatisfaction; internalization; SATAQ; sociocultural theory; magazine consumption; media effects; health; psychology; self-esteem; psychological health



Paulina Swiatkowski

ABOUT THE AUTHOR

Paulina Swiatkowski, MA, is a doctoral candidate in the communication department at the University of Arizona and a visiting professor at Hope College, where she continues investigating media effects and interpersonal communication, separately and as they relate to each other. Specifically, her active research interest focuses on potential media effects on the dynamics within relationships. The research reported in this paper relates to the wider set of projects that focus on media effects on psychological and physical health.

PUBLIC INTEREST STATEMENT

Individual self-perception and psychological health are influenced by many factors, including ever-present media. Millions of print magazine units are still circulated yearly, keeping them a prominent medium in society. This study investigated whether reading magazines has different effects on readers based on theme—fashion or health and fitness. Fashion magazines have been linked to negative effects on females; however, negative effects of reading health and fitness magazines have primarily been studied in men. This imbalance inspired a comparison of the effects between fashion magazines and health and fitness magazines. Findings demonstrate a difference between the two themes—fashion magazines are linked with body dissatisfaction while health and fitness magazines are linked with a desire to be thin. While the magazines seem to have different effects, both come with risk: body dissatisfaction can lead to depression while drive for thinness can lead to eating disorders.

1. Introduction

The media present unrealistic ideals, especially of women's bodies (Grabe, Ward, & Hyde, 2008; Hawkins, Richards, Granley, & Stein, 2004). Literature on negative media effects on women mainly covers models and actors in television shows and advertisements, though a strong body of research also identifies effects of advertisements in magazines (López-Guimerà, Levine, Sánchez-carracedo, & Fauquet, 2010). Exposure to popular fashion magazines that contain messages focused on beauty and fashion (e.g. *Elle*, *Vogue*, and *InStyle*) has been correlated with negative moods and higher body dissatisfaction in women (Grabe et al., 2008; Hawkins et al., 2004; López-Guimerà et al., 2010). However, health and fitness magazines (e.g. *Shape*, *Women's Health*, *Self*) have not been studied for such effects in women. Literature examining whether there is a difference in magazine effects on women based on the content (health vs. fashion) of the magazines is limited (Aubrey, 2010; Thomsen, 2002). Therefore, this study adds to existing literature by exploring possible similarities and differences among the effects health magazines and fashion magazines have on female psychological health.

The prevalence of the thin ideal seems to be the same across genres because of similar images, despite seemingly different themes of the magazines. For example, Aubrey (2010) found that appearance frames are as common as health frames on health magazine covers. Most literature on health magazines focuses on male muscle dysmorphia, "a disorder in which individuals believe themselves to be much smaller than they appear" rather than looking at female-targeted health magazines (Grieve & Helmick, 2008, p. 288; Labre, 2005a, 2005b). However, numerous studies have shown significant correlations between consuming fashion magazines and female body dissatisfaction and drive for thinness (Harrison & Cantor, 1997; Lin & Reid, 2009; Shaw, 1995; Tiggemann, Polivy, & Hargreaves, 2009).

Therefore, based in sociocultural theory (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), the present study has two main purposes. First, this study seeks to compare the correlations between fashion magazine effects and health magazine effects with regard to college-age women's body dissatisfaction and drive for thinness. This would help researchers understand whether the theme of the content in a magazine matters when looking at how magazines affect female psychological health. If there is no difference, then existing literature about fashion magazines could be further generalized to include health magazines.

The second purpose of this study is to understand how internalization of the media's representation of the thin ideal interacts with individual factors like body dissatisfaction and drive for thinness. This focuses on the specific process through which the magazines have the effect. If there is a difference between the types of magazines (health vs. fashion), this investigation will begin to shed light as to how the type of magazine influences the individual.

Internalization occurs when an individual takes in attitudes of those who he or she looks up to or respects (Thompson & Stice, 2001). If reading of magazines leads to internalizing the thin ideal, which then leads to body dissatisfaction and drive for thinness, then internalization would be treated as a mediator. On the other hand, one could argue that an individual's level of internalization is based on a variety of media, not just magazines. Therefore, the internalization of the thin ideal from a variety of media, including magazines, could be an important individual difference variable moderating the relationship between magazine consumption psychological health variables such as body dissatisfaction and drive for thinness. Therefore, internalization of the media's portrayals of the thin ideal will also be a key factor in this study's investigation of effects of health and fashion magazines.

2. Literature review and rationale

2.1. Sociocultural theory

Sociocultural theory argues that the current societal standard for beauty drive the importance for women to be thin, causing them high stress from trying to achieve the high standards set up by society (Thompson et al., 1999). These images are highly misrepresentative of the real world with

regard to body image, leading to unrealistic body expectations and body dissatisfaction. The average woman has grown in size over the years while the standard presented in the media continues to become progressively thinner across various media outlets (Thompson et al., 1999). While magazines represent only one mass media vehicle through which the public may have access to images of what is considered ideal, research shows that the vehicle is not as important as the messages and models presented across mass media vehicles (Bell & Dittmar, 2011). Therefore, while magazines represent a single element of a rich media diet an individual may consume, it allows for investigation of similar images with different frames—a representation of an ideal body type presented with messages focused either on beauty or on health.

Media users seem to mirror ideology presented in the media in their beliefs and values, because mass media is a principal source of information about what the ideal is—thinness—and how to attain it (López-Guimerà et al., 2010). Today's society often equates beauty with thinness while overweight people are seen as unattractive and as enacting socially unacceptable behaviors which lead them to that state of being (Thompson et al., 1999). Studies show that media exposure is positively correlated with perceptions that overweight individuals possess negative characteristics such as laziness, greed, and are generally seen as unattractive (Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003; Levine & Harrison, 2009; López-Guimerà et al., 2010; Shrum, 2004).

Furthermore, individual beliefs may not be strong enough to counter societal pressures. In their study, Myers and Crowther (2007) found that while women with feminist beliefs recognized that they should not judge themselves based on their appearances, they felt the pressure societal ideals presented through the media to do so anyway. Furthermore, Myers and Crowther (2007) suggest that “when women see images of the thin-ideal, they may internalize that unattainable ideal and compare themselves unfavorably, which leads to body dissatisfaction” (p. 306). This conclusion is in line with Dittmar's (2009) observation that the core of physical and mental well-being is body image, which suggests that body dissatisfaction would be negatively correlated with psychological health.

2.2. Media and the thin ideal

The “thin ideal” images in magazines have been linked to unhealthy weight management behaviors (López-Guimerà et al., 2010). However, research about magazine effects on women's self-concept generally focuses on messages in fashion and beauty magazines, even though the magazines include various health and fitness topics (Grabe et al., 2008; Hawkins et al., 2004; López-Guimerà et al., 2010; Luff & Gray, 2009). Despite the media's focus on a desired appearance and a healthy lifestyle, U.S. women are increasing in average size (Grieve & Helmick, 2008). Both the presence of the thin ideal in the media and because consuming women's fashion magazines remain a prominent variable within media effects studies contribute to the continued internalization of the thin ideal (Levine & Harrison, 2009; Lokken, Worthy, & Trautmann, 2004; López-Guimerà et al., 2010).

Looking beyond print, television has negative effects on women, as well. Even watching small amounts of programming with actresses fitting the thin ideal can have negative effects—distorted self-perception, lower self-esteem, and increases in depression—on women (Greenberg et al., 2003). Only about 14% of females and 24% of males depicted in television are overweight or obese—a disproportionately small amount when compared to the general population (Greenberg et al., 2003; Myers & Biocca, 1992). However, both being overweight or obese and underweight can be dangerous.

The domination of the thin ideal and the lack of representation of average body types in media has negative effects on individuals—they try to achieve the thin ideal, which they internalize as the norm because of the limited representation of the average body type in the media, a prominent source of information in our technology-focused society (Greenberg et al., 2003; Myers & Biocca, 1992; Thompson et al., 1999). Furthermore, media influences self-perception via objectification. Increased consumption of sexually objectifying television shows or magazine images increases individuals' states of self-objectification (Aubrey, 2006; Aubrey, Henson, Hopper, & Smith, 2009). Participants describe themselves more negatively and in terms of how the body looks rather than what functions

it can perform, further emphasizing the public's internalization of media messages, like the thin ideal (Aubrey et al., 2009). However, despite the lack of diversity of body images shown in the media and the focus on body appearance rather than function and performance in the media, individuals still look to the media for guidance of what their goals should be.

Hogg and Fragou (2003) note that if the target in the media used for comparison for self-improvement is inspiring, the results are positive; however, if the target for comparison is threatening, the results are negative. Therefore, the salience of the thin ideal in magazines as a target for comparison helps explain magazine effects on psychological health with issues like depression, eating disorders, and low self-esteem because the models can be perceived as threatening (López-Guimerà et al., 2010). This supports the investigation of magazine consumption effects on self-perception. With sociocultural theory (Thompson et al., 1999) as the framework, this study explores whether magazine content (health vs. fashion) influences these effects or if the effects are consistent, regardless of theme, as both types of magazines present difficult to achieve beauty standards.

Sociocultural theory (Thompson et al., 1999) can help better understand why reading magazines would lead to lower psychological health (through, for example, higher depression levels) through internalization. Heinberg and Thompson (1995) used television advertisements with women for various products for both the experiment (containing women who fit the thin ideal) and control (focused on the product rather than the woman). The authors noted that women who score above average levels of internalization are likely to have higher levels of negative moods and body dissatisfaction than women at or below the average. Next, in an effort to identify methods to combat negative effects of the images in magazines, Slater, Tiggemann, Firth, and Hawkins (2012) studied whether warning labels on fashion magazines that images were digitally altered would buffer negative media effects. The results suggest that the warning labels would lower the likelihood of body dissatisfaction, though overall negative moods after viewing the images remained the same even with a warning label (Slater et al., 2012). These studies suggest that when women are presented in the thin ideal, the theme surrounding the images may not distract from consumer internalization of this ideal. Therefore, using sociocultural theory to examine different magazine themes can help expand the theory beyond its traditional association with fashion magazines (specific to print media) and television.

Poor psychological health also correlates with media exposure and body dissatisfaction. For example, many studies have explored the relationship between media consumption and anorexia nervosa and bulimia nervosa (Levine & Harrison, 2009; López-Guimerà et al., 2010; Wiseman & Moradi, 2010). Internalization of the thin ideal represented through the media has been noted as a mediator for the link between media exposure and eating pathology (Stice, Schupak-Neuberg, Shaw, & Stein, 1994). Such internalization can also cause an emotional response after exposure to thin models and is also associated with body dissatisfaction, drive for thinness, and symptoms of eating disorders (Cahill & Mussap, 2007; Lokken et al., 2004). Furthermore, increased state anger, anxiety, and depression after exposure to thin models are associated with increased likelihood of body dissatisfaction and eating disorders, a relationship that is mediated by frequency of body comparison for women. This suggests that media internalization is directly related to levels of body dissatisfaction (Cahill & Mussap, 2007). However, because these studies have primarily focused on media other than health magazines, including television and fashion magazines, their results may not be applicable to health magazines.

2.3. Health messages and gender differences

For the purposes of this study, fashion magazines are conceptualized as ones with content focused on fashion, beauty, and appearance-focused material. They often focus on trends, make-up, clothing styles, and products to improve appearance. Health and fitness magazines are conceptualized as ones with content focused on exercise, diet, sexual health, and overall well-being. They often offer motivation for healthy behaviors: a healthy diet, strength and cardiovascular exercise, and promote physical attractiveness and general health (Aubrey, 2010). Most research investigating health magazines, however, focuses on magazines targeted to men (Alexander, 2003; Grieve & Helmick, 2008; Labre, 2005a, 2005b; Wiseman & Moradi, 2010).

Men's fitness magazines present an image of very low body fat and well-defined muscles—an ideal—to readers (Labre, 2005a). Men internalize such images as representation of what masculinity is and what women look for in partners (Alexander, 2003). Furthermore, Grieve and Helmick (2008) identify a correlation between self-objectification in men and characteristics like body dissatisfaction, self-esteem, drive for muscularity, and presence of symptoms of muscle dysmorphia. Internalization of cultural standards portrayed in the media is also positively correlated with self-objectification and eating disorder symptoms, linking media effects to body dissatisfaction in men (Wiseman & Moradi, 2010). Furthermore, Dutta (2007) examined motivations behind consuming health messages in the media. Specifically, health oriented individuals are more likely to engage in health seeking behaviors, suggesting that individuals who consume health magazines do so initially as an information seeking tactic (Dutta, 2007). But if the effects of health magazines are the same as those of fashion magazines, information seeking via health magazines could have unexpected, negative consequences for the reader. Therefore, it is vital to compare effects between health magazines and fashion magazines.

However, most research of health magazine effect focuses on men and studies suggest gender differences in media effects (Barriga, Shapiro, & Fernandez, 2010; Bissell, 2002) and body image concerns (Merriman, Brahler, Dinan, & Finzer, 2008; Rodin, Silberstein, & Striegel-Moore, 1984). Women are socialized to perceive the importance of being thin, while men are taught that masculinity means big, strong, and fit bodies (Alexander, 2003; Merriman et al., 2008; Rodin et al., 1984). Knobloch-Westerwick and Hoplamazian (2012) found that biological sex is a strong predictor for media use. Individuals spent a majority of their time reading magazines targeted toward their gender, even if presented with a third, neutral, option. Opting for media that fits with the individual's gender increases gender conformity—if women pick magazines that are marketed toward them, they are more likely to be exposed to the thin ideal presented to women. Finally, while eating concerns do not differ between the sexes—men and women both worry about food consumption—body image concerns are more common and stronger in women than men (Merriman et al., 2008). Therefore, while studies on health magazines tend to focus on men, gender differences in media effect emphasize the importance of studying health magazines for women, as well.

Based on the findings of previous research, noted above, the present study seeks to replicate correlations between consuming fashion magazines and body dissatisfaction and drive for thinness. Then, this study is designed to test correlations between consuming health magazines and body dissatisfaction and drive for thinness, thus expanding sociocultural theory research by exploring whether internalizing the thin ideal occurs in both genres of magazines.

Furthermore, the study looks to better understand how internalizing media ideals works in the relationship between magazine consumption and body dissatisfaction and drive for thinness. Internalization is the possible vehicle through which magazines affect individuals (via mediation) or different levels of internalization may affect individuals differently (via moderation). Finally, this study also investigates body dissatisfaction as a mediator between the established effects of magazine consumption and psychological health, represented in this study by measuring depression.

3. Hypotheses

Exposure to the media is correlated with high levels of body dissatisfaction and increased drive for thinness, especially when looking at fashion magazines (Lokken et al., 2004; López-Guimerà et al., 2010). These findings need to be replicated in this study for possible clarification of sociocultural theory to include health magazines, as fashion magazines have been well studied. Therefore, the first two hypotheses of the present study seek to replicate findings:

H₁: Frequency of consumption of women's fashion magazines is positively associated with women's body dissatisfaction.

H₂: Frequency of consumption of women's fashion magazines is positively associated with women's drive for thinness.

The two research questions of the present study ask whether health magazines—those focused on health topics such as diet, exercise, and an overall healthy lifestyle—have a similar effect on female body dissatisfaction and female drive for thinness. By including health magazines targeted to women, frequency of consumption of health magazines can be compared to frequency of consumption of fashion magazines to possibly expand on current research beyond fashion magazine effects on women. Therefore, the research questions for this study seek to confirm this assumption:

RQ₁: Is the frequency of consumption of women's health magazines positively associated with women's body dissatisfaction?

RQ₂: Is the frequency of consumption of women's health magazines positively associated with women's drive for thinness?

Furthermore, this study explores how the internalization of media ideals works in the relationship between magazine consumption and body dissatisfaction, and also between magazine consumption and drive for thinness. It is possible that internalization is the vehicle through which magazines affect individuals (via mediation). If this is the case, then the relationship between the reading magazines and the effects on readers will be dependent on internalization (see H_{3a} and H_{4a}). However, it may also be that different levels of internalization affect individuals differently (via moderation). In this case, the relationship between reading magazines and the effects on readers is always there, but the effects will vary in intensity at various levels of internalization (see H_{3b} and H_{4b}). Therefore, to better understand the process of internalizing media messages, this study proposes the following hypotheses:

H_{3a}: The relationship between women's magazine consumption frequency and body dissatisfaction is mediated by sociocultural attitudes toward appearance.

H_{3b}: The relationship between women's magazine consumption frequency and body dissatisfaction is moderated by sociocultural attitudes toward appearance such that women high in attitudes in line with the thin ideal will have lower body dissatisfaction and women low in attitudes in line with the thin ideal will have higher body dissatisfaction.

H_{4a}: The relationship between women's magazine consumption frequency and drive for thinness is mediated by sociocultural attitudes toward appearance.

H_{4b}: The relationship between women's magazine consumption frequency and drive for thinness is moderated by sociocultural attitudes toward appearance such that women high in attitudes in line with the thin ideal will have lower drive for thinness and women low in attitudes in line with the thin ideal will have higher drive for thinness.

Magazine consumption affects body dissatisfaction and magazine consumption affects psychological health (López-Guimerà et al., 2010). However, levels of body dissatisfaction also affect psychological health. Therefore, the final hypothesis looks at body dissatisfaction as a possible mediator for the relationship between magazine consumption and psychological health in a sociocultural context:

H₅: The relationship between women's magazine consumption frequency and depression is mediated by level of body dissatisfaction.

4. Method

4.1. Participants

Participants were 230 women recruited from communication classes at a large southwestern university to complete an online survey in exchange for course credit. Males were allowed to refer females to participate in exchange for credit, as well. The primary researcher visited the classes to make announcements of the study and its alternative for males, and emailed the class instructors with a recruitment announcement for them to post on their course websites. While the participants were not provided with a false pretense for the study, the purpose of the study was communicated in a very generic manner—participants were told that the study sought to better understand media

consumers. Participants were directed to the survey on Qualtrics via a link included in the information sent to the instructors, where they first reviewed the Institutional Review Board (IRB) approved consent form and agreed with before continuing to the survey. IRB provided the ethical consent for the study. While the participants were not formally debriefed after their participation, they had the contact information for the researcher, whom they were encouraged to contact with questions.

Participation was limited to women over the age of 18 and an age cap was not presented. Mean age was 23.39 years ($SD = 8.2$). The sample was mostly White (72.8% White, 10.5% Hispanic, 5.4% Asian, 5% African American, 2.1% American Indian or Alaskan Native, and .4% Native Hawaiian or Pacific Islander) and educated (89.6% are at least in their first year of their undergraduate degree and 3% are in their master's or doctoral education). Participants mean height was 64.83 inches ($SD = 2.7$) or 5'4" (1.65 meters) and mean weight was 131.2 lbs ($SD = 22.07$) (59.51 kg). Their mean BMI was 21.94 ($SD = 3.49$), which is in the "normal weight" range (below 18.5 = underweight, 18.5–24.9 = normal, 25–29.9 = overweight, 30 or higher = obese).

4.2. Predictor variables

4.2.1. Magazine consumption frequency

Magazine consumption was measured in two ways, through frequency of reading and commitment level, as there may be differences in a participant's investment in the messages portrayed in the magazines depending on how often they read the magazines as opposed to how committed they are to them (e.g. only flipping through the magazine at a doctor's office vs. reading articles daily; purchasing the magazine on occasion vs. possessing a monthly subscription).

Participants were asked to provide information about their magazine consumption habits. A list of popular health magazine (i.e. *Self*, *Shape*, *Women's Health*, and *Fitness*) and fashion magazines (i.e. *Vogue*, *Elle*, *InStyle*, *Marie Claire*, and *Glamour*) was provided. In one section, participants rated their frequency of reading each of the nine magazines. For each magazine, participants responded to "please indicate how often you read each of these magazines" on a 7-point scale ranging from "never" to "daily." For this question, the health magazines and fashion magazines were collapsed into one scale for each type, both with high reliability (health: $M = 1.51$, $SD = .80$, $\alpha = .90$; fashion: $M = 1.78$, $SD = .93$, $\alpha = .89$).

Questions also included level of commitment to each of the types of magazines. For each magazine, participants responded to "please indicate your commitment to each of the following magazines" on a 7-point scale including: "I receive a regularly delivered subscription," "I regularly purchase a new issue of a magazine from a newsstand," "I occasionally purchase the magazine (ex. something on the cover seems interesting)," and "I only flip through this magazine if it happens to be available to me out of convenience (e.g. in a waiting room or a friend's house)." The scale items have opposite values compared to the reading frequency with lower values indicating more commitment, while higher values for the previous scale indicate more reading. For this question, the health magazines and fashion magazines were collapsed into one item for each type of magazine, both with high reliability (health: $M = 1.27$, $SD = .64$, $\alpha = .90$ fashion: $M = 1.45$, $SD = .67$, $\alpha = .89$).

4.3. Criterion variables

The Eating Disorder Inventory (Garner, Olmstead, & Polivy, 1983) consists of eight sub-scales, including levels of body dissatisfaction. The first three subscales identify behaviors and attitudes that relate to eating and body figure that would identify general dieting behavior. The other five subscales focus on eating disorders, measuring traits that clinical theorists identified as "fundamental aspects of the psychopathology of anorexia nervosa" (Garner et al., 1983, p. 29). For this study, two of the eight subscales were used: drive for thinness and body dissatisfaction.

4.3.1. Drive for thinness

Drive for thinness indicates an individual's motivation to diet and preoccupation with weight and dieting. With this scale, participants reveal any excessive concern with dieting and fear of weight gain. This subscale includes eight items such as "I think about dieting" and "I feel extremely guilty after overeating" ($M = 2.87$, $SD = .81$, $\alpha = .85$) (Garner et al., 1983).

4.3.2. Body dissatisfaction

Body dissatisfaction is defined as how displeased an individual is with his or her body size and shape. This acts as a criterion variable and a mediator in the present study. The body dissatisfaction subscale was used from the Eating Disorder Inventory (Garner et al., 1983). Items in the body dissatisfaction subscale include "I like what I look like in pictures" and "Other people consider me good looking" to name a few, to which participants respond on a 1–5 scale (1 = never; 5 = always). The items for the subscale were collapsed into one variable with high reliability ($M = 2.76$, $SD = .81$, $\alpha = .87$).

4.3.3. Psychological health

For the purposes of this study, "good" psychological health was operationalized as low levels of depression. For the purposes of this study, psychological health will be measured with the Center for Epidemiologic Studies Depression Scale (e.g. "I could not 'get going'" and "I felt lonely") (CES-D; Radloff, 1977). A shorter, validated 10-item version of the CES-D is used for this study to which participants answered on a 1–5 scale (1 = strongly disagree; 5 = strongly agree) ($M = 2.34$, $SD = .59$, $\alpha = .81$) (Zhang et al., 2012).

4.3.4. Sociocultural attitudes toward appearance

The Sociocultural Attitudes Toward Appearance Questionnaire—Revised (SATAQ) (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) includes subscales for internalization and measures individual endorsement of societal appearance ideals (Calogero, Davis, & Thompson, 2004). This scale also assesses women's awareness of society's standard for thinness, in addition to their acceptance of it (Thompson et al., 1999). Within this scale, there are four subscales that measure generic media influence related to TV, magazines, and movies, internalization of athletic and sports figures, media pressures, and media as an information source (Thompson et al., 1999). Questions dealing with other forms of media were altered to focus on magazines (unless that makes the question redundant, in which case the item will be removed). Example questions of the measure include "I would like my body to look like the women in magazines" and "In our society, fat people are regarded as attractive." Participants reported their level of agreement with the items on a 1 (strongly disagree) to 5 (strongly agree) scale ($M = 3.46$, $SD = .54$, $\alpha = .88$).

5. Plan of analysis

To begin the analysis, correlations were run between the proposed predictor variables (frequency of reading health and fashion magazines, participants' commitment levels to health and fashion magazines (H_1-H_4 and RQ_1-RQ_4)) and the proposed criterion variables (body dissatisfaction and drive for thinness (H_1-H_4 and RQ_1-RQ_4)). Furthermore, the two types of magazines were included in the second step of a regression analysis with demographics (i.e. age, race, education, and BMI) in the first step and SATAQ in the second step.

H_{3a} , H_{3b} , H_{4a} , and H_{4b} propose that SATAQ may have a role in the relationship between reading the magazines and body dissatisfaction and drive for thinness as a possible mediator/moderator. Hayes (2012) PROCESS regression investigates the proposed relationships by reviewing the results for direct effects, indirect effects, and the Preacher and Kelley κ^2 . Finally, H_5 proposes that the effect magazine consumption has on women's psychological health (i.e. depression levels) is mediated by participant level of body dissatisfaction. This relationship was also investigated via Hayes (2012) PROCESS regression.

Table 1. Correlation between body dissatisfaction and reading fashion magazines, reading health magazines, commitment to fashion magazines, and commitment to health magazines

		Read fashion	Read health	Commitment fashion	Commitment health
Body dissatisfaction	Pearson correlation	.177**	.075	.139*	.144*
	Sig. (2-tailed)	.008	.264	.038	.032

*Significant level at $p < .05$.

**Significant level at $p < .001$.

6. Results

Reading fashion magazines was significantly and positively correlated with body dissatisfaction ($r(224) = .177, p = .008$) (H_1). Reading health magazines is not significantly correlated with body dissatisfaction ($r(224) = .075, p = .264$) (RQ_1). However, level of commitment to both fashion magazines ($r(224) = .139, p = .038$) and health magazines ($r(224) = .144, p = .032$) are significantly and positively correlated with body dissatisfaction, suggesting that the more committed the participant is to that type of magazine, the higher the body dissatisfaction, which partially confirms H_1 and RQ_1 (see Table 1).

Reading fashion magazines ($r(224) = .138, p = .038$) and reading health magazines ($r(224) = .166, p = .013$) were significantly and positively correlated with drive for thinness (H_2 and RQ_2). Both level of commitment to fashion magazines ($r(224) = .145, p = .030$) and health magazines ($r(224) = .142, p = .034$) were significantly and positively correlated with drive for thinness. Therefore, the more committed the participant is to that type of magazine and the more of it they read, the higher the drive for thinness, supporting H_2 and RQ_2 (see Table 2).

The magazine variables were analyzed via regression. Race, education, age, and BMI were entered in the first step, SATAQ was entered into the second step, and the four magazine variables (frequency of reading and commitment to health and fashion magazines) were entered in the third step of the regression analysis. The analysis indicates that the set of predictors performed better than chance in predicting levels of body dissatisfaction ($F(4, 214) = 4.081, p = .003$, adjusted $R^2 = .323$). Also, the analysis indicates that the set of predictors performed better than chance in predicting levels of drive for thinness ($F(4, 214) = 3.417, p = .010$, Adjusted $R^2 = .263$). However, upon closer inspection, it seems that the individual variables do not necessarily predict body dissatisfaction and drive for thinness as was expected (see Table 3). Therefore, H_1 and H_2 are only partially supported. RQ_1 's answer is no—controlling for reading of and commitment to fashion magazines and the other variables, reading of and commitment to health magazines do not significantly predict levels of body dissatisfaction. And RQ_2 's answer depends on which type of health magazine consumption one focuses on—controlling for reading of and commitment to fashion magazines and the other variables, reading health magazines does significantly predict levels of drive for thinness, but commitment to health magazines does not.

Table 2. Correlation between drive for thinness and reading fashion magazines, reading health magazines, commitment to fashion magazines, and commitment to health magazines

		Read fashion	Read health	Commitment fashion	Commitment health
Drive for thinness	Pearson correlation	.138*	.166*	.145*	.142*
	Sig. (2-tailed)	.038	.013	.030	.034

*Significant level at $p < .05$.

Table 3. Hierarchical multiple regression analyses predicting body dissatisfaction and drive for thinness when reading fashion magazines and health magazines

Predictor	Body dissatisfaction		Drive for thinness	
	DR ²	b	DR ²	b
Step 1	.119**		.03	
Control variables ^a				
Step 2	.182**		.218**	
SATAQ		.440**		.483**
Step 3	.050*		.045*	
Reading fashion		.186*		-.026
Reading health		-.022		.167*
Total R ²	.323*		.263*	
n	214		214	

^aControl variables include age, race, education, and BMI.

*Significant level at $p < .05$.

**Significant level at $p < .001$.

H_3 and H_4 predicted how the internalization of media messages influences the relationship between magazine consumption and body dissatisfaction and drive for thinness. H_{3a} hypothesized that the effect of women’s magazine consumption frequency on female body dissatisfaction is mediated by sociocultural attitudes toward appearance. The PROCESS analysis showed no significant mediation effect. Therefore, H_{3a} was not supported.

H_{3b} hypothesized that the effect of women’s magazine consumption frequency on female body dissatisfaction is moderated by sociocultural attitudes toward appearance such that women with high in attitudes aligned with the thin ideal have lower body dissatisfaction and women low in attitudes aligned with the thin ideal have higher body dissatisfaction. SPSS PROCESS was used to run moderation analyses, which were statistically significant for reading fashion magazines (Adjusted $R^2 = .2178$, $F(3, 220) = 20.419$, $p < .001$) and reading health magazines (Adjusted $R^2 = .1896$, $F(3, 220) = 17.1558$, $p < .001$). According to the results, individuals who reported high media internalization had consistently high levels of body dissatisfaction, regardless of the amount of magazines they read. For individuals with medium and low levels of internalization, however, the more magazines they read, the higher their body dissatisfaction (see Figures 1 and 2). Therefore, H_{3b} was supported.

Figure 1. The effects of women’s fashion magazine consumption frequency on female body dissatisfaction, moderated by sociocultural attitudes toward appearance.

Notes: X—Reading fashion magazine; Y—Body dissatisfaction.

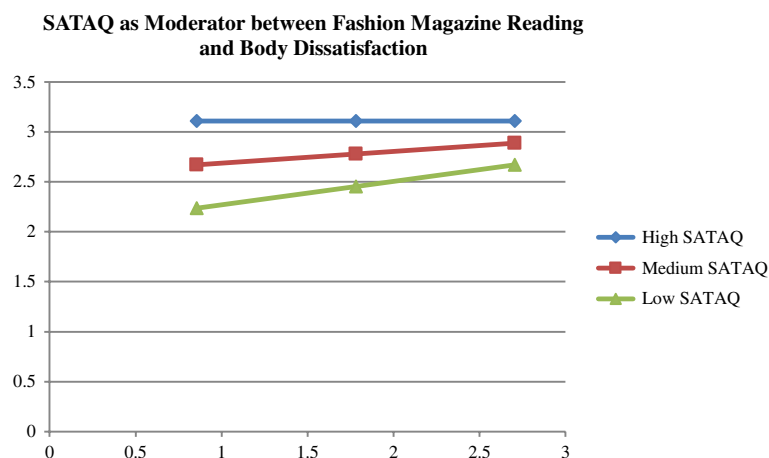
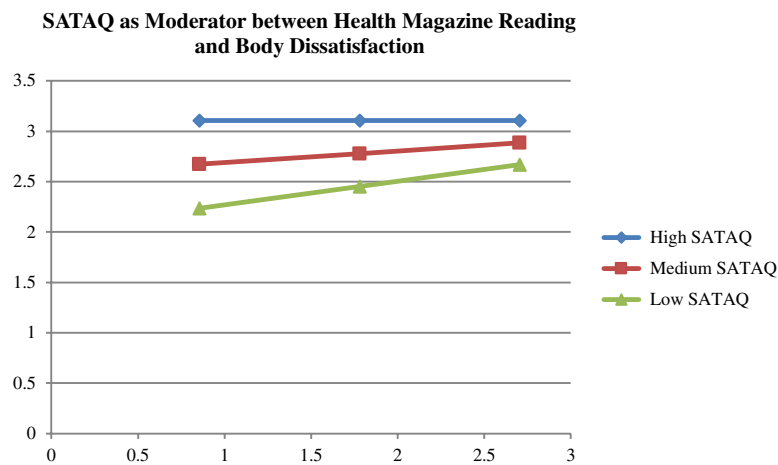


Figure 2. The effects of women’s health magazine consumption frequency on female body dissatisfaction, moderated by sociocultural attitudes toward appearance.

Notes: X—Reading health magazine; Y—Body dissatisfaction.

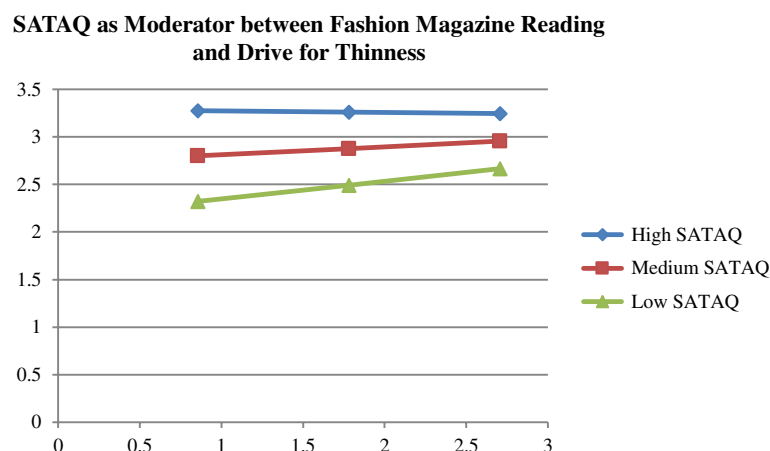


H_{4a} hypothesized that the effect of women’s magazine consumption frequency on female drive for thinness is mediated by sociocultural attitudes toward appearance. The total effect, which includes SATAQ as a mediator, of reading fashion magazines was significant ($B = .1225, p = .0384$). However, the direct effect and indirect effect through SATAQ was not significant for the relationship between reading fashion magazines and drive for thinness. Furthermore, the direct effect of reading health magazines was significant ($B = .1729, p = .0039$), as was the total effect, which includes SATAQ as a mediator ($B = .1703, p = .0128$). However, the indirect effect of reading health magazines on drive for thinness through SATAQ was not significant. This suggests that SATAQ is not a mediator between reading women’s magazines and drive for thinness and, therefore, H_{4a} is not supported.

H_{4b} hypothesized that the effect of women’s magazine consumption frequency on female drive for thinness is moderated by sociocultural attitudes toward appearance such that women high in attitudes aligned with the thin ideal have lower drive for thinness and women low in attitudes aligned with the thin ideal have higher drive for thinness. The moderation analyses were significant only for reading fashion magazines ($R = .5064, \text{Adjusted } R^2 = .2565, F(3, 220) = 25.2981, p < .001$). Individuals who reported high media internalization had consistently high levels of drive for thinness, regardless of the amount of fashion magazines they read. For individuals with medium and low levels of internalization, however, the more fashion magazines they read, the higher their drive for thinness (see Figure 3). Therefore, H_{4b} is partially supported.

Figure 3. The effects of women’s health magazine consumption frequency on female body dissatisfaction, moderated by sociocultural attitudes toward appearance.

Notes: X—Reading fashion magazine; Y—Drive for thinness.



H_5 hypothesized that body dissatisfaction mediates the link between fashion magazines and depression. No direct effect was found between reading fashion magazines and levels of depression. However, the indirect effect was significant ($B = .0215$; $CI: (.0056, .052)$; $p = .0078$). Preacher and Kelley (2011) κ^2 further reveals an effect of .0215; just under 3% of variance in the DV was explained by indirect effect (see Figure 4).

There was also no direct effect found between level of commitment to fashion magazines and levels of depression. However, the indirect effect is significant ($B = .0235$; $CI: (.0028, .0585)$; $p = .0166$). Preacher and Kelley (2011) κ^2 further reveals an effect of .0235; just under 3% of variance in the DV was explained by indirect effect (see Figure 5).

There was no significant mediation between reading health magazines and depression. Also, body dissatisfaction as a mediator for commitment to health magazines and depression also had no direct effect. Again, however, the indirect effect is significant ($B = .025$, $CI: (.0021, .0623)$; $p = .0155$). Again, Preacher and Kelley (2011) κ^2 reveals an effect of .0269; just under 3% of variance in the DV was explained by the indirect effect (see Figure 6). Therefore, H_5 is only partially supported.

Figure 4. Significant indirect effect of reading fashion magazines on depression, mediated through body dissatisfaction.

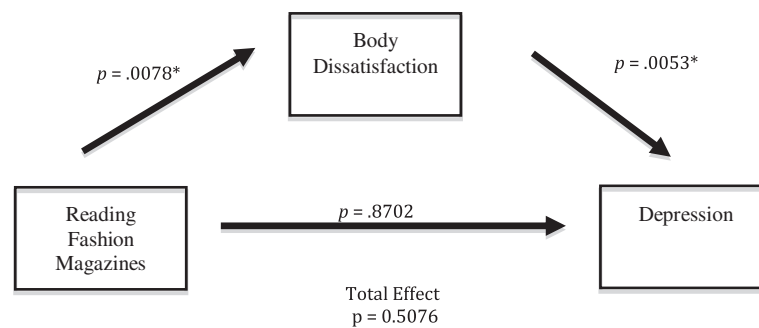


Figure 5. Significant indirect effect of commitment to fashion magazines on depression, mediated through body dissatisfaction.

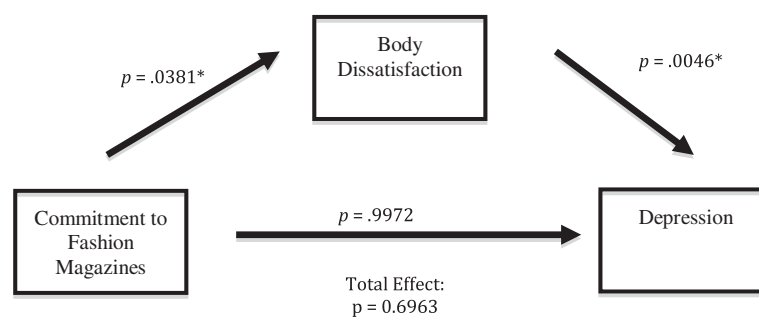
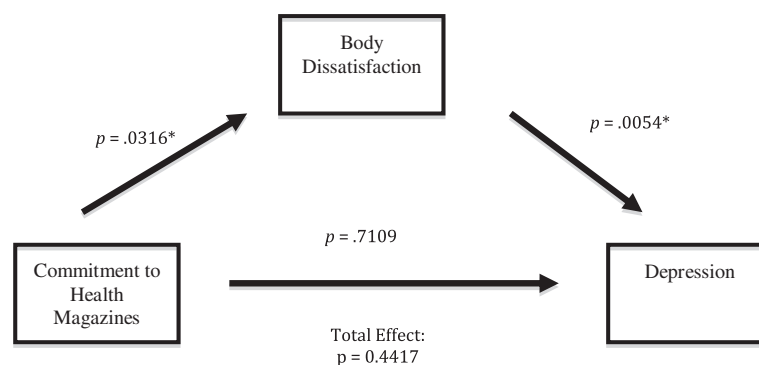


Figure 6. Significant indirect effect of commitment to health magazines on depression, mediated through body dissatisfaction.



7. Discussion

Sociocultural theory (Thompson et al., 1999) framed this study to see if the theory could be expanded to include health magazines and to better understand internalization and media effects. The first two hypotheses and two research questions for this study were partially supported. Frequency of reading fashion magazines was only significant for body dissatisfaction and reading health magazines was only significant for drive for thinness, which suggests differences between the magazine types. This is in line with Rudman and Verdi's (1993) findings that advertisements differ between fashion and fitness magazines, which would suggest that readers of these types of magazines would interpret the images and messages differently, as well, despite Aubrey's (2010) findings that health magazines also contain appearance frames. An individual's body shape is likely to conflict with societal ideals (Thompson & Stice, 2001; Thompson et al., 1999, 2004). Based on this, the results suggest that the way fashion magazines promote a thin ideal is different from the way health magazines promote the thin ideal.

Stice et al. (1994) found that the more female audiences consume media with high amounts of images featuring the thin ideal, the more likely they are to report characteristics in line with disordered eating. Fashion magazines present images of virtually unattainable body types surrounded by clothing, accessories, and tips on how to look better with make-up and hair tips, focusing on beauty messages (Thompson et al., 1999). This could lead to body dissatisfaction because readers are told how to make themselves look better by changing their physical appearance, which could lead readers to consider themselves not good enough, leading to an increased likelihood of disordered eating. However, health magazines focus on diet, nutrition, and healthy lifestyles. While the images may also be unrealistic and there are still physical appearance frames in health magazines, there are also wellness frames (Aubrey, 2010). It is possible that the wellness frames counter the appearance frames enough to not have a significant effect on body dissatisfaction. However, health magazines do have significant effects on drive for thinness, which is not a harmless variable as it also seems to predict eating disorders (Polivy & Herman, 2002). Health magazines include guides to eating, exercise, better sleep, and the risks of unhealthy lifestyles. These messages could motivate readers to try to lose weight in an effort to have a healthy lifestyle, which could explain why health magazines increase drive for thinness but not body dissatisfaction. However, future studies need to investigate the direction of this relationship, especially because it seems to imply a more complex relationship between magazine consumption and consumer psychology than previous research suggests.

While level of commitment to fashion magazines and health magazines differed in their correlation with body dissatisfaction, level of commitment to fashion magazines and health magazines had similar correlations with drive for thinness. This is an example where the genres of magazines may overlap in their effects, though more information about the research participants would probably illuminate different reasons behind the similar correlations. As previously mentioned, commitment to fashion magazines is positively correlated with body dissatisfaction and drive for thinness, while commitment to health magazines is only positively correlated with drive for thinness. This suggests that there may be different motivations behind women's desires for thinness, which could contribute to different motivations for reading one type of magazine over the other. Fashion magazines are dominated by appearance frames, while health magazines have both health and appearance frames (Aubrey, 2010). Therefore, it is likely that the different messages presented in each magazine may resonate with women who may have different goals for themselves—some goals may be appearance-focused, while others are health-focused. Furthermore, drive for thinness may be a harmful variable in some cases with its link to eating disorders (Polivy & Herman, 2002), but this study's results suggest that the motivation behind an individual's drive for thinness needs to be further investigated. It is possible that women who are highly committed to health magazines already have a health-oriented perspective and lifestyle—they may exercise more and eat healthier than women who are not as highly committed to reading health magazines or than women with any degree of commitment to fashion magazines. Their motivation to read health magazines and to be thin may not be harmful (i.e. their motivations are not driven by body dissatisfaction, but rather they are

driven to have a healthy body composition), which would explain why commitment to health magazines is positively correlated with drive for thinness but not body dissatisfaction. Future studies need to be done to investigate this relationship.

In an effort to better understand how media internalization may influence magazine effects on individuals, the study also looked at SATAQ. The results suggest that internalization works as a moderator of the relationship between reading both types (fashion and health) magazines and body dissatisfaction. According to sociocultural theory (Thompson et al., 1999), media internalization leads to media effects. It is possible that individuals with high levels of internalization are less affected by increased exposure to the media because of a ceiling affect: once individuals have a high level of media internalization, they are not as impacted by media messages because they already have high levels of body dissatisfaction or drive for thinness—their high levels do not allow much room for an increase. On the other hand, individuals with low levels of media internalization are more strongly affected by images in magazines, as they are more vulnerable to body dissatisfaction and drive for thinness. Individuals who start off with lower levels of internalized beliefs are enlightened to magazine portrayals of societal ideals, which would have a more drastic effect on levels of body dissatisfaction and drive for thinness. However, it is also possible that the participants in this study ranged in their levels of impressionability. While the results suggest that there may be a ceiling affect for levels of internalization that lead to media effects, it is also possible that the participants differ in how impressionable they are, which could lead to similar results. Future studies should address this possibility.

Furthermore, body dissatisfaction seems to mediate the relationship of reading the magazines on depression only through an indirect effect. Research has found indirect links between fashion magazines and body shape concerns via beliefs about men's thinness expectation (Thomsen, 2002). This supports the idea that even though there may not be a direct effect of magazine consumption on consumer psychology, there can be other variables to consider that, when present, could foster such a relationship, as is the case in this study. Therefore, it seems that only when accounting for body dissatisfaction is there a relationship between both health and fashion magazines and depression. Though reading either type of magazine does not have a direct effect on consumer depression, it can lead to body dissatisfaction, which can lead to depression.

The main limitation to this study is that it is a correlational one. This does not present data that can lead to draw conclusions about the causal relationships between the variables. However, this study does present grounds upon which to further explore the relationship between health magazines and body dissatisfaction and depression in a more controlled setting, where causal conclusions would be possible. Furthermore, the study is also limited in generalizability. Future studies would need to be more demographically representative. Specifically, the demographic data with respect to the BMI of the sample is not representative of the population in the United States as a whole. While the sample is gathered from a large university in the southwestern region of the United States, future research should include a larger sample to gain a sample with demographics that mirror the general demographic trends in the United States. The sample was mainly gathered from communication courses at the university, which also limits the generalizability of the study's findings—students in communication courses often have some experience with media studies and tend to be more aware of media effects than individuals who do not take media-focused courses. Therefore, this further emphasizes the need for this study's replication with a more representative sample. Finally, this study focuses on magazines, a single vehicle that is probably part of a complex media diet. The findings of this study should be replicated in future research with consideration for other media vehicles that may be part of an individual's media diet.

Despite its limitations, this study also has strengths in its addition to existing research. First, the data shows that there is a difference between the effects of health and fashion magazines. This suggests that the existing literature available on fashion magazine effects may not be applicable to health magazines, creating a need for further research. Today's society has focused on healthy and

active lifestyles with weight loss reality shows, new diet programs coming on the market regularly, and an emphasis in decreasing the United States' high ranking in the world's obesity statistics. It is logical to assume that media focused on health messages, like health magazines, are at least secure in the market if not on the rise. Therefore, media promoting health messages needs to be researched for its effects. Future research should look to see if health-promoting media are positive and helpful in creating a long-term healthy lifestyle or do they create unrealistic expectations for healthy lifestyles with quick-fix diets and intense exercise regimens.

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Author details

Paulina Swiatkowski¹

E-mail: Swiatkowski@hope.edu

ORCID ID: <http://orcid.org/0000-0003-0911-2079>

¹ Department of Communication, Hope College, 257 Columbia Ave, Holland, MI 49423, USA.

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