The Effects of Self-Esteem and Body Image on Artificial Tanning Behavior

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Abstract

The purpose of this study is to investigate how individuals’ body image and self-esteem influence the frequency of artificial tanning. These factors were chosen based on previous tanning research studies. Participants were classified as tanners and non-tanners based on reported tanning behavior. Other variables such as tanning knowledge, satisfaction with complexion, and education were also collected and analyzed and compared with tanner and non-tanner status. This information was gathered via a packet of questionnaires. We predicted that lower levels of self-esteem and body image would be related to higher frequency of artificial tanning behavior. Stepwise multiple regression analysis was conducted to determine results.

Introduction

Skin cancer prevention has become an important public health issue over the last 35 years (Prentice-Dunn, Jones, & Floyd, 1997). The incidence and prevalence of skin cancer surpasses every other type of human cancer and it is rising at a shocking rate (Zeller, Lazovich, Forster, & Widome, 2006). Recent studies have focused on the increasing link between skin cancer and indoor artificial tanning salon use, a behavior that many people report engaging in despite reporting knowledge of documented adverse effects (Dennis, Lowe, & Snetselaar, 2009). Skin cancer incidence has a strong behavioral dynamic and exposure to ultraviolet radiation has been accepted as the primary risk factor for most skin cancer cases (American Cancer Society, 2006).

The numbers of frequent tanners is growing. According to the Indoor Tanning Association (2009), there are significantly more people visiting tanning salons today than when they were popularized 25 years ago. Today about ten percent of people living in the United States use indoor tanning beds every year. In fact, the indoor tanning business has been one of the fastest growing industries in the United States, with $5 billion in estimated annual revenue (Indoor Tanning Association, 2009).
The research supporting the link between skin cancer and artificial tanning is growing, as some of the myths about possible benefits to artificial tanning are being debunked. One of the common misconceptions about artificial tanning is the idea of the safe base tan. But multiple studies have shown this to be incorrect. Immediate pigment darkening shows no photo protective properties to resist UV-induced skin redness or DNA damage (Honigsmann, 2002). Another misconception about the benefits of indoor tanning is that it is an effective way to acquire vitamin D. However, most tanning beds emanate primarily UVA rays, which are relatively ineffective in stimulating the production of Vitamin D (Gilchrest, 2008).

As this information becomes more widespread, the results of such studies become more readily available to the general public. Some indoor tanning salons are even required to inform their patrons about skin cancer risk. Young tanners are made aware of these risks, yet many think they are unsubstantial. However, with evidence showing that tanning bed exposure before age 30 years increases the risk of melanoma by 75%, the IARC placed tanning beds in the highest risk class, alongside other Group I carcinogens including cigarettes, arsenic, and asbestos (El Ghissassi, Baan, & Straif, 2009).

As individuals report continuing to tan, despite demonstrating knowledge of the risks of doing so, there must be other factors maintaining this behavior. Past research has shown that attitudes that individuals hold about themselves and risky behaviors, such as artificial tanning, have a greater impact on the frequency of those behaviors, rather than knowledge of risks of those behaviors (Dennis, Lowe, & Snetselaar, 2009). A study done by Dennis and colleagues (2009) showed that young people knew the risks of damage by artificial tanning beds, yet continued to tan despite the knowledge. In fact, they found that in many cases, more knowledge about risks was correlated with a greater emphasis on the importance of a tan (Dennis, Lowe, &
Studies have shown that frequent users of tanning salons are motivated in great part by a desire to increase their perceived attractiveness (Amir, Wright, Kernohan, & Hart, 2000) and that indoor tanning is related to increased confidence in appearance and feelings of attractiveness (Cafri, Thompson, Jacobsen, & Hillhouse, 2009). In fact, studies have also gone so far as to say that the chief motivation for many tanners is the belief that indoor tanning enhances appearance.

In their 2009 study, Dennis, Lowe, & Snetselaar found that college students reported feeling better with a tan (due to perceived attractiveness, friends’ perception of attractiveness due to a tan, or perceived unattractiveness without a tan) and this was the primary reason reported for using tanning salons. Indoor tanning is socially reinforced as young people usually perceive tanned individuals as more attractive and desirable than their pale counterparts (Broadstock, Borland, & Gason, 1992).

In a 2010 study titled “Global Self-Esteem, Appearance Satisfaction, and Self-Reported Dieting in Early Adolescence,” Barker and Bornstein found that in the life and the mind of adolescents, self-esteem and satisfaction with his/her appearance are closely related (Barker, Bornstein, 2010). This is relevant to the issue of artificial tanning because if self-esteem is related to appearance and perceived attractiveness in appearance is tied to the presence of a tan, the three variables may be intertwined.

Determining motivating factors for the use of artificial tanning (such as self-esteem and perceived physical benefits) can lead to the discovery of effective intervention and prevention techniques. Once these motivating factors are recognized, rather than concentrate on educating tanners about the risks associated with artificial tanning, the focus of such intervention and prevention techniques can shift to attempting to alter their attitudes towards tanning and their
beliefs about its benefits.

A 2006 study proposes that interventions for reducing skin cancer risk should focus not only on decreasing favorable attitudes towards tanning but also on increasing favorable attitudes toward healthier alternatives to tanning salon use and also that if we increase our understanding about the multiple perceived functions of tanning salon use, as well as attitudes toward healthier alternatives, it will lead us to a better identification of ways that this behavior and its health-threatening consequences can be reduced (Danoff-Burg, & Mosher, 2006).

The purpose of this study is to investigate how individuals’ perception of self, such as body image, self-esteem, and self-worth influence the frequency of artificial tanning. These factors were chosen based on previous research about risk factors for artificial tanning. Previous studies have focused on how attitudes towards tanning affect tanning practices (Dennis, Lowe, & Snetselaar, 2009), and how tanning behavior is influenced by peers (Broadstock, Borland, & Gason, 1992). This study focuses primarily on attitudes towards the self and how it affects artificial tanning behavior.

A study done by Demko, Borawski, Debanne, Cooper, and Stange (2003) found that some significant risk factors for indoor tanning use by adolescents include substance use and dieting. Self-perception may be linked to substance use and dieting, which is linked in this study to tanning behavior by adolescents. We are determined to find if this third factor (self-perception) is the link to both of these behaviors.

A group (N=60) of college-aged students in the area (including both those who are enrolled, and those who are not) was recruited using the psychology participant pool as well as local tanning establishments. After providing informed consent, participants were given a packet of questionnaires derived from the existing literature (i.e. Hillhouse, et al, 1999) that determined
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tanner’ versus ‘non-tanner’ status, frequency of tanning, knowledge of tanning risks, body image, self-esteem, and perceived self-worth. Basic demographics such as age, gender, marital status, and education level were also collected. We predicted that lower levels of self-perception would be related to higher frequency of artificial tanning.

Methods

A series of four questionnaires were given to each participant. The first of these was a basic demographics questionnaire. This gathered data such as age and gender, and education level, which was categorized as (a) high school, (b) some college, (c) bachelor’s degree, and (d) graduate degree. Also, frequency of tanning was recorded as (a) 0 times per year, (b) 1-10 times per year, (c) 10-20 times per year, (d) 20-30 times per year, and (e) 30+ times per year. Length of tanning was also categorized as (a) less than 1 month, (b) 1-4 months, (c) 4-8 months, (d) 8-12 months, (e) 1-3 years, and (f) more than 3 years. The last categorization was satisfaction with complexion. These were classified as (a) completely satisfied, (b) somewhat satisfied, (c) neutral, (d) somewhat dissatisfied, and (e) completely dissatisfied. We also collected data on marital status, which were (a) married, (b) single, (c) divorced, and (d) widowed.

The second instrument was a tanning knowledge questionnaire we created based on research about the risks of artificial tanning bed use. It consisted of 12 multiple-choice questions. Questions ranged in topic from skin cancer statistics and symptoms of skin cancer, to facts and statistics about indoor tanning usage. Reliability and validity of this questionnaire are contingent on existing literature about tanning risks.

The third questionnaire was the Rosenberg self-esteem scale (Rosenberg, 1989). This survey is one of the most widely used self-esteem scales in social science research because of its reliability and validity. It gathers knowledge about the individual’s perception of self in terms of
worth, attitude towards self, and belief in self. Each question is answered with a likert scale based on individual perception (strongly agree, agree, disagree, strongly disagree). It is scored with a points system for each question. Each question is awarded zero, one, two, or three points, for a total score range of 0-30.

The final questionnaire given to participants was the Body Shape Questionnaire (BSQ)-34. This survey gathered information about the participants’ view of and attitude towards their bodies. It consisted of 34 questions, each with a likert scale of possible answers (never, rarely, sometimes, often, very often, always) with each answer receiving 1-6 points for a total score range of 34-204.

Participants

There were 60 participants in this study ranging from age 18-25. There were 35 females and 25 males. In terms of education, 6.7 percent had a high school education, 83.3 percent had ‘some college’ and 10 percent had a bachelor’s degree. Tanning frequency was broken down into average number of times per year: 41.7 percent of participants reported using artificial tanning beds on average of 0 times per year, 20 percent reported tanning 1-10 times per year, 15 percent reported 10-20 uses per year, 8.3 percent reported 20-30 times per year, and 15 percent reported over 30 times per year.

Tanning length was also broken down into amount of time participants have used artificial tanning beds: 36.7 percent of participants reported not using artificial tanning beds, 21.7 percent reported using them for less than a month, 10 percent reported 1-4 months of use, 1.7 percent reported 8-12 months of use, 16.7 percent reported 1-3 years of use, and 13.3 percent reported using artificial tanning beds for over 3 years.

When asked about complexion satisfaction, participants were offered five responses:
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completely satisfied (30 percent of responses), somewhat satisfied (35 percent of responses), neutral (18.3 percent of responses), somewhat dissatisfied (16.7 percent of responses), and completely dissatisfied (0 percent of responses). 93.3 percent of participants are single and 6.7 percent are married.

Results

The results of answers to the knowledge questionnaire and complexion satisfaction were compared can be found in table 1, as seen below. Results indicate no significant difference in scores between individuals with tanner vs. non-tanner status.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Tan status</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSQ-34 score</td>
<td>Non-tanners</td>
<td>68.76</td>
<td>30.63</td>
<td>.20</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>Tanners</td>
<td>72.33</td>
<td>28.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tan Knowledge</td>
<td>Non-tanners</td>
<td>3.32</td>
<td>1.21</td>
<td>.17</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>Tanners</td>
<td>3.17</td>
<td>1.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Esteem</td>
<td>Non-tanners</td>
<td>17.52</td>
<td>1.61</td>
<td>2.93</td>
<td>.09</td>
</tr>
<tr>
<td></td>
<td>Tanners</td>
<td>16.53</td>
<td>2.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexion Satisfaction</td>
<td>Non-tanners</td>
<td>1.96</td>
<td>1.14</td>
<td>2.41</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td>Tanners</td>
<td>2.40</td>
<td>.97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple stepwise regression analysis was conducted to determine the extent to which self-esteem, body satisfaction, satisfaction with complexion, and knowledge about tanning predicted the frequency of tanning behavior. Results indicated that the only significant predictor was participants’ reported level of self-esteem. Individual’s level of self-esteem predicted
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frequency of tanning. Body image, complexion satisfaction, and tanning knowledge were not significant predictors of frequency of tanning or length of tanning bed usage.

Table 2

<table>
<thead>
<tr>
<th>Step 1</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
<th>P</th>
<th>R square change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>5.94</td>
<td>1.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-0.27</td>
<td>0.09</td>
<td>-0.35</td>
<td>0.006</td>
<td>0.124</td>
</tr>
</tbody>
</table>

In analyzing variance, we see that self-esteem is the only significant figure, and accounts for 12.4% of variation in artificial tanning frequency, as seen in table 2 above. This means that approximately 12.4% of the reason people choose to engage in artificial tanning behavior is due to reported levels of self-esteem. We see that the β value is negative, indicating a negative correlation between self-esteem and tanning frequency.

Discussion

The results of this study support our hypothesis in that we found self-esteem to be a significant predictor of tanning bed usage. Self-esteem and artificial tanning behavior were found to be negatively correlated, meaning that the lower the individual’s self-esteem, the more likely he/she is to engage in more frequent artificial tanning behavior.

We found that the self-report measures we gathered (self-esteem, body image, complexion satisfaction, tanning knowledge) did not differ significantly based on tanner vs. non-tanner status. We also found that tanners and non-tanners did not differ significantly on the
tanning knowledge questionnaire. This means that whether participants knew the risks of tanning or not, this did not predict frequency or length of tanning bed usage. These results fall in line with existing literature by Dennis, Lowe, & Snetselaar that posits that tanning knowledge alone is not a significant predictor of tanning behavior, nor a deterrent of such behavior (Dennis, Lowe, & Snetselaar, 2009).

Since perceived attractiveness is often a component of overall self-esteem, the results of our study could also support claims by Amir, Wright, Kernohan, & Hart (2000) who found that frequent tanners are greatly influenced to tan based on a desire to increase perceived attractiveness. The same premise applies to a study done by Cafri, Thompson, Jacobsen, & Hillhouse (2009) who found that indoor tanners relate tanning to feelings of attractiveness and increased confidence in appearance, both also components of self-esteem.

This study has a number of limitations. One limitation could be the number of tanners versus non-tanners. Most of our participants reported never having tanned or tanning very little. If more of our participants were tanners and used tanning beds more frequently, we may get a better picture of tanning predictability. The study is also limited by geographic location. It is possible that tanning may be more of a priority/trend in parts of the country where participants are more likely to be wearing swimsuits or other attire that shows off their bodies. Also, the study may be limited by education. Most of our participants either had a bachelor’s degree or were in the process of obtaining one.

A surprise we encountered was that there was no correlation whatsoever between knowledge of tanning risks and tanning behavior. One reason tanning knowledge did not predict tanning behavior could be because the majority of people surveyed did not know the answers to the questions in the knowledge questionnaire. In fact, out of 12 questions, the average number
correct was 3.4. Knowledge about the dangers of using tanning beds and the skin cancer statistics associated with them is not widespread. Perhaps if this knowledge were more widespread, it would be a predictor for tanning bed usage.

Another interesting result was that body image and complexion satisfaction were not correlated with self-esteem. This suggests that there are more than just physical elements to self-esteem, which may suggest that tanning is used for more than just its physical benefits. Future studies could focus on the link between body image and self-esteem and their relation to artificial tanning behavior.
References


