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The Role of Body Image and Depression in Tanning Behaviors and Attitudes

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In the current study, we examined correlates of tanning behaviors and attitudes. Undergraduates ($N = 277$; 53% female; average age = 19.27 years) completed measures of appearance orientation and appearance evaluation from the Multidimensional Body-Self Relations Questionnaire, the Center for Epidemiological Studies Depression Scale, and questions addressing tanning behaviors and attitudes. Women were more likely to engage in indoor tanning and perceived greater susceptibility to photoaging than men. Body image and depression were associated with tanning behaviors and attitudes. Results suggest that psychological factors are important motivators of both indoor and outdoor tanning, although each has unique correlates. Implications for reducing risky tanning behaviors are discussed.

Keywords: tanning behaviors, tanning attitudes, body image, depression, college students

Skin cancer rates, including both non-melanoma and melanoma cancers, have recently increased in the US.^{1,2} A critical factor in skin cancer development is exposure to ultraviolet (UV) radiation,³ which may be acquired through natural sunlight (eg, outdoor sunbathing) or indoor tanning booths. There is growing concern about skin cancer among young people, as melanoma is the second most common cancer among individuals ages 15–29.⁴ Further, compared to other adult age groups, individuals ages 18–29 report the highest number of risk behaviors for skin cancer,⁵ and many individuals ages 18–30 report positive attitudes toward a tanned appearance.⁶ It is important to understand why young people willingly engage in behaviors that raise their risk for skin cancer in spite of their knowledge of negative health consequences.⁷ Given that attitudes toward tanning behaviors are associated with these behaviors,^{8,9} it is also critical to understand correlates of tanning attitudes. In the current study, we examined factors related to college students' tanning behaviors and attitudes, including sex, body image, and depression.

The present study contributes to the literature in several ways. First, we focused on both indoor tanning and outdoor sunbathing. Both behaviors involve UV exposure, which raises the risk for skin cancer,³ and are undertaken in order to get tanned skin.¹⁰ However, these behaviors differ in their cost, accessibility, and level of privacy,¹⁰ suggesting the importance of examining them separately. Second, we examined the relationships between two aspects of body image and tanning behaviors and attitudes. Prior research has focused on the links between appearance orientation (or similar constructs) and tanning behaviors and attitudes.^{11,12,13} We know of no published work that has simultaneously considered evaluative aspects of body image, such as appearance evaluation and appearance orientation. It is likely that concern with and investment in one's looks (ie, appearance orientation) as well as evaluations of one's appearance (ie, appearance evaluation) may motivate individuals to tan and relate to their attitudes toward tanning. Third, we considered whether depressive symptoms relate to tanning behaviors and attitudes, using a different measure of depression than that found in prior research examining similar links.¹⁴

TANNING BEHAVIORS

Indoor tanning is prevalent among young people, with those ages 18–29 reporting the highest rate of indoor tanning

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compared to other adult age groups.⁵ Recent yearly prevalence rates of indoor tanning for young adults range from 20.2%–27%,^{5,6} and for college students in particular, from approximately 33%–47.7%.^{7,9,14} There are less data on outdoor sunbathing, although a couple of studies examining college students suggest prevalence rates may be high: 75.5% during summer months,⁸ and among female students, 86.7% in the last 6 months.¹⁰

Because women are more concerned with their appearance and have poorer evaluations of their appearance than men,^{15,16} women may engage in more tanning behaviors. Tanning may be used as an appearance management behavior; women may tan to improve what they perceive as a flawed appearance. Several studies show that more college women than men report indoor tanning behaviors.^{9,14,17} There is less research on sex differences in outdoor sunbathing behavior in college students, but research addressing adolescents indicates that girls report more sunbathing behaviors than do boys.^{11,18}

In addition to sex, appearance-related factors are considered to be critical motivators of tanning behaviors.^{10,18} Individuals who are more oriented toward their appearance may be more likely to engage in tanning behaviors. Given that these individuals are more invested in their looks, they may be more willing to engage in appearance-management behaviors that they believe will lead to an improved appearance. For example, among adult sunbathers, those who are high on appearance motivation (and obsessive-compulsive tendencies) are more likely to engage in indoor tanning and spend more time in the sun.¹² Similarly, adolescents who place greater value on their appearance sunbathe outdoors more frequently.¹¹ However, other work shows no association between appearance orientation and outdoor sunbathing.¹³

In addition, individuals with less positive evaluations of their appearance may be more likely to engage in indoor tanning and less likely to engage in outdoor sunbathing. Indoor tanning is more private than outdoor sunbathing,¹⁰ and thus may be appealing to those who are uncomfortable with exposing their bodies, yet want to improve their appearance through tanning. Individuals who have less positive evaluations of their appearance may be uncomfortable wearing bathing suits in public settings where others may see their bodies,^{10,11} and thus may be less likely to engage in outdoor sunbathing. Research on adolescents generally supports these predictions. Adolescents who are less satisfied with aspects of their appearance and personality tan indoors more often.¹⁸ In contrast, boys who are more satisfied with aspects of their appearance and personality and who have more positive physical self-concepts sunbathe outdoors more often^{11,18}; research on girls presents mixed results regarding the links between outdoor tanning behavior and perceptions of appearance and personality.^{11,18}

Another important factor that may motivate tanning behaviors is depression, as UV light has physiological effects that reinforce tanning behavior.¹⁹ Experimental research has

shown that after exposure to UV light, individuals report feeling more relaxed and less tense.²⁰ Also, when questioned about reasons for tanning, many individuals cite feelings of relaxation,^{7,8} warmth, and comfort.¹⁸ The rewarding effects of UV light may be stronger for individuals who have more depressive symptoms. These individuals may be especially motivated to repeat behaviors that bring pleasure and elevate their moods. Indoor tanning in particular may be appealing to those with higher depressive symptoms because it can be done alone without the social aspect that may accompany outdoor sunbathing.¹⁰ Prior research examining college students shows that depression is not associated with indoor tanning.^{14,21} In the current study, we build on this work by using a different measure of depressive symptoms and examining its link with both indoor tanning and outdoor sunbathing.

TANNING ATTITUDES

Attitudes toward tanning are important to investigate because of their link to tanning behaviors.^{8,9} Given that tanned individuals are typically seen as more attractive than individuals without tans,^{22,23} positive social consequences must be weighed against potential negative health outcomes.³ Thus, we focused on both perceived concerns and benefits of tanning, including perceived susceptibility to photoaging, and perceived rewards of sunbathing and of being tan. We examined sex, body image, and depression as correlates of these attitudes.

Women may perceive greater vulnerability to photoaging than men. There are numerous advertisements for anti-aging products, many of which are intended for women. These advertisements suggest that women's youthful appearance is vulnerable, and must be protected against signs of aging. Also, to the extent that women and girls are aware that their more frequent tanning behaviors place them at risk for health problems,^{3,14,18} their attitudes toward photoaging may reflect their behavior. Previous research on adolescents and college students supports this prediction.^{8,18} Women may perceive more rewards of being tan because they tend to be more oriented toward their appearance and have a poorer evaluation of their appearance than do men.^{15,16} Thus, women may view tanning in a more positive way because it is an appearance-enhancing tool. Previous findings are mixed, however, with some work showing no sex differences in positive attitudes toward a tan appearance among college students,⁸ and among adults, more positive attitudes among men.²⁴

Body image, including appearance orientation and appearance evaluation, may be associated with tanning attitudes. Individuals who are more oriented toward their appearance may be more worried about appearance-related issues, and thus, perceive more susceptibility to photoaging. In support of this point, appearance orientation is linked to more concern about skin cancer and photoaging among college students.¹³ However, individuals who are more oriented toward

their appearance may also have more positive attitudes toward sunbathing and being tan. Given that these individuals are more concerned with and invested in their looks, they may have more favorable attitudes toward behaviors that improve appearance (ie, tanning). For example, Hillhouse and colleagues⁹ found an association between appearance motivation and positive attitudes toward using tanning salons. In addition, individuals with less positive views of their appearance may have less positive feelings about other aspects of their body, including their body's ability to resist photoaging. They may also see more rewards in tanning, as this behavior may help improve what they perceive as a less attractive appearance.

Although we know of no prior studies that have focused specifically on depression and tanning attitudes, individuals with higher levels of depressive symptoms may perceive greater susceptibility to photoaging, as depressive symptoms are linked to lower perceived control.²⁵ Specifically, these individuals may feel more hopeless and dejected, and thus, more vulnerable to potential dangers, including skin damage from the sun. They may also perceive more rewards of sunbathing and of being tan given that tanning can provide immediate benefits to their mood.²⁰

SUMMARY AND HYPOTHESES

In sum, we examined the role of sex, body image, and depression in tanning behaviors and attitudes among college students, given the high prevalence of tanning behaviors in this group.^{8,14} Based on previous research and theory, we proposed the following hypotheses:

1. Women will engage in more tanning behaviors than men.
2. Individuals who are more oriented toward their appearance and who have higher depressive symptoms will be more likely to engage in indoor tanning and outdoor sunbathing. Individuals who have less positive evaluations of their appearance will be more likely to engage in indoor tanning and less likely to engage in outdoor sunbathing.
3. Women will perceive more susceptibility to photoaging and more rewards of sunbathing and of being tan than men.
4. Individuals who are more oriented toward their appearance, have less positive evaluations of their appearance, and have higher depressive symptoms will perceive more susceptibility to photoaging and more rewards of sunbathing and of being tan.

METHOD

Participants and Procedure

Participants ($N = 277$) are students from a small, non-residential college near a large metropolitan area in the

northeastern United States. We recruited students in early Fall semester by posting flyers around campus, making announcements in classes (after sending an email to the faculty list serve and receiving instructor approval for visiting class), and sending emails to the student list serve. Individuals ages 18–25 were invited to participate because we were interested in students' experiences during emerging adulthood, a developmental period marked by exploration in multiple domains (eg, risky health behaviors).²⁶ After giving informed consent, participants completed a survey in a classroom setting and were compensated \$20 for their time. This study was approved by the school's IRB.

Participants' average age was 19.27 ($SD = 1.35$). Fifty three percent of students were female, and 43% identified as European American/White, 33% as Asian American/Asian, 16% as African American/Black, 2% as Latino American/Hispanic, and 6% as Other.

Measures

Skin Type

Participants were asked to report what would happen to their skin if they went out in the midday sun for an hour during the summer without using protection after not being in the sun for a few months.²⁷ Response options include: (1) burn easily, and the burn would not turn into a tan; (2) burn easily, and then the burn might turn a light tan; (3) burn moderately, and then turn a light tan; (4) burn minimally, and then turn a moderate brown tan; (5) probably not burn, but rather develop a dark brown tan; and (6) not burn, I am dark-skinned naturally.

Body Image

We used two subscales from the Multidimensional Body-Self Relations Questionnaire²⁸ to measure body image. Appearance orientation is a 12-item subscale that assesses the extent to which individuals are cognitively and behaviorally invested in their appearance (eg, "Before going out, I usually spend a lot of time getting ready"). Appearance evaluation is a 7-item subscale that measures individuals' evaluation of their overall appearance (eg, "I like the way my clothes fit me"). Response options to each subscale are on a 5-point scale (1 = *definitely disagree* to 5 = *definitely agree*). Scores are calculated by averaging respondents' answers to each item. Reliabilities on each subscale were satisfactory (appearance orientation, $\alpha = .83$; appearance evaluation, $\alpha = .86$).

Depression

We used the Center for Epidemiological Studies Depression Scale²⁹ to measure depression. This is a widely used measure of depressive symptoms acceptable for use in community populations. It contains 20 items about feelings and behaviors during the past week (eg, "I had trouble keeping my mind on what I was doing"). Participants respond to each

TABLE 1
Means, Standard Deviations, and Correlations among All Analytic Variables

	M	SD	<i>r</i>								
			1	2	3	4	5	6	7	8	
1. Skin type	3.77	1.48	—								
2. Appearance orientation	3.41	0.66	.02	—							
3. Appearance evaluation	3.60	0.78	.09	.02	—						
4. Depression	35.77	10.80	-.03	.04	-.31***	—					
5. Indoor tanning behavior	0.42	1.06	-.06	.17**	-.08	.15*	—				
6. Outdoor sunbathing behavior	1.60	1.90	-.16**	.13*	.11 [^]	.02	.27***	—			
7. Perceived susceptibility to photoaging	2.57	0.79	-.16**	.22***	-.23***	.22***	.21***	.18**	—		
8. Perceived rewards of sunbathing and of being tan	2.50	1.16	-.20***	.22***	-.02	.18**	.39***	.50***	.26***	—	

Note. Due to missing data, sample size ranged from $N = 265$ – 277 .

[^] $p < .07$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

item on a scale ranging from 1 = *rarely or none of the time* (less than 1 day) to 4 = *most or all of the time* (5–7 days). Total scores are calculated by summing responses on each item. Reliability was satisfactory ($\alpha = .91$).

Tanning Behaviors

We asked participants two questions about tanning behavior, modified from Mahler and colleagues' research.²⁷ To assess indoor tanning behavior, we asked participants how often they tan in tanning booths. To measure outdoor sunbathing behavior, we asked participants how often they sunbathe outdoors when the weather is warm. Response options to both questions were on a 7-point scale including: 0 = *never*, 1 = *once per year*, 2 = *a few times per year*, 3 = *once per month*, 4 = *once per week*, 5 = *a few times per week*, and 6 = *every day*.

Tanning Attitudes

We measured tanning attitudes with two scales. Perceived susceptibility to photoaging²⁷ is a 7-item scale that assesses perceptions of premature skin aging due to UV exposure (eg, "The possibility of getting wrinkles and age spots worries me"). Perceived rewards of sunbathing and of being tan²⁷ is a 5-item scale that measures perceived benefits of sunbathing and having a tan appearance (eg, "I feel more attractive when I have a tan"). Response choices for both scales range from 1 = *strongly disagree* to 5 = *strongly agree*, with total scores representing the average of items. Reliability for both scales was adequate (perceived susceptibility to photoaging, $\alpha = .73$; perceived rewards of sunbathing and of being tan, $\alpha = .92$).

RESULTS

Descriptive Analyses

Mean scores on all analytic variables are presented in Table 1. Participants identified their skin types as: burn easily, would not turn into a tan (8%); burn easily, might turn a light tan (13%); burn moderately, turn a light tan (23%); burn minimally, turn a moderate brown tan (20%), probably not burn, develop a dark brown tan (23%); and not burn, dark-skinned naturally (13%). Seventeen percent of participants reported engaging in indoor tanning behavior at least once per year, and 50% reported engaging in outdoor sunbathing behavior at least once per year.

Sex Differences in Tanning Behaviors

To examine the first hypothesis regarding sex differences in tanning behaviors, we performed chi-squares. The indoor tanning and outdoor sunbathing variables were skewed, indicating that the frequency of these behaviors was somewhat low in this sample. Thus, we recoded these variables into those who had ever engaged in these behaviors and those who never had. Women (22%) were more likely to report indoor tanning behavior than were men (11%), $\chi^2(1, 277) = 6.68, p < .05$. However, there were no sex differences in outdoor sunbathing behavior, $\chi^2(1, 269) = 1.36, p = .24$. These results partially support our first hypothesis.

Associations among Body Image, Depression, and Tanning Behaviors

To test our second hypothesis regarding the associations among body image, depression, and tanning behaviors, we performed correlations (see Table 1). Individuals who were

TABLE 2
Logistic Regressions on Tanning Behaviors

Variable	B	SE B	Wald χ^2	Odds ratios
Indoor tanning				
Step 1				
Sex	1.06	.36	8.65**	2.89
Skin type	-.01	.12	.01	.99
European American/White	.96	.36	6.99**	2.61
Step 2				
Sex	.77	.38	4.17*	2.16
Skin type	.01	.13	.00	1.01
European American/White	1.01	.37	7.43**	2.76
Appearance orientation	.56	.27	4.33*	1.75
Appearance evaluation	-.07	.22	.12	.93
Depression	.04	.02	5.55*	1.04
Outdoor sunbathing				
Step 1				
Sex	.73	.29	6.19*	2.07
Skin type	.01	.10	.00	1.01
European American/White	1.95	.31	38.59***	7.04
Step 2				
Sex	.53	.31	2.94	1.69
Skin type	-.02	.11	.03	.98
European American/White	2.15	.34	40.89***	8.58
Appearance orientation	.72	.23	9.54**	2.06
Appearance evaluation	.43	.20	4.47*	1.54
Depression	.02	.01	1.04	1.02

Note. Due to missing data, sample size ranged from $N = 260$ – 268 .

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

more oriented toward their appearance engaged in indoor tanning and outdoor sunbathing more frequently, and individuals with more depressive symptoms engaged in more indoor tanning.

We were also interested in understanding the most important factor(s) related to tanning behaviors considering all measures of body image and depression together. Thus, in addition to correlations, we performed two logistic regressions. In Step 1, we entered sex (1 = men, 2 = women); skin type (centered at its mean); and race/ethnicity as controls. Given that skin type and race/ethnicity may be confounded, we included both variables as controls in order to determine their unique associations with the dependent variables. We coded race/ethnicity so that European American/White students could be compared to individuals in all other racial/ethnic groups, given prior research showing that White high school students report higher prevalence and frequency of indoor tanning than Black and Hispanic students.³⁰ In Step 2, we entered body image (appearance orientation, appearance evaluation), and depression centered at their means.

In the logistic regression with indoor tanning as the outcome variable, the full model was significant, $\chi^2(6) = 26.88$, $p < .001$ (see Table 2). Sex, race/ethnicity, appearance orientation, and depression were significantly related to indoor tanning. Women and European American/White students were more likely to engage in indoor tanning than were

men and their peers of other racial/ethnic backgrounds, respectively. Further, for every 1-point increase in appearance orientation, the odds of engaging in indoor tanning increased by 75%. For every 1-point increase in depression, the odds of engaging in indoor tanning increased by 4%.

In the logistic regression examining outdoor sunbathing, the full model was also significant, $\chi^2(6) = 68.58$, $p < .001$ (see Table 2). Race/ethnicity, appearance orientation, and appearance evaluation were significantly related to outdoor sunbathing. European American/White students were more likely to engage in outdoor sunbathing than their peers of other racial/ethnic backgrounds. In addition, for every 1-point increase in appearance orientation and appearance evaluation, the odds of engaging in outdoor sunbathing increased by 106% and 54%, respectively. These results partially support our second hypothesis.

Sex Differences in Tanning Attitudes

To test our third hypothesis regarding sex differences in tanning attitudes, we performed t -tests. In support of our expectations, women ($M = 2.77$, $SD = 0.85$) perceived greater susceptibility to photoaging than men ($M = 2.34$, $SD = 0.63$, $t = 4.77$, $p < .001$). However, contrary to our hypothesis, there were no sex differences in perceived rewards of

TABLE 3
Standardized Betas in Regression Models on Tanning Attitudes

	Perceived susceptibility to photoaging	Perceived rewards of sunbathing/being tan
Step 1		
Sex	.26***	.03
Skin type	-.14*	-.05
European American/White	-.02	.41***
Step 2		
Sex	.18**	-.06
Skin type	-.11	-.05
European American/White	.01	.43***
Appearance orientation	.19**	.30***
Appearance evaluation	-.18**	.01
Depression	.13*	.18**
Step 1 R^2	.09***	.18***
Step 2 R^2	.18***	.29***
ΔR^2 (1-2)	.09***	.11***

Note. Due to missing data, sample size ranged from $N = 263$ – 265 .
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

sunbathing and of being tan (women: $M = 2.48$, $SD = 1.22$, men: $M = 2.53$, $SD = 1.10$, $t = 0.33$, $p = .74$).

Associations among Body Image, Depression, and Tanning Attitudes

We tested our fourth hypothesis by performing correlations among body image, depression, and tanning attitudes (see Table 1). Individuals who were more oriented toward their appearance and who had more depressive symptoms perceived greater susceptibility to photoaging and more rewards of sunbathing and of being tan. Also, individuals with less positive evaluations of their appearance perceived more susceptibility to photoaging.

Next, we performed two linear regressions entering the same independent variables as we did in the logistic regressions (see Table 3). In these analyses, tanning attitudes were the outcomes. In the model on perceived susceptibility to photoaging, Step 2 added a significant amount of variance, explaining 18% of the variance. In Step 2, sex, appearance orientation, appearance evaluation, and depression were significantly associated with perceived susceptibility to photoaging. Women, individuals who were more oriented toward their appearance, individuals with less positive evaluations of their appearance, and individuals with higher depressive symptoms perceived greater susceptibility to photoaging.

In the model examining perceived rewards of sunbathing and of being tan, Step 2 added a significant amount of variance, explaining 29% of the variance (see Table 3). In this step, race/ethnicity, appearance orientation, and depression were significantly related to perceived rewards of sunbathing and of being tan. European American/White students, indi-

viduals who were more oriented toward their appearance, and individuals with higher depressive symptoms perceived greater rewards of sunbathing and of being tan. These results partially support our fourth hypothesis.

COMMENT

Tanning behaviors are common among emerging adults, yet represent a significant health threat over time. Given that sun exposure (whether it be due to indoor tanning or outdoor sunbathing) does not lead to immediate life-threatening consequences, it is likely that young people will continue to engage in tanning. Understanding factors associated with these behaviors has the potential to contribute to applied efforts to reduce risky tanning behaviors. The present study extends past research by considering a variety of potential correlates of tanning behaviors and attitudes separately and in concert: sex, body image (appearance orientation and appearance evaluation), and depression.

The prevalence rates of indoor tanning and outdoor sunbathing were substantial, but not as high as those reported in other studies on college students^{7, 8, 9, 10, 14} Previous research demonstrates that peer-related factors may play an important role in tanning behaviors and attitudes.^{11, 31, 32} Students in the current study are enrolled at a non-residential college where they may have less contact with peers outside of the classroom; less contact with peers may be linked to less tanning behavior. For example, participants may not be as aware of peer tanning attitudes and behaviors.³¹ Also, non-residential students may spend more time commuting, caring for family members, and working at off-campus locations as compared to students who walk to or live on campus,³³ suggesting that they may have less time for tanning.

Our first hypothesis was that women would engage in more tanning behaviors than would men. This hypothesis was partially supported in that women were more likely to engage in indoor tanning behaviors than were men, but both men and women participated in comparable levels of outdoor sunbathing. Women's greater orientation toward appearance and poorer evaluation of appearance^{15, 16} may motivate them to pursue indoor tanning when the weather is not conducive to outdoor sunbathing. In contrast, men may value a tan appearance, but not enough to pursue it when the weather does not provide the appropriate temperature and amount of sunlight. This finding may also be due to the likelihood that tanning salons market their services primarily to women and may be conceptualized as "feminine" venues, similar to many diet centers.

Our second hypothesis was that individuals with higher appearance orientation and more depressive symptoms would be more likely to engage in tanning behaviors than would their peers who were less concerned about their appearance and less depressed. This hypothesis was predominantly supported. Individuals who were more oriented toward

their appearance were more likely to participate in both indoor tanning and outdoor sunbathing, similar to prior work.¹² It is intuitive that those who value their appearance will engage in behaviors (ie, tanning) construed as conducive to achieving a cultural ideal of beauty. Depressive symptoms were also associated with indoor tanning. It appears that individuals may be unknowingly “self-medicating” with UV rays to achieve feelings of warmth, relaxation, and comfort;^{18,20} these feelings may also ease depressive symptoms. We also examined the relationship between depression and outdoor sunbathing, and contrary to expectations, found a nonsignificant association. Individuals do not appear to be pursuing outdoor sunbathing to ease depressive symptoms. Perhaps depressive symptoms may inhibit individuals from wanting to spend time outdoors in sunbathing attire. Instead, the privacy offered by indoor tanning¹⁰ may be desirable for those experiencing depressive symptoms.

Also as part of our second hypothesis, we examined relationships between appearance evaluation and tanning behaviors. Appearance evaluation was not linked to indoor tanning, but individuals with more positive evaluations of their appearance were more likely to engage in outdoor sunbathing. Similar findings have been shown in adolescent boys, with mixed results in adolescent girls.^{11,18} The current study extends this work by illustrating that this relationship exists in both male and female college students. Perhaps students who are more comfortable with their bodies are more willing to wear sunbathing attire outdoors where others may be present.¹⁰ Sunbathing outdoors may further enhance students’ evaluation of their looks, as it may allow them to acquire tanner skin.

Our third hypothesis was that women would perceive both more risks and rewards of tanning than would men. In support of our expectations, we found that women perceived greater susceptibility to photoaging. These concerns may reflect sociocultural norms that equate aging with unattractiveness for women.³⁴ Women may be internalizing these messages and becoming concerned that their looks are vulnerable to physical signs of aging. Surprisingly, there were no sex differences in perceived rewards of sunbathing and of being tan. This finding may be due, in part, to increased sexualization of men in the media and presentation of slender, muscular men as the “ideal.”³⁵ Future studies should build on recent work on perceptions of tan women²² to determine if tan skin is becoming part of the cultural ideal for men.

Consistent with our fourth hypothesis, appearance orientation and depressive symptoms were associated with tanning attitudes. Individuals with higher appearance orientation and depressive symptoms perceived both greater risks of photoaging and more rewards of sunbathing and of being tan. This undoubtedly leaves these individuals in a bit of a bind—both desiring the outcome of being tan perhaps for aesthetic reasons and to encourage relaxation and positive affect, but also realistically acknowledging the risks associated with tanning behaviors. We also found that individuals

with less positive evaluations of their appearance perceived greater vulnerability to photoaging. These individuals may feel that they are already not as attractive as they would like to be and worry that they are vulnerable to becoming even less attractive across time.

It is also worth noting that European American/White students were more likely to engage in indoor tanning and outdoor sunbathing, similar to prior work,³⁰ and perceived more rewards of sunbathing and of being tan than individuals in other racial/ethnic groups. These effects are independent of skin type, suggesting that cultural factors may be more important in tanning behaviors and attitudes. Perhaps cultural norms of attractiveness among European American/White students encourage and value a tan appearance. Given that European American/White students are more likely to have lighter skin, they may engage in more tanning behavior in order to achieve this ideal.

Limitations

The findings from this study should be tempered with an understanding of its limitations. Skin type was used as a continuous variable, although it is possible that there may be qualitative distinctions between categories. Some tanning questions consisted of single items; using multiple items may have enhanced the psychometric properties of these measures. The sample employed in this study was relatively large, but somewhat homogenous in terms of age and educational status. However, we were interested in exploring an emerging adult sample due to the high rate of risky behaviors during this developmental period.²⁶ Future research could build on this study by examining an adolescent sample and following participants longitudinally in order to better understand both developmental trends and the impact of age on tanning behaviors. The cross-sectional nature of this study allows for only speculation about the direction of effects. For example, the extent to which individuals are oriented toward their appearance and have positive evaluations of their appearance may lead to tanning behaviors. It could also be argued that outdoor sunbathing in a social situation may lead to social comparison processes that increase individuals’ concerns about their appearance, or that becoming tanner may improve appearance evaluation. Longitudinal research may help to clarify the direction of these findings.

Conclusions and Implications

Given the potentially cancerous consequences of not reducing risky tanning behaviors among young people, research that examines factors associated with tanning behaviors is critical. Our findings suggest that sex is less relevant to tanning behaviors and attitudes than we anticipated. Although women were more likely to engage in indoor tanning and perceived greater susceptibility to photoaging, men and women had similar rates of outdoor sunbathing and attitudes toward sunbathing and being tan. Appearance orientation and

depression were important correlates of tanning behaviors and attitudes, with appearance evaluation being less relevant than we anticipated. Results suggest that appearance concerns and mood are important motivators to tan, although indoor and outdoor tanning behaviors may have unique correlates.

Although time outdoors, particularly time that involves physical activity, and the vitamin D benefits of sunlight exposure are noteworthy, the risks associated with UV exposure are also significant. Health care providers should survey patients during exams about their use of sunscreen as they currently survey patients about other health risks including alcohol and tobacco use. The present findings suggest the complex motives involved in tanning behaviors; appearance concerns and depression may be related to individuals' pursuit of tanning and may require additional professional attention. Fortunately, there appears to be growing recognition of the importance of "safe sun behaviors." The Obama administration's Patient Protection and Affordable Care Act of 2010 imposed a 10% tax on indoor tanning.^{36,37} Although repeal of this tax has been debated, the American Academy of Dermatology Association has stood by the importance of the tax as an indicator to the public that tanning is a risky behavior with potentially deadly effects.³⁷ Our growing understanding of the psychology of tanning will likely bolster efforts already in place to reduce unsafe tanning behaviors.

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