Swimsuit Models and Social Comparison: Influences on Attitudes toward Tanning

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Because Ultraviolet (UV) radiation is a leading cause of melanoma and other forms of skin cancer, with the American Cancer Society estimating that 68,130 Americans would be diagnosed with melanoma in 2010, it is crucial to understand why women continue to engage in artificial UV tanning behaviors. Through a series of anonymous surveys directed toward college-aged women, this study investigates how exposure to media portrayals of models with varied levels of tanness influence an individual’s satisfaction with her own levels of tanness and likelihood of trying to develop a darker tan through means such as tanning beds and increased sun exposure. The results of the analysis of variance (ANOVA) suggested that women exposed to images of tanned models will be more likely to endorse attractiveness motivations for tanning than will those exposed to images of models with little or no tan.

INTRODUCTION

Few studies have investigated how exposure to mass media images and information relate to desire to tan. Mass media such as television, magazines, newspapers and the Internet could play a role in disseminating public health-oriented skin cancer risk and prevention information (Hay et al., 2009); alternatively, media content could help to create a “tan ideal,” linking cultural standards of beauty to a tanned appearance. Although the relationship, if any, between media exposure and tanning-related attitudes and behaviors is not well understood, numerous studies have provided evidence of a relationship between exposure to media images and audience members’ adoption of idealized body images and development of body image disturbance and eating disordered behaviors (Botta, 1999; Engeln-Maddox, 2005; Harrison & Cantor, 1997; Tiggemann, 2005; Tiggemann & Mccill, 2004). Slade (1994) found that mass media directly influence adolescents’ acceptance of an idealized body image.

As this research has shown, exposure to idealized body shape images in the mass media can influence audience members’ beliefs, attitudes and behaviors related to body shape, particularly among women. Thus, it seems reasonable to predict that media exposure could have a similar effect on audience members’ beliefs, attitudes, and behaviors related to skin tone; that is, if mass media images of beauty include a tanned complexion, regular exposure to those tanned images likely will increase women’s belief that a tan is at least a desirable, if not necessary, component of attractiveness.

The purpose of this study was to investigate how exposure to mass media images promoting a tanned appearance influence perceptions of a tan’s importance to attractiveness and how exposure affects tanning intentions. The study, which is based in social cognitive and social comparison theories, also examined how acceptance of this tan-is-attractive ideal relates to other body image beliefs, such as the thin ideal.

The Risks of Tanning and Unprotected UV Exposure

Ultraviolet (UV) radiation exposure is the most important contributor to the development of skin cancer. The majority of UV exposure occurs through one of two routes: sunbathing or tanning bed use. Robinson, Kim, Rosenbaum, and Ortiz (2008) found that 27% of people surveyed had used indoor tanning beds in the past year. Results from the 2005 National Health Interview Survey, an annual health survey of the U.S. adult population, show that indoor tanning rates are highest among female teenagers or young adults: 20.4% of teenagers or young adults aged 18 to 29 years had used indoor tanning in the previous year (Heckman, Coups, & Manne, 2008). In terms of tanning bed usage, 20% of adolescents reported that they had ever used tanning beds, and 15% of adolescents reported that they currently use them. According to the 2005 Health Information National Trends Study, women aged 18–24 were the most likely group to report using indoor tanning, with 35.8% saying they had used indoor tanning facilities (Choi, Lazovich, Southwell, Forster, Rolnick, & Jackson, 2010).

Gallagher, Spinelli, and Lee (2005) confirmed that there is a positive correlation between sunbathing and the development of melanoma. One study showed that sun exposure increased the risk of melanoma by 55% (Veierod, Weiderpass, Thorn, Hansson, Lund, Armstrong et al., 2003). The use of tanning beds also is another significant factor in the increasing skin cancer rates in the United States (Ries, Harkins, Krapcho et al., 2007); like sunbathers, indoor tanners are at increased risk for melanoma (Gallagher, Spinnelli, & Lee, 2005; Levine, Sorace, Spencer, & Siegel).
Influence of the Mass Media

Few studies have investigated mass media’s impact on values, norms, and aesthetic standards related to tanning. One exception was a study by Cafri et al. (2006); the authors reasoned that motivations to tan would be similar to motivations to pursue thinness, given that the desire for a tan appearance, like the desire for thinness, stems from the attempt to match one’s appearance to the dominant ideal image. Cafri et al. (2006) argued that sociocultural influences, such as the media, peers, and family, affect the formation of tanning-related attitudes. They found that media exposure, peer and family members’ attitudes about tanning, beliefs about the attractiveness of a tan and perceived benefits of tanning for improving one's appearance of physical fitness, and decreasing the effects of acne constituted independent influences on intentions to sunbathe or use indoor tanning salons. Therefore, we argue that the mass media may play a significant role in transmitting norms and values not only in relation to body shape, but also in relation to tanning.

Several researchers have argued that the mass media promote the tanned image as ideal (Jackson & Aiken, 2000). In the 1990s, four studies were conducted to examine skin cancer-related content in print media in the United States and Australia (Chapman, Marks, & King, 1992; Dixon, Dobbinson, Wakefield, Jamsen, & McLeod, 2007; George, Kuskowski, & Schmidt, 1996; Stryker, Solky, & Emmons, 2005). George, Kuskowski, and Schmidt (1996) examined U.S. fashion magazine content between 1983 and 1993. They found some encouraging trends in that the tans models displayed were somewhat lighter during the later years, women were more often portrayed wearing hats, and there were more sunscreen advertisements. However, they also found that “many sunscreen advertisements glorified tanning” (p. 424); models in sunscreen advertisements had darker tans, showed more exposed skin and were less likely to be wearing hats than models who did not appear in sunscreen ads (George et al., 1996). Chapman, Marks, and King (1992) found similar results in a study of Australian fashion magazines published from 1982 to 1991. A study of newspaper coverage related to skin cancer from 1979 to 2003 showed that newspapers paid little attention to skin cancer and provided less information about prevention and detection than about treatment (Stryker, Solky, & Emmons, 2005). Finally, Lee, O’Riordan, Swetter, Derriere, Brooks, and Geller (2006) examined sun care advertising in popular U.S. magazines. The results showed that even though the majority of ads mentioned the product’s Sun Protection Factor (SPF), the ads emphasized other characteristics of the products (such as its use as a moisturizer) rather than sun protection.

The purpose of this study, therefore, was to examine how exposure to mass media images promoting a tanned appearance influences perceptions of the attractiveness of a tan and intentions to tan based on theoretical frameworks of social learning theory and social comparison theory.

Theoretical Foundations

Two key mass communication theories provide the theoretical underpinning for this study: social learning (or social cognitive) theory and social comparison theory. Social learning theory, first articulated by Bandura (1977), helps to explain how and why exposure to mass media may lead people to develop “tan-ideal” beliefs, the motivation to pursue a tan, and an understanding of how to achieve a tanned appearance. The relationship between media exposure and tanning behaviors can be explained through two concepts of social learning theory: prevalence and incentives. Prevalence is defined as the rate of occurrence or frequency of a particular behavior or, in this case, a particular type of appearance. Bandura (1977) argued that the more prevalent a behavior or appearance is, the more likely it is to be modeled, all else remaining equal. Thus, we would argue that if models appearing in mass media are most often tanned, rather than pale, audiences are more likely to want to model a similar appearance.

The other concept, incentives, is defined as the inducements that encourage modeling of behaviors. Most relevant to our concern with media portrayals of tanning are vicarious incentives, which are obtained through observations of others’ experiences either in real life or through the media. That is, people who observe that a model portrayed in the media (or in real life) is rewarded or satisfied due to particular aspects of her body image (e.g., thinness, being tan), the observer expects that he or she will be similarly rewarded or satisfied if he or she obtains or develops those same characteristics. Thus, if tanned models are presented as beautiful, successful, happy, and attractive, those viewing those images are more likely to be motivated to expect to achieve similar rewards if they are tanned.

Another theory frequently used in connection with media impact on appearance ideals is social comparison theory, which argues that people are driven to compare themselves to others, especially on characteristics that are important to them (Festinger, 1954). “Upward comparison,” which is what we normally expect when individuals compare themselves to the attractive or glamorous models in mass media, can lead to the adoption of idealized images and negative impact on the viewer’s self-esteem. The theory argues that self-evaluation is based on comparisons to others and that these comparisons depend more on how the individual judges herself in relation to others on particular attributes, such as attractiveness, rather than on objective circumstances (Wood, 1989). Through social comparison, people gather information about high-value attributes, social expectations, and norms (Wood, 1989).

Many empirical studies have revealed that social comparison, particularly upward social comparison, increases negative assessments of one’s body image (Faith,
Leone, & Allison, 1997; Martin & Kennedy, 1993; Stormer & Thompson, 1996; Thompson, Coover, & Stormer, 1999). College women who engaged in social comparisons about appearance tended to be more dissatisfied with their body image (Faith, Leone, & Allison, 1997; Stormer & Thompson, 1996; Thompson, Coover, & Stormer, 1999). Heinberg and Thompson (1992) found that there were significant relationships between the tendency to compare oneself to media celebrities and body dissatisfaction, drive for thinness, and eating disorders. We argue that the same kinds of effects may occur in relation to women’s exposure to tanned images from mass media; exposure to images of attractive models with moderate or darker tans likely will increase desire for a tanned appearance.

HYPOTHESES

H1: Women exposed to images of tanned models will be more likely to endorse attractiveness motivations for tanning than will those exposed to images of models with little or no tan.

H2: Women exposed to images of tanned models will report lower body satisfaction than will those exposed to images of models with little or no tan.

H3: Women exposed to images of tanned models will report greater intentions to use indoor tanning salons than will those exposed to images of models with little or no tan.

H4: Women exposed to images of tanned models will report greater intentions to sunbathe to get a tan than will those exposed to images of models with little or no tan.

METHODS

Study Stimulus Design

First, we selected approximately 130 images of women wearing two-piece swimsuits, with the majority of the photos chosen from online photo galleries of Miss America contestants from the pageant’s swimsuit competitions and others selected from online swimsuit catalogs. In addition, 25 images of men wearing standard-length or short swim trunks were selected from online swimsuit catalogs or other photo galleries. An effort was made to choose models reflecting varying tan levels. Four trained coders then categorized each image as representing light, moderate, or dark tans, rating their tan level based on a scale that ranged from 1 (very light skin) to 9 (very dark skin). The five female photographs most consistently rated in each category (light, moderate, or dark) were selected for inclusion, along with five images of male models.

After the models were selected, Adobe Photoshop was used to manipulate the tan level of each model in order to create a lightly tanned version, a moderately tanned version, and a darkly tanned version. These images were used to create a separate PowerPoint for light, medium, and dark models, each showing the same 15 female models and the same five male models. Although the tan level of the majority of models in each file was consistent, each file also included five models (three female and two male) with a different tan level. A fourth PowerPoint file was created for presentation to the control group; this file showed 20 landscape images selected from the National Geographic website.

Data Collection Procedures

Undergraduate student participants were recruited to participate in an anonymous study, with participants receiving class credit for participation. Participants completed an online questionnaire that included measures of their attitudes toward tanning and body satisfaction and behaviors related to dieting, exercise, and tanning. Each student then attended a lab session where they were randomly assigned to one of the four conditions (light, moderate or dark tan or control). Participants viewing the swimsuit images were asked to rate each model in terms of attractiveness, physical fitness, and “sexiness.” Participants in the fourth condition were asked to rate each landscape image in terms of attractiveness, environment health of the location, and how much the participant would like to visit that location. Then participants were instructed to move to the next screen to complete the rest of the online survey, again answering questions about their attitudes toward tanning and body image, as well as questions about intentions to sunbathe or use a tanning salon to achieve a darker tan. The data were downloaded into Excel for data cleaning to ensure that we had pre- and post-test data for each participant. The cleaned data then were transferred to SPSS for analysis.

Dependent Variables

Attractiveness motivation for tanning. Six items from the General Attractiveness factor of Cafri et al.’s (2006) Physical Appearance Reasons for Tanning Scale were used to create this scale, which was used to test Hypothesis 1. The scale included statements such as “I tan because it makes me more attractive,” and “People think I am more attractive when I have a tan.” Reliability analyses for the six items produced a Cronbach’s alphas of .968 for the pre-test and .965 for the post-test. The same six items were used to create attractiveness motivation scales from the pre-test and post-test data. These two scales then were used to create a change score, which was used in the analysis to provide a control for pre-test scale scores.
Body satisfaction. Six items from the Body Esteem Scale for Adults and Adolescents (Mendelson, White & Mendelson, 2001) were used to create the body satisfaction measure, which was used to test Hypothesis 2. The scale included items such as “Other people consider me good looking,” and “I like what I see when I look in the mirror.” Reliability analyses for the six items produced a Cronbach’s alphas of .892 for the pre-test and .905 for the post-test. The same six items were used to create body satisfaction scales from the pre-test and post-test data. These two scales then were used to create a change score, which was used in the analysis to provide a control for pre-test scale scores.

Intentions to sunbathe. The Intentions to Sunbathe measures were used to create a change score (post-test score minus pre-test score), which was used in the analysis to provide a control for pre-test sunbathing intentions scores.

Intentions to indoor tan. In both surveys, participants were asked to estimate how many times they planned to use an indoor tanning facility in the next 3 months, the next 6 months, and the next 12 months. Their answers were summed to create overall Intentions to Indoor Tan measures for both pre- and post-test data. These two measures then were used to create a change score, which was used in the analysis to provide a control for pre-test indoor tanning intentions scores.

RESULTS

In all, 121 women completed the pre-test, the rating of images, and the post-test. Table 1 shows the number of women in each of the four groups (light/no tan, moderate tan, dark tan, and control) and their mean scores on the pre-test scales for attractiveness motivation for tanning and body satisfaction and the pre-test measures of intentions to sunbathe and engage in indoor tanning. Analysis of variance showed that there were no significant differences between groups in scores on either scale or intentions to sunbathe or engage in indoor tanning.

Table 1. Mean Pre-test Scores for Attractiveness Motivation for Tanning, Body Satisfaction, and Intentions to Indoor Tan and Sunbathe

<table>
<thead>
<tr>
<th>Group (N)</th>
<th>Attractiveness Motivation for Tanning Mean (SD)</th>
<th>Body Satisfaction Mean (SD)</th>
<th>Intentions to Sunbathe Mean (SD)</th>
<th>Intentions to Indoor Tan Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light/no tan (32)</td>
<td>3.08 (1.45)</td>
<td>3.53 (.71)</td>
<td>85.04 (138.54)</td>
<td>10.19 (35.83)</td>
</tr>
<tr>
<td>Moderate tan (28)</td>
<td>2.89 (1.31)</td>
<td>3.26 (.73)</td>
<td>63.93 (130.27)</td>
<td>20.72 (64.11)</td>
</tr>
<tr>
<td>Dark tan (41)</td>
<td>3.02 (1.26)</td>
<td>3.12 (.85)</td>
<td>51.04 (106.50)</td>
<td>10.73 (31.05)</td>
</tr>
<tr>
<td>Control (20)</td>
<td>3.47 (1.19)</td>
<td>3.21 (.61)</td>
<td>26.88 (17.05)</td>
<td>13.45 (36.32)</td>
</tr>
</tbody>
</table>

Overall, the mean score for the pre-test attractiveness motivation for tanning scale was 3.08 on a 1–5 scale, indicating that participants did tend to endorse attractiveness as a primary reason for seeking a tan. The mean Body Satisfaction score was 3.28 on a 1–5 scale, suggesting that these women felt relatively confident about their personal appearance.

To test Hypothesis 1, we conducted an ANOVA for the attractiveness motivation for tanning scale change score, with tan level of the images to which participants were exposed as the independent variable. The results supported Hypothesis 1 [F (3, 117) = 2.79, p. <.05]. Although the largest difference between change scores was between the light/no tan group and the moderate tan group, post-hoc least significance difference (LSD) analysis demonstrated that mean change scores for women who viewed the lightest tan images were significantly different only from scores for women exposed to the most darkly tanned images. Mean change scores and standard deviations are shown in Table 2. ANOVAs were also conducted to test Hypotheses 2–4; however, the results did not support any of these hypotheses.

Table 2. Change Scores for Attractiveness Motivation for Tanning by Tan Level of Images Viewed

<table>
<thead>
<tr>
<th>Tan Level (N)</th>
<th>Mean change score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light/no tan (32)</td>
<td>-.234</td>
<td>.787</td>
</tr>
<tr>
<td>Moderate tan (28)</td>
<td>.179</td>
<td>.339</td>
</tr>
<tr>
<td>Dark tan (41)</td>
<td>.094</td>
<td>.687</td>
</tr>
<tr>
<td>Control (20)</td>
<td>.108</td>
<td>.380</td>
</tr>
</tbody>
</table>

ANOVA: F (3, 117) = 2.79, p. <.05.
DISCUSSION AND CONCLUSIONS

The purpose of this study was to examine whether exposure to models displaying different tan levels would affect women’s reported attractiveness motivations for tanning, their body satisfaction, and their intentions to sunbathe and/or engage in indoor tanning in the next year. The analysis showed that Hypothesis 1, predicting that viewing models with darker tans would increase attractiveness motivations for tanning, was supported, with women exposed to the light/no tan models reporting a decline in the endorsement of statements linking attractiveness to a tanned appearance. Women exposed to the moderate and dark tanned models reported increased endorsement of those statements. Post-hoc analyses showed a significant difference only between women who viewed the lightest images and those viewing the darkly tanned images. Hypothesis 2, predicting that viewing images of the darker tanned models would decrease body satisfaction; hypothesis 3, predicting that women exposed to images of darker tanned models would be more likely to engage in indoor tanning behavior; and hypothesis 4, predicting that women exposed to darker tanned models would be more likely to engage in outdoor tanning behaviors, were not supported. This suggests that exposure to models displaying different tan levels had no significant impact on women’s body satisfaction, intentions to sunbathe in the future, or intentions to engage in indoor tanning.

As predicted, women exposed to the more darkly tanned models were more likely, in the post-test, to endorse general attractiveness motivations for tanning; in other words, they were more likely to agree with statements noting that they felt more attractive or believed they would look better when they had a tan. Interestingly, analysis of the ratings of the three different sets of models showed that participants who viewed the tanned versions of the images did not rate them as more attractive or “sexier” than the less tanned images. This may reflect the fact that all of the female models used in the study were Miss America contestants and, as such, would generally have been regarded as beautiful young women. Thus, participants may have focused less on the women’s tan levels and more on their other characteristics, making them less likely to engage in upward comparison with the women in relation to their tans.

There were no significant differences in the change scores for body satisfaction across any of the four groups, meaning that for the women who participated in our study, exposure to images of 15 women attractive enough to have won state-level Miss America pageants does not appear to have led to significant upward comparison. This also might help to explain why participants did not report significant changes in their intentions to engage in sunbathing or indoor tanning behaviors: exposure to the models apparently did not engender a sense that our participants needed to change their own behaviors to help them achieve the ideals represented by the models shown in the study slides.

The results did confirm that exposure to tanned images encourages women to view having a tan as an important characteristic of attractiveness. This finding is consistent with the results of numerous studies (Cafri et al., 2006; Cafri, Thompson, Jacobson & Hillhouse, 2009; Hill, White, Marks, Theobald, & Borland, 1992; Miller, Ashton, Mc Hoskey, & Gimbel, 1990). In particular, this study’s results are consistent with the suggestion of Cafri et al. (2006) that exposure to mass media images of tanned models may be one contributor to the widespread acceptance of the “tan ideal.”

The results of this study suggest that if mass media consistently portrayed women with little or no tan as beautiful and successful, the effect might be to undermine the “tan ideal” and encourage young women to engage in more sun protective behaviors. We found that participants exposed to the light/no tan models not only were less likely to endorse attractiveness motivations for tanning, compared to women exposed to more darkly tanned models, but in addition, the change scores in the light/no tan group were negative, meaning that women who had been exposed to images of beautiful and untanned women declined in their own acceptance of attractiveness motivations for tanning. It is critical that we continue to investigate how mass media portray tanning in relation to attractiveness and the safety or riskiness of tanning behaviors and the impacts of those portrayals on audience beliefs and behaviors related to tanning.

REFERENCES


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ENDNOTE

1 Both male and female undergraduates participated in the study. However, we used only female’s data for this research because there were too few male participants for analysis.