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Friendly tanning: Young adults' engagement with friends around indoor tanning

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Abstract

Indoor tanning (IT), particularly during early adulthood, increases risk for melanoma and is exceedingly common among youth. Social influence, including social norms, promotes IT but little is known about young adults' engagement with friends around tanning. We examined IT behaviors and tanning-related communication with friends at three universities. Of 837 participants, 261 (31%) reported ever tanning (90% female, 85% White). Of those, 113 (43%) were former tanners and 148 (57%) current tanners. Current tanners reported more social tanning and discussions with friends about tanning, more frequent outdoor tanning, high propensity to tan, and greater lifetime IT exposure than former tanners. Risks-to-benefits discussion ratios were greater for former tanners. In adjusted analyses, current tanners were more likely to make plans to tan and to talk about tanning benefits with friends. Findings confirm IT is a social experience. Future work should examine social tanning's role in the promotion and reduction of indoor tanning among youth.

Keywords

indoor tanning; tanning behavior; communication; young adults; friends

Introduction

The use of indoor tanning (IT) devices significantly increases the risk for melanoma, the most dangerous form of skin cancer, particularly when exposure occurs during early adulthood (Guy, Watson, Richardson, & Lushniak, 2016; National Cancer Institute, 2015).

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Ethical Approval & Informed Consent

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Use of tanning beds before age 35 increases lifetime risk of melanoma by at least 60% (Boniol, Autier, Boyle, & Gandini, 2012; International Agency for Research on Cancer Working Group on Artificial Ultraviolet Light and Skin Cancer, 2007), with an observed dose response (Lazovich et al., 2010). Despite the significant health risks associated with tanning bed use, a third (32%) of 18–21 year-olds in the U.S. report having tanned indoors (Guy, Berkowitz, Watson, Holman, & Richardson, 2013), with non-Hispanic white women constituting the highest rates of use (Guy, Berkowitz, Holman, & Hartman, 2015). On December 22, 2015, the Food and Drug Administration proposed a national ban on indoor tanning for anyone under 18 years of age, sparking national debate regarding IT usage (Coups, Geller, & Pagoto, 2016). Despite this ban being a significant step forward, if implemented, the newly-proposed restrictions would not apply to college-aged young adults, typically ages 18–24. For these young people, it is critical that research identify targets for non-legislative interventions to complement ongoing legislative and policy initiatives with those under the age of 18.

Social influence is a strong theoretical and empirically-supported promoter of IT use in young people (Banerjee, Greene, Bagdasarov, & Campo, 2009; O'Riordan et al., 2006). Social influence takes many forms but generally occurs when one's feelings, attitudes, or behaviors are affected (or influenced) by others. While social influence includes processes such as compliance-seeking (Sanders & Fitch, 2001), peer group identification (Carcioppolo, Orrego Dunleavy, & Yang, 2016) and communication and persuasion (Fitch, 2003; Hay et al., 2009), in the context of IT, research examining social norms, in particular, has predominated. Social norms are a core construct of the theory of planned behavior (Ajzen, 1991), and encompass the perception of what others do (descriptive norms) and what others approve (injunctive norms; (Cialdini et al., 2006). Empirically, social norms surrounding the perceived tanning behaviors and approval of important others (i.e., family, peers, celebrities) have been found to significantly promote intentions to tan and subsequent tanning bed use across multiple studies (Hillhouse, Adler, Drinnon, & Turrisi, 1997; Hillhouse, Turrisi, & Kastner, 2000; Holman & Watson, 2013; Watson et al., 2013). In light of this research, social norms emerge as an important and highly studied aspect of social influence.

Social norms, however, are but one aspect of social influence. Communication of attitudes, beliefs, and/or pressures to conform is another form of social influence that may significantly affect young adults' health risk behaviors (Borsari & Carey, 2001). From a social influence theory perspective, communication through the use of different persuasive strategies in conversation can influence behavior in a positive or negative way (Baxter & Bylund, 2004). In the context of alcohol use, one study found that descriptive norms of alcohol use were more predictive of consumption when participants talked about alcohol with friends than when these discussions did not take place (Real & Rimal, 2007). Accordingly, it is plausible that communication with others about IT represents another mechanism through which tanning bed use is promoted that is quite separate from social norms per se.

Indoor tanning is a social endeavor when two or more individuals pursue tanning together (Hillhouse, Turrisi, & Shields, 2007). Although this social aspect of tanning has been

generally understudied, there is some research indicating that close friends and family members are likely companions of IT. For instance, in one study 56% of undergraduate students reported tanning with their mothers during their initial IT experience, and these participants were almost five times more likely to be heavy current tanners (>25 times per year) than those who reported going alone (Baker, Hillhouse, & Liu, 2010). It is also well established that young adults who tan indoors are more likely to report that their friends also tan indoors (Banerjee et al., 2009; Hoerster et al., 2007; Holman & Watson, 2013; Lazovich et al., 2004). The present study extends these findings by identifying tanners who go tanning together with friends but also by exploring whether they talk to their friends about tanning. Social influence, as operationalized by shared tanning behavior and communication, may be an important yet understudied predictor of current indoor tanning practices among young adults. To this end, we investigated two types of social tanning: (1) *behavioral engagement*, or having gone tanning with friends in the past and planning to tan with friends in the future, and (2) *communication engagement*, or having talked about the risks and benefits of indoor tanning with close friends or about stopping tanning bed use. Our study is guided by two hypotheses:

> H1: Compared to former tanners, current tanners will be more likely to report having gone indoor tanning with friends and planning to tan in the future with friends.
>
> H2: Compared to current tanners, former tanners will be more likely to discuss risks of indoor tanning and stopping tanning bed use with friends; whereas current tanners will be more likely to discuss benefits of indoor tanning with friends than former tanners.

Understanding these potentially important behavioral and communication patterns could provide further evidence of the influence of peers on indoor tanning, and serve to identify novel targets (i.e., communication with friends) for interventions to reduce indoor tanning use among young adults.

Methods

Participants

A convenience sample of 837 undergraduate students were recruited from three U.S. academic institutions: (1) a private university in an urban northeastern city (“College A”), (2) a private liberal arts college in an urban southeastern city (“College B”), and (3) a public university in a rural southeastern setting (“College C”). Participants were eligible for the study if they were (1) 18 years or older, and (2) were currently enrolled as undergraduate students at one of the participating institutions.

Procedures

A detailed description of study procedures and recruitment is available elsewhere (Daniel et al., 2017). In brief, participants completed a 50-question survey either electronically, in-person, or via a professor’s e-learning website. A total of 1,014 participants submitted the survey between March and April 2014. Of these, seven did not meet eligibility criteria and were excluded from analyses. Thirty-six began the survey (i.e., clicked “agree” to consent procedures or signed consent form) but discontinued their participation after answering only

one or two questions. Another 134 surveys were not included in analyses as these participants failed to complete questions regarding their history of indoor tanning. A final sample of 837 surveys were included in analyses. Of note, chi-square analyses revealed no statistically significant differences between the final sample of 837 for whom tanning history was completed and the 134 whose tanning history was missing on demographic variables, skin type, and outdoor sun exposure (p's > .05). All study procedures were approved by the Institutional Review Boards at Harvard University and the three participating institutions.

Measures

Participants provided basic demographic information (i.e., name of school, age, year in school, sex, and race), reported the color of their untanned skin ranging from "very fair" to "very dark," and their skin's response when exposed to the sun without sunscreen (propensity to tan) ranging from "burns, rarely/never tans" to "does not burn, develops dark tan."

Lifetime and current IT practices—To assess participants' past IT behaviors, we asked the following dichotomous questions. First, participants reported whether they had ever used a tanning bed in their lifetime (yes/no). To capture those individuals who are still using tanning beds, participants were asked "Do you currently use tanning beds, even just once in a while?" Participants who answered yes to this question were considered "current tanners" and those who answered no to current tanning but yes to ever tanning were considered "former tanners." Participants were also asked "How many times have you used a tanning bed in your whole life?" Responses included: "less than 20 times," "21–40 times," "41–60 times," "61–80 times," "81–100 times," and "more than 100 times." We also asked with whom participants indoor-tanned for the first time. Response options included: "mother;" "other female relatives;" "other male relatives;" "friend(s);" "by myself" and "other."

Engagement with friends—Modeled after a common procedure in research of social networks (Marsden, 1990), we asked participants to think about their three closest friends. For each of the three closest friends, we asked them to indicate the friend's gender and report whether they had (a) gone to the tanning bed together in the past, (b) plan to go to the tanning bed in the future, (c) talk/have talked about the benefits of tanning beds, (d) talk/have talked about the risks of tanning beds, and (e) talk/have talked about stopping use of tanning beds someday. We refer to the first two items assessing past and future tanning bed use as *behavioral engagement*; and the rest of the items assessing discussions of risks, benefits, and stopping usage as *communication engagement*. An engagement score was calculated for each item. This score represents participants' engagement with either (0) none of their listed friends, (1) one friend, (2) two friends, or (3) all three friends regardless of serial position (i.e., first, second, or third friend). Possible scores ranged from 0 to 3 with a higher score indicating broader engagement with friends. For example, if a participant reported having gone to a tanning bed with their closest friend (friend #1) and the next closest friend (friend #2), but not the third closest friend (friend #3), a score of 2 would be given for that behavioral engagement item because the participant reported going tanning with 2 out of 3 friends. Frequencies and mean scores were calculated for each item.

Statistical Analyses

Descriptive statistics were calculated for all study variables. Independent samples t-tests explored whether participants' engagement differed by IT status (current vs. former). Odds ratios and corresponding 95% confidence intervals were calculated to examine the likelihood of risks and benefits discussions for current and former tanners by number of friends. Bivariate associations were examined with Pearson correlations and point-biserial correlations (for dichotomous variables). ANOVA's with Tukey HSD post hoc comparisons were performed to examine differences in engagement by academic institution. To characterize current and former tanners, a logistic regression with indoor tanning status as the outcome was performed. Socio-demographic variables that were significantly related to the variables of interest were included as covariates in the regression model (i.e., sex, school, outdoor tanning frequency, propensity to tan, and lifetime IT). Covariates were entered on the first step followed by participants' behavioral and communication engagement as predictors on the second step. A criterion significance level of $p < .05$ was used for all analyses.

Results

A total of 837 participants completed the survey; 58% of participants from College A, 26% from College B, and 16% from College C. Approximately a third of participants reported having ever indoor tanned (N = 261, 31%). This group comprised the current study sample. Ever tanners were primarily from College A (39%) and College B (32%), with 19% of tanners from College C. As seen in Table 1, both current and former tanners were overwhelmingly female and white, with a mean age of 20 years. Year in school was evenly split with a slightly higher frequency of participants being in their junior or senior years of college. Most tanners reported being "fair or very fair," and that their skin "burns a little, then develops moderate tan" when exposed to the sun without sunscreen.

Of the 261 participants who reported ever tanning indoors, 148 (57%) were current tanners and 113 (43%) were former tanners. About half of ever tanners (49%) reported using tanning beds 20 times or less in their lifetime, 29% endorsed indoor tanning between 21–60 times, and 12% between 61–100 times. A small but notable number of participants reported having gone indoor tanning 100 times or more (n = 19; 7%).

Engagement with Friends Around Indoor Tanning (Table 2)

Across tanners, nearly half of participants reported that the first time they used a tanning bed they did so with friends (43%, n = 113) followed by their mothers (29%, n = 76). Twenty-seven percent (n = 71) reported that they were alone when they first used a tanning bed. In order to examine the social aspect of IT further, we compared current and former tanners in terms of behavioral and communication engagement. Results are as follows:

Behavioral engagement—We hypothesized that current tanners would be more likely than former tanners to report having gone indoor tanning with friends and planning to tan in the future with friends. Compared to former tanners, current tanners endorsed greater past tanning bed use with friends, $t(256) = -4.70$, $p < .001$, and planned future tanning bed use

with friends, $t(257) = -7.86$, $p < .001$. As seen in Table 2, 77% of current tanners reported having gone tanning with at least one friend whereas 56% of former tanners reported doing so. A more pronounced difference was observed for planning to tan in the future with at least one friend (59% current tanners vs. 12% former tanners).

Communication engagement—We hypothesized that former tanners would be more likely than current tanners to discuss risks of indoor tanning and stopping tanning bed use with friends; whereas current tanners would be more likely than former tanners to discuss benefits of indoor tanning with friends. Our hypothesis was partially supported. As hypothesized, current tanners talked about the benefits of tanning beds with more friends than former tanners, $t(257) = -6.49$, $p < .001$. However, current tanners also talked about the risks of tanning beds with more friends than former tanners, $t(257) = -2.36$, $p < .05$ (Table 2). No significant difference was found between current and former tanners in terms of talking with friends about stopping tanning bed use, $t(257) = -1.61$, $p > .10$.

Overall, a large proportion of participants talked with friends about both the risks and benefits of tanning, with risks being discussed more frequently across current and former tanners (Figure 1). To further explore whether the ratio of risk-to-benefit discussions with one, two, or all three friends was significantly different for current and former tanners, we calculated the odds of risk-to-benefit discussions by the number of friends they talked to. We found that the risks-to-benefit ratios with one friend and two friends were not significantly different for former and current tanners (one friend: OR = 1.47, 95%CI [0.59, 3.67]; two friends: OR = 1.41, 95%CI [0.69, 2.90]). However, we found that former tanners who talked to all three friends were more likely to have a larger risk-to-benefit ratio than current tanners (three friends: OR = 2.55, 95%CI [1.17, 5.54]).

Associations between Socio-demographic Variables and Engagement with Friends

Correlations of all study variables among all respondents are presented in Table 3. Female participants were more likely to report past tanning and discussions about tanning bed risks and benefits with friends. Overall, participants who tanned outdoors more frequently reported a greater propensity to tan, and had more lifetime IT experience, and were more likely to report past use and future intentions to tan with friends. Similarly, participants who tanned outdoors more frequently and had a greater propensity to tan were more likely to talk about the risks and benefits of tanning as well as stopping tanning bed use.

Further, we examined differences in engagement with friends between the academic institutions. Participants from College C reported past use of tanning beds with more friends than College B students, $F(2, 253) = 4.81$, $p = .009$; mean difference = .482. College C participants were also more likely to report planning to tan in the future with more friends, $F(2, 254) = 5.48$, $p = .005$, than participants at either College A (mean difference = .421) or College B (mean difference = .501). Communication engagement (i.e., talking about benefits, talking about risks, talking about stopping use) was equally reported across the academic institution.

Finally, to characterize current and former tanners we performed a logistic regression adjusting for sex, academic institution, frequency of outdoor tanning, propensity to tan, and

lifetime IT (Table 4). Our model was significant, $\chi^2(11, N = 261) = 93.43$, $p < .001$, and exhibited adequate fit according to the Hosmer and Lemeshow test, $\chi^2(8, N = 261) = 9.23$, $p = 0.32$. Findings revealed that participants who made plans to tan with friends were twice as likely (OR = 2.44; 95% CI [1.49, 3.97]) to be current tanners. Similarly, those who had talked about the benefits of tanning beds were 1.6 times more likely (OR = 1.64, 95%CI [1.14, 2.37]) to also currently tan indoors. However, current tanning was not related to talking with friends about the risks of tanning, stopping tanning, or past tanning behaviors (all *p*'s > .05). Having a greater propensity to tan remained significant, with participants who reported a higher propensity to tan being more likely to be current tanners (OR = 1.63, 95%CI [1.18, 2.27]).

Discussion

The present study uniquely contributes to the existing IT literature by investigating the prevalence of social tanning practices in young adults and their communication engagement with friends around IT. Results confirm previous reports that IT is a social endeavor (Baker et al., 2010; Hillhouse et al., 2007), and indicated that communication with friends around indoor tanning is also prevalent, with most ever tanners discussing both the risks and benefits of tanning bed use, and close to half reporting having talked about ceasing use.

A majority of ever tanners in our sample engaged in tanning bed use with friends and approximately 60% of current tanners planned to go tanning with a friend in the future. Importantly, we found a high rate of social tanning at first tanning episode, with 43% of participants initiating indoor tanning with a friend, and 29% being accompanied by their mothers. This is consistent with prior research with young adults which found that almost half (46%) reported initiating tanning bed use with a friend (Baker et al., 2010). Our results showed that friends are important companions to indoor tanning sessions at the time of tanning initiation and beyond. There is strong theoretical support for this finding. Peer approval and norms are strong predictors of young adults' behavior (Jackson & Aiken, 2000), and such influences increase the likelihood that risky practices, like indoor tanning, will be pursued (Banerjee et al., 2009). A large proportion of current tanners in our sample reported having gone tanning with friends in the past and planning to tan with friends in the future. Friends who tan together are likely to be influenced by important others and hold strong group identification bonds that reinforce social tanning. The perception of important others favoring a behavior, in this case indoor tanning, makes it more likely that an individual would intend to engage in the behavior and actually pursue the behavior (Cafri, Thompson, Jacobsen, & Hillhouse, 2009; Valente, 2011).

In our study, relative to former tanners, current tanners reported going tanning with more friends in the past and were also more likely to make plans to tan with friends. Tanning with friends seems to be an appealing and motivating practice (by means of social approval and influence) which promotes and maintains the behavior. A number of studies have demonstrated the efficacy of network interventions for health behavior modification, including preventing and/or reducing risk behaviors among young adults (Valente, 2012; Valente & Pumpuang, 2007). One study, for example, demonstrated that students who received anti-smoking interventions from peer leaders they nominated themselves showed

improved attitudes, improved self-efficacy, and decreased intention to smoke, compared with students who received the same interventions from peer leaders selected by teachers or selected at random (Valente, Hoffman, Ritt-Olson, Lichtman, & Johnson, 2003). Indoor tanning interventions might similarly target social networks of young adults in order to change tanning attitudes, intentions and practices. Given the evidence of social influence on indoor tanning behaviors found in this study, future studies could investigate whether and how broader networks of social influence might influence indoor tanning behavior.

Communication among friends around tanning bed use is an important but less studied social element of IT use. We found that discussions surrounding tanning bed use were prevalent, with a majority of ever tanners having talked to their friends about the risks and benefits of tanning beds, and about half talking about no longer using tanning beds. Consistent with prior work (Banerjee, Hay, & Greene, 2012; Knight, Kirincich, Farmer, & Hood, 2002), our findings showed that both current and former tanners discussed the risks associated with tanning beds with friends at a higher rate than benefits. This pattern was more pronounced for former compared to current tanners (i.e., greater risk-to-benefit ratio). Adjusting for socio-demographic variables, current tanners did not differ from former tanners in their discussions with friends regarding risks and stopping IT, or about past tanning, perhaps because discussion of risks were quite high and well known in current as well as former tanners. In contrast, current tanners were more likely than former tanners to discuss the benefits of tanning with friends. Despite the high prevalence of risk discussions observed, social tanning rates in our sample were high. Accordingly, the perceived benefits of tanning may be reinforced through these “friendly” discussions, outweighing the significant risks of tanning. This is consistent with a study with college-aged females which found that current tanners had the most positive and least negative outcome expectancies about indoor tanning (Noar, Myrick, Morales-Pico, & Thomas, 2014). Sharing information about the benefits of tanning with others, such as friends, may thus reinforce positive outcome expectancies associated with tanning that contribute to young adults’ engagement in risky IT behaviors. Future research should enumerate in real-time the frequency with which people use tanning beds and the possible effect of these conversations in reducing the number of times they use them.

Our results are consistent with previous research regarding demographics of indoor tanners: these individuals are more likely to be female, fair-skinned and non-Hispanic white (Heckman, Coups, & Manne, 2008; Holman & Watson, 2013). We also found interesting differences in behavioral engagement by academic institutions that reflect the range of indoor tanning prevalence across geographical regions. Overall, young adults attending College C, a rural, public southeastern university, demonstrated greater social indoor tanning behaviors. Young adults at this university were more likely to have gone tanning in the past with friends and to make more plans to tan in the future with friends. It is possible that residential status (i.e., urban vs rural) may be driving the differences observed. For instance, prior research found that young girls living in rural areas, such as participants attending College C, were more likely to use tanning beds than those in urban areas (Quinn et al., 2015). Authors reasoned that even though rural youth have limited access to tanning salons, they may have greater access to noncommercial tanning beds at home or via other non-tanning businesses. Accordingly, it is possible that social tanning practices among rural

youth tend to occur in non-commercial tanning settings (e.g., gyms, nail/hair salons) where friends are likely to spend time together. Importantly however, given the convenience sampling used in the current study, examination of college-level factors on IT rates such as residential status could not be directly examined. When it comes to rural youth and IT one thing is clear: the association is understudied and research examining contributors of IT among young adults in rural populations is greatly needed.

Several study limitations should be considered. First, convenience sampling may have limited the generalizability of the findings. Although our sample was comprised of young adults from the northeastern and southeastern regions of the U.S., future work should explore both behavioral and communication engagement with friends around IT utilizing nationally representative samples. Second, current tanners may have greater recall of risk and benefits conversations than former tanners because tanning is still more present in their lives. Former tanners could be recounting conversations with friends that occurred long ago (perhaps around the time of their last tanning episode) and thus may be overestimating the risks to benefits of tanning beds. As time has passed, it is possible that remembering risks more so than benefits has become more socially desirable for former tanners. Third, we do not know which types of risks and benefits tanners in our sample had discussed with their friends, or whether there were any misconceptions being disseminated. As a result, future work should explore not only the type of conversation had (i.e., risk or benefit) but also the content of young adults' discussions with friends. Fourth, we were underpowered to adequately explore sex differences related to engagement with friends. Although women make up the largest proportion of indoor tanners, a small but significant number of men also engage in IT (Lazovich et al., 2016). Future studies should explore whether social tanning patterns differ by sex. Lastly, we did not assess how often participants went indoor tanning with friends in the past or how often they had discussions about tanning. Knowing this would paint a more complete picture of the social aspect of IT, and may help target preventive efforts. Furthermore, we did not assess potential indicators of tanning addiction in our study. It is possible that talking with friends about the risks of tanning, as did current tanners in our study, may be an important marker for addictive behavior. More research is needed to establish this association.

While research is currently underway exploring the use and acceptability of tanning restrictions for college-aged individuals (i.e., employing a tax on tanning services, banning free-apartment tanning; (Seidenberg, Noar, & Sontag, 2016), socio-behavioral interventions are needed to reduce IT usage among this group. Our findings suggest that communication with friends about tanning may be a potential vector for intervention. For instance, social technologies (e.g., text messaging, social media) could promote knowledge of tanning risks and encourage safer ways of socializing among friends. Interventions could also capitalize on the social nature of IT by specifically targeting friends who tan together and aim to change social expectancies associated with the advantages of using tanning beds. For instance, a social network segmentation approach (e.g., sociometrically targeted messages) has been used effectively to curb smoking behaviors in adolescents (Starkey, Audrey, Holliday, Moore, & Campbell, 2009) and could be used to design messages that promote greater interpersonal communication about tanning and provide tools to facilitate and encourage tanning avoidance conversations (Valente & Fosados, 2006). Future work should

also explore the depth of risk and benefit discussions occurring with friends surrounding tanning. This information would be useful in preparing direct messages that might challenge young adults' tendency to discount future health risks. Lastly, given the significant influence of peers on behavior, future work should examine the potential of utilizing friends, perhaps non-tanner friends, to encourage tanning cessation.

Conclusions

Indoor tanning is a social experience among young adults and communication may be a potential target for intervention. Results indicate that a substantial number of young adults have gone indoor tanning with friends and plan to continue doing so in the future. Discussions about the risks and benefits of tanning were also prevalent. Future research is needed to examine the nature of young adults' indoor tanning discussions with friends and their potential to encourage indoor tanning cessation.

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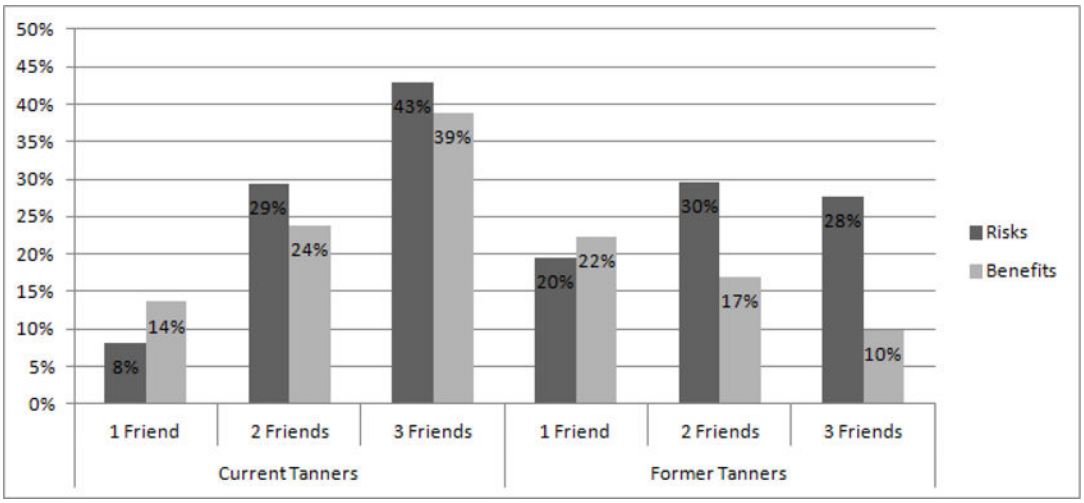

Figure 1.
Discussions of the risks and benefits of tanning beds with friends

Table 1

Sample characteristics (N = 261)

	Indoor Tanners	
	Former Tanners n = 113 (%)	**Current Tanners n = 148 (%)**
Sex		
Male	10 (8.8)	17 (11.5)
Female	103 (91.2)	131 (88.5)
Race[a]		
White	96 (86.5)	127 (85.8)
Other	15 (13.5)	21 (14.2)
Academic Institution[b]		
College A	47 (42.0)	56 (38.1)
College B	42 (37.5)	41 (27.9)
College C	23 (20.5)	50 (34.0)
Year in School		
Freshman	24 (21.2)	28 (19.0)
Sophomore	24 (21.2)	37 (25.0)
Junior	35 (31.0)	47 (31.7)
Senior	30 (26.6)	36 (24.3)
Color of Untanned Skin		
Fair/Very fair	81 (71.7)	85 (57.4)
Medium/Dark/Very dark	32 (28.3)	63 (42.6)
Propensity to Tan[c]		
Burns, rarely/never tans	13 (11.5)	3 (2.0)
Burns easily, then develops light tan	36 (32.0)	24 (16.3)
Burns a little, then develops moderate tan	47 (41.5)	72 (49.0)
Tans, does not burn	12 (10.6)	30 (20.5)
Does not burn or tan/	5 (4.4)	18 (12.2)
Does not burn, develops dark tan		
Mean Age (SD)	20.27 (1.3)	20.39 (1.27)

Note:

[a]Two former tanners did not report their race;

[b]One former tanner and one current tanner did not report their academic institution;

[c]One current tanner reported their propensity to tan as ‘other’, and thus not reported on the table.

Table 2

Engagement with friends around indoor tanning by current and former tanners

	Behavioral Engagement		Communication Engagement		
	Gone tanning in past	**Plan to tan in future**	**Talked about risks**	**Talked about benefits**	**Talked about stopping IT**
Current Tanners					
None	34 (23)	60 (41)	29 (20)	35 (24)	74 (50)
1 friend	43 (29)	33 (22)	12 (8)	20 (14)	36 (25)
2 friends	41 (28)	31 (21)	43 (29)	35 (24)	15 (10)
3 friends	29 (20)	23 (16)	63 (43)	57 (39)	22 (15)
Mean (SD)	1.44 (1.05)***	1.12 (1.11)***	1.95 (1.14)*	1.78 (1.20)***	0.90 (1.10)
Former Tanners					
None	48 (44)	98 (88)	26 (23)	57 (51)	65 (58)
1 friend	37 (33)	6 (5)	22 (20)	25 (22)	27 (24)
2 friends	20 (18)	7 (6)	33 (30)	19 (17)	10 (9)
3 friends	6 (5)	1 (1)	31 (27)	11 (10)	10 (9)
Mean (SD)	0.86 (0.90)	0.21 (0.59)	1.62 (1.13)	0.86 (1.03)	0.69 (0.97)

Note: IT = Indoor tanning;

* $p < .05$;

*** $p < .001$; Significant testing depicted here is based on independent samples *t*-test comparing current versus former tanners on mean engagement with friends scores. Parentheses represent percentages unless otherwise stated on the table.

Table 3

Correlations (N = 258)

	1 Past Use	2 Future Use	3 Benefits	4 Risks	5 Stop IT	6 Sex	7 Out. Tan	8 Prop. Tan	9 Lifetime IT
1. Gone Tanning in the Past	–								
2. Plan to Tan in the Future	.65***	–							
3. Talk about Benefits	.53***	.52***	–						
4. Talk about Risks	.33***	.23***	.59***	–					
5. Talk about Stopping IT	.41***	.34***	.39***	.46***	–				
6. Sex[a]	.12*	.04	.13*	.23***	.16*	–			
7. Outdoor Tanning Freq.	.30***	.27***	.35***	.21**	.14*	.14*	–		
8. Propensity to tan	.18**	.22***	.12	.01	.02	−.01	−.15*	–	
9. Lifetime IT	.38***	.43***	.37***	.23***	.26***	.15*	.31***	.19**	–
10. IT Status[b]	.28***	.44***	.38***	.15*	.10	−.04	.29***	.30***	.33***

Note:

*p < .05;

**p < .01;

***p < .001. Indoor Tanning = IT.

[a]Sex was coded Male = 0, Female = 1.

[b]IT status was coded Former = 0, Current = 1).

Table 4

Associations between engagement with friends and indoor tanning status (current vs. former)

	B	SE	Wald χ^2 (1)	OR	95% CI	*p*
Covariates						
Sex	−0.84	0.54	2.38	0.43	[0.15, 1.25]	0.12
Academic Institution						
College A (ref)	–	–	–	1.00	–	–
College B	−0.01	0.38	0.01	0.99	[0.47, 2.07]	0.97
College C	0.41	0.45	0.83	1.50	[0.63, 3.60]	0.36
Outdoor tanning frequency	0.30	0.18	2.71	1.34	[0.95, 1.91]	0.10
Propensity to tan	0.49	0.17	8.77	1.64	[1.18, 2.27]	<0.01
Lifetime tanning bed use	0.20	0.13	2.41	1.22	[0.95, 1.58]	0.12
Engagement						
Gone tanning in the past	−0.16	0.22	0.52	0.86	[0.56, 1.31]	0.47
Plans to tan in future	0.89	0.25	12.68	2.44	[1.49, 3.97]	<0.01
Talked about benefits	0.50	0.19	6.98	1.64	[1.14, 2.37]	<0.01
Talked about risks	0.04	0.19	0.05	1.04	[0.72, 1.50]	0.83
Talked about stopping IT	−0.30	0.20	2.21	0.74	[0.50, 1.10]	0.14

Note: former (0) vs. current (1) tanner. Indoor Tanning = IT.