

Reasons for Tanning Bed Use: A Survey of Community College Students in North Carolina

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BACKGROUND Tanning bed use is classified as carcinogenic and is associated with an increased risk of skin cancer. The aim of this cross-sectional survey was to identify the most commonly stated reasons for tanning bed use among a sample of male and female community college students in eastern North Carolina.

METHODS A brief, self-administered survey was distributed to students during English, Art, or Psychology class periods in 5 eastern North Carolina community colleges during the 2010 fall semester.

RESULTS The 95% response rate consisted of 487 returned surveys. Of the 487 respondents, 12.7% (N = 62) were current users, 24.5% (N = 119) were past users, and 62.2% (N = 303) reported never using tanning beds. Women (79%) were more likely than men (18%) to be current or former tanning bed users. Three African Americans reported current tanning bed use (4.8%). Reasons for tanning bed use were similar among men and women, with "I think I look better when I am tan" being the most commonly cited reason (70.2%) for tanning bed use.

LIMITATIONS A convenience sample limits generalizability to all North Carolina students attending community college.

CONCLUSIONS Current tanning bed use was not widely reported. However, educational strategies for preventing tanning bed initiation or recurrence among male and female community college students should include appearance-driven factors.

Excessive ultraviolet radiation (UVR) from ambient sun exposure has historically been the major cause of basal, squamous, and melanoma skin cancers [1]. In recent decades, indoor tanning has become a common source of ultraviolet A (UVA) and ultraviolet B (UVB) radiation. UVR in these wavelengths and tanning bed devices have been classified as human carcinogens by the International Agency for Research on Cancer (IARC), an agency of the World Health Organization [1, 2].

Many epidemiologic studies link use of tanning bed exposure to skin cancers [2-6]. While the incidence of non-melanoma skin cancers are not tracked systematically in the US, melanoma skin cancer is the most common form of cancer for young adults aged 25-29 and the second most common form of cancer among young adults 15-29 years old [7, 8]. In North Carolina, female melanoma diagnosis peaks at ages 30-34 years, and in males, diagnosis peaks at 45-49 years [9]. Use of indoor tanning facilities has been speculated as one of the primary factors contributing to the rising incidence of melanoma among young adults. Based on the available studies, approximately 40%-60% of college students have used indoor tanning booths, with higher rates among women [10].

Several studies have been conducted to understand why young adults patronize tanning facilities. Among study findings relating to appearance-based motivations, improvement in the appearance of acne [11, 12], body image [11, 13], increase in sex appeal [11, 12], general attractiveness [11, 12, 14-16], and increased confidence in appearance [11-14, 17] have been cited as motives for tanning bed use. Other stud-

ies have indicated social persuasion from friends [15, 17-19], family [17], and media [11, 17] as influences for indoor tanning use. Lastly, research has found sensation-seeking reasons for tanning use, including mood enhancement [20], relaxation [12, 18, 20-23], and even addictiveness of tanning behavior [21, 23]. The purpose of this study was to identify the reasons for tanning bed use among young adults in eastern North Carolina.

Methods

This cross-sectional survey was approved by the University and Medical Center Institutional Review Board at East Carolina University. The study population was a convenience sample determined by community college instructors that approved distributing the survey in the classroom. Department chairs and individual professors of health, psychology, art, and English were contacted during the summer and early fall of 2010. Professors of courses provided written consent for participation which granted permission to administer the survey during 17 class periods including psychology classes at community college campuses in Craven, Lenoir, and Wayne counties; psychology and art classes at Nash Community College; and English classes at Johnston

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Community College. Eligible participants were students over the age of 18 and were enrolled in the courses for which professors expressed agreement to participate.

Demographic information, tanning bed use, and reasons for tanning bed use were obtained via paper survey. Findings of previous studies were reviewed to develop the 20-item survey. Respondents were asked to indicate tanning bed use from one of the following 3 options: "I currently use tanning beds/booths," "I have used tanning beds/booths in the past but do not anymore," and "I have never used tanning beds/booths." Current or former tanners were then asked to choose 1 primary reason and any other reasons from among 16 items to indicate reasons for tanning bed/booth use.

During the months of September and October 2010, surveys were distributed and collected by the principal investigator (A.N.). After data entry, statistical analysis was conducted in Stata Statistical Software, release 7 (2001).

Results

There were 645 students ≥ 18 years of age enrolled in the participating course sections. Of these 645 students, 512 (79%) were in attendance the day of the survey and 487 (95%) surveys, representing 17 course sections across 5 campuses, were completed, returned, and included in the data analysis. Classes surveyed convened between 8:00 am and 3:30 pm and attendance ranged from 63% to 94% on the day of the survey, which took no more than 10 minutes to complete. Some respondents did not fully complete the survey. Respondents were primarily female (58.3%) and white (63.2%). The majority of respondents were 18 years of age, however the age range of students surveyed was wide (ages 18-67), making the mean age of respondents 23.8 years of age (Table 1).

Table 1 presents age, sex, and race by current, former, and never users of tanning beds. Sixty-two students (12.7%) reported current tanning bed use, 119 (24.5%) reported past use, 303 (62.2%) reported never using tanning beds, and there were 3 non-responses. Current and former tanning bed users were mostly white, 83.9% and 87.4%, respectively. Seven black students reported current or former tanning bed use. Females (82.3%) were more likely than males (16.1%) to report current tanning bed use ($\chi^2 = 16.72$, $P < .001$), as well as former tanning bed use, 77.3% and 19.3%, respectively ($\chi^2 = 23.36$, $P < .001$).

The most frequently stated reason for tanning bed use among current and former tanning bed users was, "I think I look better when I am tan," followed by, "I tan to prepare for summer," and "I tan for special events" (Table 2). "Tanning beds are safer than getting tan via natural sun" and "Media/celebrities have influenced my decision to tan" were the least frequently stated reasons for tanning bed use. Findings were very similar when stratified by age. The most frequently stated reasons for tanning among female current and former tanning bed users were identical to that of the entire sample.

Among males, "I think I look better when I am tan" followed by "I tan to prepare for summer" were the 2 most frequent reasons for tanning among current and former male users. Slightly different, however, was the third most frequently stated reason for tanning bed use among males, in which "I tan to prepare for vacation" and "I have more self-confidence when I am tan" were tied.

Reasons for tanning bed use obtained through write-in responses included: allusions to curiosity and boredom, such as "to try something new" or "nothing better to do"; matters of convenience or cost, such as "my parents owned a tanning salon" or "brother in law's family owns a tanning salon

TABLE 1.
Prevalence of Tanning Bed Use Among 487 Community College Students, North Carolina, 2010

	Current tanners % (N = 62)		Former tanners % (N = 119)		Never tanners % (N = 303)		No response % (N = 3)		Total % (N = 487)	
	%	No.	%	No.	%	No.	%	No.	%	No.
Sex										
Male	16.1%	10	19.3%	23	50.2%	152	33.3%	1	38.2%	186
Female	82.3%	51	77.3%	92	46.2%	140	33.3%	1	58.3%	284
No response	1.6%	1	3.4%	4	3.6%	11	33.3%	1	3.5%	17
Age in years										
18-21	66.1%	41	51.3%	61	59.7%	181	66.7%	2	58.5%	285
22-29	17.7%	11	21.8%	26	18.5%	56	0	0	19.1%	93
30+	16.1%	10	21.0%	25	17.5%	53	33.3%	1	18.3%	89
No response	0	0	5.9%	7	4.3%	13	0	0	4.1%	20
Race										
White	83.9%	52	87.4%	104	49.5%	150	66.7%	2	63.2%	308
Black	4.8%	3	3.4%	4	37.3%	113	33.3%	1	24.8%	121
Other	8.1%	5	3.4%	4	7.9%	24	0	0	6.8%	33
No response	3.2%	2	5.9%	7	5.3%	16	0	0	5.1%	25

Note: Due to rounding or missing values, percentages may not total 100%.

TABLE 2.
Reasons for Tanning by Sex and Use, North Carolina, 2010

Reasons	Current tanners		Former tanners	
	Female % (N = 51)	Male % (N = 10)	Female % (N = 92)	Male % (N = 23)
I think I look better when I tan	86.3% (44)	100.0% (10)	64.1% (59)	60.9% (14)
I tan to prepare for summer	72.5% (37)	60.0% (6)	59.8% (55)	52.2% (12)
I tan for special events (dances, weddings, photos, etc.)	66.7% (34)	20.0% (2)	60.9% (56)	17.4% (4)
Tanning relaxes me	60.8% (31)	40.0% (4)	52.2% (48)	17.4% (4)
I have more self-confidence when I am tan	47.1% (24)	30.0% (3)	42.4% (39)	34.8% (8)
I tan to prepare for vacation	37.3% (19)	60.0% (6)	27.2% (25)	21.7% (5)
I tan to treat skin conditions (psoriasis, acne, etc.)	31.4% (16)	30.0% (3)	14.1% (13)	4.3% (1)
I have increased energy when I am tan	13.7% (7)	40.0% (4)	3.3% (3)	8.7% (2)
Friends have influenced my decision to tan	11.8% (6)	30.0% (3)	21.7% (20)	13.0% (3)
My boyfriend/girlfriend has influenced my decision to tan	11.8% (6)	30.0% (3)	6.5% (6)	21.7% (5)
Family has influenced my decision to tan	7.8% (4)	10.0% (1)	5.4% (5)	4.3% (1)
I tan to make sure I am getting enough vitamin D	7.8% (4)	40.0% (4)	2.2% (2)	8.7% (2)
Tanning puts me in a better mood	5.9% (3)	30.0% (3)	19.6% (18)	8.7% (2)
Tanning beds/booths are safer than getting tan via natural sun	0.0 (0)	20.0% (2)	0.0 (0)	0.0 (0)
Media/celebrities have influenced my decision to tan	0.0 (0)	10.0 (1)	3.3 (3)	0.0 (0)

here in town, so I work there" or "I tan for free"; and allusions to efficacy and efficiency, such as "to prevent burning" or "it gives results quickly." Write-in responses closely related to relaxation were also obtained: "I get the best naps in the tanning bed" or "time to myself." Further, write-in responses related to mood were reported: "it helps with depression" or "I feel better when I am tanned." Lastly, one write-in suggested the addictiveness of tanning, "it's an addiction."

Discussion

Among a sample of community college students in 5 non-coastal, rural counties in eastern North Carolina, the prevalence of ever using tanning beds was 37% with approximately 62% never using tanning beds. Of all survey respondents, white women were the most likely to be current or former tanning bed users. Appearance-driven motivations were the primary reasons for tanning bed use ("I look better when I tan") among both male (100%) and female (84%) respondents.

Our findings are consistent with previous research on reasons for tanning bed use. Appearance-driven motivations (look better, prepare for vacation) are some of the most commonly cited and most studied factors for tanning bed use [11-17]. Unique to this study was the inclusion of males in the sample, who also reported appearance-driven motivations as the main reason for tanning bed use. In addition, 7 black students reported ever use of tanning facilities.

Findings among the write-in responses were reasons related to convenience of use such as free or low cost. These free or low-cost tanning opportunities appear to be marketed to college age women in particular. In many eastern North Carolina college towns, rental apartment complexes market tanning beds as an inclusive benefit. Furthermore, the density of tanning bed facilities mirrors the distribution

of colleges and universities throughout North Carolina [9]. One study found that tanning facilities were more likely to be built in neighborhoods with a higher percentage of women aged 15-29 years [24]. Given the growing trend of tanning devices for zero- or low-cost at workout facilities or apartment complexes, tanning beds as a marketing incentive warrants further study.

Despite the potential health risk, the tanning industry is loosely regulated in the US and is growing rapidly, with an estimated 10% of Americans patronizing indoor tanning facilities each year [25]. Tanning facilities in North Carolina are regulated by the Radiation Protection Section, Division of Health Service Regulation in the North Carolina Department of Health and Human Services. Facilities are inspected bi-annually to comply with tanning bed safety requirements, and operators must maintain a certification to operate.

Findings indicate that young adults who feel more attractive with a tan are being targeted for tanning services, are demanding tanning services, or both. An opportunity exists to provide educational interventions regarding the dangers of tanning bed use to college age adults. Nonetheless, warning those motivated to tan about damage to physical appearance from tanning may not be a deterrent [26].

There are several limitations to this study. A small sample size obtained from a convenience sample of students attending class on a particular day limits generalizability to young adults in North Carolina. It should be noted that although survey response rates were high (95%), class attendance at some sites was low on the day the survey was distributed. This could introduce some bias among those who were not present for survey distribution. Behavior was also assessed by self-report, which may not correspond to actual tanning bed use.

In contrast, this study has several strengths. Those sampled are likely to be representative of the community college population since they were sampled from freshman-level required courses. Presence of the researcher, distribution at beginning of class time, and immediate collection contributed to the 95% response rate. While most studies evaluated reasons women frequent tanning beds, this study included assessment of both males and females and included an array of potential reasons for tanning providing novel insight not seen in previous studies.

This study found appearance-based factors to be the most common motivator for tanning bed use among community college students in North Carolina. Strategies are necessary to decrease the number of young adults using tanning facilities and thereby reduce repeated exposure to a known carcinogen. While females may be the primary target group, findings from this cross-sectional survey suggest that all races and both sexes should be included in intervention strategies among college students to decrease the use of tanning facilities. NCMJ

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