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College Students' Cognitive Rationalizations for Tanning Bed Use: An Exploratory Study

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Tanning bed use is a popular behavior among American youth¹ despite evidence of increased risk of melanoma.² Current interventions to reduce tanning bed use³ have not been very successful with resistant tanners, characterized by engagement in tanning bed use for appearance enhancement despite being knowledgeable about harmful effects of their behavior.

This dichotomy between unfavorable attitudinal beliefs (tanning bed use is harmful) and continued tanning bed use can possibly be explained by cognitive dissonance theory.⁴ According to cognitive dissonance theory, individuals seek consistency among their cognitions. Inconsistent cognitions create psychological discomfort that motivates people to alter their cognitions to restore consistency.⁴

Prior research demonstrates that individuals often rationalize their existing inconsistent beliefs to decrease dissonance. Therefore, in the case of tanning bed use, people's continued use may be supported by cognitive rationalizations justifying tanning bed use despite awareness of risks.

To identify these rationalizations, we adapted an available measure of cognitive rationalization⁵ to tanning bed use (original measure explored cognitive rationalizations related to smoking) and conducted a survey with a sample of college students. The aim of this article is to examine the distribution of the item responses to examine how relevant these rationalizations are to our population of interest, ie, current tanning bed users.

Methods

After receiving human subjects' approval from the university institutional review board, we surveyed 587 undergraduate students in introductory communication courses at a large

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university in the northeastern United States. Of the original 587 participants, students older than 25 years were excluded (n = 36) to retain sample homogeneity.

Of the 551 participants included, 218 participants had ever used tanning beds (39.6%). Given that we wanted to examine cognitive rationalizations used by former and current tanners, we utilized the data from these 218 participants to examine the cognitive rationalization scale. Among this group of ever tanners, 87.6% were women (n=191). The mean (SD) age of participants was 19.98 (1.13) years (age range, 18–24 years), and about 78.4% of participants identified themselves as white, 9.6% Asian, and 7.8% Hispanic/Latino (other groups, <2% each).

We adapted the cognitive rationalization scale developed by Oakes and colleagues⁵ to tanning bed use. The scale consisted of a common stem for all items, “Tanning bed use can make me ill, but...,” and was measured with 16 Likert-type items, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). We used 16 of the 18 items supporting the following 3 a priori factors (we altered the factor names for relevance to tanning bed use) (Table): factor 1, skeptical rationalizations (ie, beliefs indicating tanning bed users do not believe medical evidence about tanning bed use and disease); factor 2, worth-it rationalizations (ie, beliefs indicating tanning bed users consider tanning bed use a worthwhile activity despite potential hazards); and factor 3, danger ubiquity rationalizations (ie, beliefs normalizing the dangers of tanning bed use because of the ubiquity of risks).

Results

We examined the endorsement (percentage of current tanners who chose “agree” or “strongly agree” responses) of each item included in our cognitive rationalization scale (Table). We used a cutoff point of 10% and deleted the items that were not endorsed by at least 10% of the participants. Item endorsement clearly reflects the high endorsement of danger ubiquity rationalizations that normalize the dangers of tanning bed use because of the ubiquity of risks.

Comment

This exploratory study aimed to examine item response distribution of an adapted cognitive rationalization scale by tanning bed users. The results indicated that current tanners endorse danger ubiquity rationalizations most strongly, but other rationalizations are endorsed moderately, suggesting the need for more qualitative work to uncover other rationalizations.

Strong motivations for tanning bed use also include peer norms, parental norms, and other sociocultural influences to use tanning beds,⁶ but these motivations were not reflected in the adapted cognitive rationalization scale. More in-depth qualitative work may uncover other rationalizations that tanning bed users may offer when they are made aware that they continue to use tanning beds despite awareness of risks associated with usage.

The results presented here should be interpreted with caution given the small sample size, cross-sectional data, and the lack of demographic background data. We adapted a preexisting cognitive rationalization scale (on smoking behavior) to tanning bed use. Given that these 2

behaviors are very different in context, and endorsement is moderate, a more complete measure would need to include more strongly endorsed rationalizations, possibly through rich focus group data.

References

1. Demierre MF. Time for the national legislation of indoor tanning to protect minors. *Arch Dermatol*. 2003; 139(4):520–524. [PubMed: 12707101]
2. Lazovich D, Vogel RI, Berwick M, Weinstock MA, Anderson KE, Warshaw EM. Indoor tanning and risk of melanoma: a case-control study in a highly exposed population. *Cancer Epidemiol Biomarkers Prev*. 2010; 19(6):1557–1568. [PubMed: 20507845]
3. Stapleton J, Turrisi R, Hillhouse J, Robinson JK, Abar B. A comparison of the efficacy of an appearance-focused skin cancer intervention within indoor tanner subgroups identified by latent profile analysis. *J Behav Med*. 2010; 33(3):181–190. [PubMed: 20058183]
4. Festinger, L. *A Theory of Cognitive Dissonance*. Evanston, IL: Row; 1957.
5. Oakes W, Chapman S, Borland R, Balmford J, Trotter L. “Bulletproof skeptics in life’s jungle”: which self-exempting beliefs about smoking most predict lack of progression towards quitting? *Prev Med*. 2004; 39(4):776–782. [PubMed: 15351545]
6. Cafri G, Thompson JK, Roehrig M, et al. Appearance motives to tan and not tan: evidence for validity and reliability of a new scale. *Ann Behav Med*. 2008; 35(2):209–220. [PubMed: 18365298]

Table

Item Endorsement Labels and Scale Reliabilities

Factor Subscale Title	Item ^a	Respondents Who Agree or Strongly Agree, %
Skeptical rationalizations ($\alpha = .62$)	<i>1. A lot of people I know use tanning beds, so they can't be all that harmful.</i>	7.7
	<i>2. The medical evidence that tanning beds are harmful is exaggerated.</i>	8.8
	3. Tanning bed use cannot be all that bad for you because many people who use tanning beds live long lives.	10.0
	4. More skin cancer is caused by frequent sunburns and family history than tanning bed use.	27.1
	<i>5. Cancer mostly strikes people with negative attitudes.</i>	2.2
	<i>6. They will have found cures for cancer and all the other problems tanning beds cause before I am likely to get any of them.</i>	3.3
	7. You can overcome the harms of using tanning beds by doing things like using sunscreen, eating healthy food, and exercising regularly.	23.8
	<i>8. I think I must have the sort of good health or genes that means I can use tanning beds without getting any of the harms.</i>	4.4
Worth-it rationalizations ($\alpha = .76$)	<i>10. I would rather live a shorter life and enjoy it than a longer one where I will be deprived of the pleasure of using tanning beds.</i>	7.7
	11. You have to die of something, so why not enjoy yourself and use tanning beds.	11.0
	12. It is more important for me to get that tanned look at this age than worry about skin cancer.	12.2
Danger ubiquity rationalizations ($\alpha = .63$)	9. I think I would have to use tanning beds a lot more frequently than I do to put my health at risk.	48.1
	13. Everything causes cancer these days.	59.1
	14. If tanning bed use was so bad for you, the government would ban tanning beds.	31.5
	15. It is dangerous to walk across the street.	52.5
	16. Tanning bed use is no more risky than lots of other things that people do.	53.6

^aItems in italics were endorsed by fewer than 10% of the participants and deleted from further consideration.