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Peer Crowd Identification and Indoor Artificial UV Tanning Behavioral Tendencies

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Abstract

In this study, the relation between peer crowd identification and indoor tanning behavioral tendencies was examined. Participants were 174 undergraduate students at a large university in the USA. Results indicated peer crowd identification was significantly associated with indoor artificial UV tanning behavioral tendencies (attitudes, normative beliefs, past year use and intentions) independent of gender and skin type. Participants who identified with the popular peer crowd were at the greatest risk for indoor tanning UV exposure while identification with the brain crowd was protective against such behavior. The findings are discussed in terms of implications for future skin cancer intervention efforts.

Keywords

artificial tanning; attitudes; peer crowd; skin cancer; tanning salons

NEARLY half of new cancers diagnosed each year are skin cancers (American Cancer Society, 2006a) and rates of melanoma, the deadliest and most difficult skin cancer to treat, have been steadily increasing since 1981. Risk factors include phenotypic characteristics such as light skin, eye, and hair color, a large number of moles, and the tendency to freckle and/or burn after sun exposure (Armstrong & Krickler, 2001). Despite the importance of these constitutional risk factors, skin cancer incidence has a strong behavioral component and exposure to ultraviolet radiation has been identified as the primary risk factor for most skin cancer cases (American Cancer Society, 2006b). Among the intentional UV exposure behaviors that case-control epidemiological studies have linked to skin cancer is the use of tanning beds/lamps (Gallagher, Spinelli, & Lee, 2005).

Traditional efforts in the medical community to prevent skin cancer have focused on educating those with a high-risk phenotype. However, the increasing popularity of indoor UV tanning has placed individuals with a low risk phenotype at risk because of excessive UV exposure. Reported rates of current tanning bed usage are approximately 30 to 50 percent in young adults with the majority of users being females (Brooks et al., 2006; Hillhouse, Turrisi, Holwiski, & McVeigh, 1999). Consistent with this high usage, skin cancer incidence rates are rising in young women. Thus, despite the previous strategy of

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targeting those at a phenotypic risk, future prevention efforts may prove more efficacious with a focus on behavioral and lifestyle variables.

There have been two primary behavioral and lifestyle frameworks used in skin cancer prevention. The first is a health focused message that incorporates perceptions of UV exposure risks and a focus on increasing skin cancer knowledge. These efforts have met with varied success (e.g. Kristjansson, Helgason, Mansson-Brahme, Widlund-Ivarson, & Ullen, 2003). The second framework focuses on changing perceptions about the relationship between appearance and UV risk behaviors. According to this perspective, young adults perceive the immediate benefit of intentional UV exposure, getting a tanned appearance, as outweighing the potential health risks. Individuals with tans are perceived as more attractive than their pale counterparts and strong social pressures to conform to these cosmetic ideals exist (Broadstock, Borland, & Gason, 1992). These interventions emphasize the appearance damaging effect of UV exposure (e.g. premature skin wrinkling, skin aging) and have produced promising results (e.g. Hillhouse & Turrisi, 2002).

The evidence supporting appearance messages indicates that indoor UV tanning is highly motivated by social influences through the desire to appear attractive (Hillhouse et al., 1999; Leary & Jones, 1993) as well as social normative beliefs about tanning of friends and other reference groups, such as the media (Jackson & Aiken, 2006). However, little is known about how the peer environment, reported as influential in many other health behaviors, influences these behaviors. Researchers have organized the adolescent peer environment into reputation based groups defined by shared attributes such as behaviors, appearance, or attitudes termed peer crowds (Brown, 1990). Some of the commonly reported crowds include those associated with high social status (populars), athletic participation (athletes), academic achievement (brains), participating in the 'partying' culture (partiers), and those who do not belong to any certain group (regulars) (Ashmore, Del Boca, & Beebe, 2002; Mackey & La Greca, 2007). Identification with these peer crowds has been linked to risky health behaviors (Ashmore et al., 2002; La Greca, Prinstein, & Fetter, 2001; Mackey & La Greca, 2007). These crowds and the potential roles they might play in motivating UV risk behaviors have not been examined.

Peer crowds are delineated from each other based on characteristics including dress and grooming style (Brown, 1990). While some crowds are known by a lack of concern of physical appearance to the point of appearing 'unkempt' (brains) other crowds are identified primarily as being very image conscious (Mackey & La Greca, 2007; Stapleton, Hillhouse, Bruner, & Turrisi, 2005). These image conscious crowds include those perceived as having high social status (populars) and those who are athletically oriented. There appear to be social pressures in these crowds to have an attractive appearance consistent with the desired group image such that deviations from this image may have damaging implication to an individual's sense of identity. Young people who identify with image conscious crowds are often limited in ways to increase their attractiveness, with their primary alternatives being tanning, exercising, wearing attractive/trendy clothing, etc. Thus, because of crowd identification, young people may be likely to indoor tan for appearance enhancement. This study will examine the relationship between peer crowd identification and indoor tanning behavioral tendencies.

Method

Participants and procedure

Participants were 126 females and 48 males undergraduates recruited from an introductory health course at a northeastern US university and offered extra credit for participation (mean age = 19.83, SD = 1.28).

The racial background was White/Caucasian (85.7%), Asian (5.1%), African American (2.3%), multiracial (2.9%), other (2.9%), and Native American (0.6%). School classifications were 21.1 percent freshman, 26.9 percent sophomores, 30.3 percent juniors, and 20.0 percent seniors.

An online survey was administered during fall and winter months, considered peak indoor tanning seasons. All procedures followed APA ethical guidelines and were approved by the university Institutional Review Board.

Measures

Indoor tanning behavioral tendencies—Four items assessed the number of indoor tanning sessions in the previous four seasons (e.g. Please give your best estimate of how many times you indoor tanned last winter (December to February)). Response options were 0 (*0 times*), 1 (*1–3 times*), 2 (*4–6 times*), etc. to 9 (*more than 24 times*). The items were summed to create a measure of past year usage (coefficient alpha = .86). Participants were also asked to report indoor tanning intentions in the next year on a seven-point scale anchored with 0 (*definitely do not intend*) and 6 (*definitely do intend*).

Tanning attitudes and normative beliefs—Five items were used to measure attitudes toward tanning on a Likert-type scale anchored with 0 (*strongly disagree*) and 4 (*strongly agree*) (e.g. ‘A tan makes me more attractive’). The items were averaged with higher numbers reflecting more positive attitudes (coefficient alpha = .90). One item assessed normative beliefs about friends’ indoor tanning (e.g. ‘What percentage of your closest friends use indoor tanning devices like tanning beds?’). This item utilized an 11 point scale (coded as 0–10) with percentages ranging from 0–100 percent in increments of 10 percent.

Peer crowd identification—The following crowds were identified from previous literature—populars, regulars, athletes, and brains (La Greca et al., 2001; Mackey & La Greca, 2007) and a fifth group, partiers, was added to reflect a crowd that may be unique to the college social environment. Previous work (Ashmore et al., 2002; Stapleton et al., 2005) with undergraduate students has verified the presence of these crowds on different college campuses. Peer crowd identification was measured with an item drawn from the literature (Miller et al., 2003) that asked participants to indicate ‘How well does each type fit you?’ Response options were: *never heard of this group* (0), *not at all* (0), *a little* (1), *somewhat* (2), and *very well* (3).

Demographic variables—The distribution of Fitzpatrick’s (1988) skin type was: I = 11.1 percent, II = 23.1 percent, III = 32.7 percent, IV = 21.2 percent, V = 9.0 percent, VI = 1.5 percent. Individuals who indicated a skin type of V and VI were excluded from the analysis because of a low phenotypic risk and low indoor tanning behaviors, resulting in the 174 sample size.

Results

UV risk behavioral tendencies

The mean score on the last year use variable for the entire sample was 3.97 (SD = 6.58) which corresponds to average use of approximately 10–12 past year indoor tanning sessions. Among the 42.9 percent of the sample who reported indoor tanning at least once in the past year, the mean score on the last year use variable was 9.28 (SD = 7.21) which corresponds to average use of more than 24 past year indoor tanning sessions. The mean value of the normative belief measure was 4.38 (SD = 2.96) indicating participants perceived an average of approximately 40 percent of friends using indoor tanning. The mean value for the attitude

variable was moderately positive (2.75 (SD = .90)). The mean value for intention to indoor tan in the next year was moderately low (1.98 (SD = 2.30)) and there was large variability in the measure.

Peer crowd identification and UV risk behavioral tendencies

The results revealed 10.9 percent of the sample identified very well with the popular peer crowd, 9.1 percent with the regular crowd, 16.6 percent with the athletic crowd, 9.7 percent with the brain crowd, and 26.9 percent with the partier crowd.

A series of hierarchical regression analyses were conducted to assess the association of peer crowd identification with indoor tanning outcomes (Table 1). Both gender and skin type have been reported as related to UV risk behavior and were entered into the model before peer identification. Gender was significantly associated with all outcomes. Females perceived more indoor tanning among friends, held more positive indoor tanning attitudes, reported more indoor tanning in the past year, and had higher intention to use compared to males. After controlling for gender, skin type added significant variance to attitudes and last year use. Participants with darker skin types held more favorable attitudes toward indoor tanning and reported more past year use compared to participants with lighter skin type.

Peer crowd identifications were the last variables included in the model and added significant variance to all indoor tanning outcomes. Identification with the popular peer crowd was significantly associated with increases in normative beliefs about friends' indoor tanning usage, tanning attitudes, last year usage, and intention to use. Identification with the regular crowd was associated with a decrease in normative beliefs about friends' indoor tanning. Identification with the brain crowd was associated with decreased normative beliefs about perception of friends' usage, decreased tanning attitudes, less last year usage, and lower intentions to use. Significant relationships were not found between athlete crowd or partier crowd identification and outcomes.

Discussion

The current paradigm in the skin cancer prevention field is to utilize behavioral messages when designing prevention programs. This study was designed to examine an aspect of the social environment, peer crowds, which may be an important motivator of UV risk behaviors. Identification with the popular peer crowd is associated with an increase in normative beliefs about friends' indoor UV tanning, more favorable attitudes toward tanning, increased use of indoor UV tanning in the past year, and increased intentions to engage in indoor UV tanning. These relationships were expected based on previous work indicating individuals in the popular group placed a great deal of importance on their physical appearance (La Greca et al., 2001; Mackey & La Greca, 2007; Stapleton et al., 2005). Thus, for the popular group it seems that tanning may be perceived as an effective way to achieve this desired state of attractiveness. In contrast, identification with the brain crowd was protective against all of the risky UV attitudes and behaviors. This finding was expected based on previous reports that describe members of this group as disinterested in their own personal appearance (La Greca et al., 2001; Stapleton et al., 2005).

Although individuals in both the popular and athletic crowds have been described as image conscious, those in the popular crowd seemed more likely to intentionally tan for appearance enhancement. It is possible individuals who identify as athletes may be likely to use other methods, such as exercise, to maintain attractiveness. It is also possible that what is perceived as physically attractive and desirable varies between different peer groups. The non-relationship between partiers and the UV risk variables was also not entirely unexpected

because these individuals may be identified by shared behaviors (e.g. ‘hanging out’ and partying) as opposed a shared group image.

These results may have importance for the design of interventions that utilize an appearance message intended to discourage UV exposure for cosmetic reasons in high-risk crowds. Members of the popular crowd are likely to place importance on physical appearance and might be resistant to messages if indoor tanning is viewed as important to their attractiveness. Also, members of these crowds may be likely to have friends that hold similar beliefs, making behavior change particularly difficult given the social pressures. On the other hand, an appearance message may be more powerful if members of the popular crowd can be convinced appearance damage may occur. In either of these cases, providing information about alternatives for an attractive appearance (e.g. use of make-up, exercise, clothing styles, or sunless tanning) may be a successful intervention approach.

Current findings may also be used to inform intervention tailoring. When designing interventions, utilizing indirect methods such as peers may be the most effective way to alter behaviors that are socially reinforced (Gielen & McDonald, 2002). An effective peer program might entail training members of a peer crowd to discuss the appearance/health damaging effect of UV exposure and convey the benefits of alternative behaviors such as sunless tanning to others of the same crowd. There has been little utilization of peers in skin cancer prevention programs. By matching the message medium and an important motivating source of the behavior, more effective programs could be designed.

There are some methodological limitations that should be highlighted. The generalizability of these findings may be limited based upon the small sample size and other sample characteristics (i.e. limited to one university in one geographic region, and a primarily Caucasian population). However, the demographics seemed to be representative of the campus and matched national representative samples (e.g. Lazovich et al., 2004). The data were self-report and may be subject to recall bias and/or socially desirable responding if participants responded based upon how they felt someone of their identified peer crowd should respond. We focused on one aspect of UV risk, indoor tanning, which we felt was the most relevant given the college sample and the geographical location. Future studies should examine whether these relationships hold for other UV risk behaviors such as sunbathing or sun protection. Finally, while a few recent studies on peer crowd affiliation have reported on college social crowds, most studies have examined these relationships in younger adolescents based upon the theoretical framework that these groups cease to be influential as adolescents get older (Brown, 1990; Newman & Newman, 1976). Thus, the current findings may replicate in younger samples and the relationships could be even more powerful.

In conclusion, this research identifies a population of young adults, those identify with the popular peer crowd, who are likely to hold risky UV behavioral tendencies. In this crowd, engagement in indoor tanning may be perceived as a way to increase their physical attractiveness, which may be an important part of their social identity. Skin cancer prevention efforts may be made more effective and efficient by targeting members of this crowd and tailoring the message and the medium of delivery to reflect values of this crowd.

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Biographies

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Table 1

Peer crowd identification and indoor tanning behavioral tendencies

<i>Outcomes</i>	<i>Normative beliefs</i>		<i>Tanning attitudes</i>		<i>Last year use</i>		<i>Intention to use</i>	
	β	R^2 change	β	R^2 change	β	R^2 change	β	R^2 change
Gender	2.47***	.14	.36***	.03	4.09***	.08	1.84**	.13
Skin type	.26	.01	.16*	.04	.98*	.02	.32	.02
Peer crowds		.13		.14		.08		.06
Populars	.86***		.31***		1.61**		.48*	
Regulars	-.56**		.01		-.15		.20	
Athletes	-.04		-.08		-.26		-.07	
Brain	-.66**		-.25***		-1.81***		-.51**	
Partiers	.16		.06		-.66		-.06	
Total R^2	.28		.21		.19		.22	
Model F	9.05***		6.18***		5.41***		6.54***	

Males coded as 0, females coded as 1

 $p < .001$ **
 $p < .01$ *
 $p < .05$