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To the Editor,

In 2013, 1.9 million US men reported tanning indoors. Existing research largely target teen and young adult female tanners, and less is known about male tanning behavior. Using Survey Sampling International, we recruited a nationally representative sample of 773 adults who intend to use or used an indoor tanning bed. Participants reporting a lifetime history of tanning indoors (n=636; 33.5% male) were included.

The survey measured tanning frequency, tanning dependence, tanning location (salon, non-salon business, home), and influences on tanning location selection (1=strongly disagree, 5=strongly agree). Two or more affirmative responses on the 7-item Behavioral Addiction Indoor Tanning Screener (BAITS) confirmed tanning dependence. Participants were also surveyed about smoking, weekly soda consumption, and binge drinking (5 or more alcoholic beverages within a couple of hours) in past month.

The University of Massachusetts Medical School institutional review board granted ethics approval. Bivariate comparisons were done using \( \chi^2 \) tests, independent samples t tests, and Wilcoxon rank sum tests, as appropriate using SAS/Stat Version 9.3 (SAS Institute Inc., Cary, NC).

No significant differences were found between men (mean [SD], 6.0 [16.9]) and women (mean [SD], 6.0 [22.7]) in past year indoor tanning visits (\( P=.58 \); See Table 1). However, men were significantly more likely to meet the BAITS tanning dependence threshold (49.3% vs 29.6%, \( P=.001 \)). Men were more likely to tan in private residences (30.5% vs. 19.4%, \( P=.002 \)). For factors influencing tanning location selection, men gave significantly higher ratings to the ability to get other services at the same time (3.7 vs.
3.3, \( P = .004 \)), ability to tan with fewer rules (3.6 vs. 3.2, \( P < .001 \)), and ability to use a
tan as a workout reward (3.6 vs. 3.3, \( P = .002 \)). Women gave significantly higher ratings
to cleanliness (4.3 vs. 4.1, \( P = .06 \)) and cost (4.2 vs. 3.9, \( P = .001 \)).

Male tanners were more likely to smoke (59.2% vs 38.8%, \( P = .001 \)), reported
more binge drinking in the past month (mean [SD], 4.7 [6.9] vs. 2.2 (4.2), \( P < .0001 \)) and
had higher weekly soda consumption (mean [SD], 13.7 [27.0] vs. 8.1 [12.6], \( P < .0001 \)).

Male tanners were significantly more ethnically diverse than female tanners (\( P = .002 \),
See Table 1).

Results revealed that while men and women tan at a similar frequency, men
were more likely to screen positively for tanning dependence. Men had higher rates of
comorbid risk behaviors consistent with prior research identifying associations between
tanning dependence and alcohol addiction.\(^3\) Men had higher rates of tanning in private
residences, where unsupervised tanning duration could facilitate dependence.

Tanning salon regulations may have less impact on reducing male tanning. Male
tanners preference for settings that offer additional services may provide opportunities
for targeted interventions.

Male tanners had a greater proportion of minorities than female tanners which is
consistent with prior research.\(^4\) Other studies have shown that sexual minority men have
higher tanning rates than heterosexual men.\(^5\) Studies that have explored largely white
samples or did not assess sexual orientation may have painted an incomplete picture of
male indoor tanning.

Future research is needed to better understand the characteristics and
motivations of male indoor tanners.
REFERENCES


**Table 1. Participant Characteristics by Gender**

<table>
<thead>
<tr>
<th></th>
<th>All (n=636)</th>
<th>Men (n=213)</th>
<th>Women (n=423)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>36.2 (12.9)</td>
<td>36.9 (12.7)</td>
<td>35.9 (12.9)</td>
<td>.34</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td>.002</td>
</tr>
<tr>
<td>% White</td>
<td>76.4%</td>
<td>68.5%</td>
<td>80.4%</td>
<td></td>
</tr>
<tr>
<td>% Hispanic</td>
<td>10.7%</td>
<td>12.7%</td>
<td>9.7%</td>
<td></td>
</tr>
<tr>
<td>% Other</td>
<td>12.9%</td>
<td>18.8%</td>
<td>9.9%</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>% High school or GED</td>
<td>13.3%</td>
<td>9.9%</td>
<td>15.1%</td>
<td></td>
</tr>
<tr>
<td>% Some college</td>
<td>23.5%</td>
<td>19.8%</td>
<td>25.4%</td>
<td></td>
</tr>
<tr>
<td>% Associate or Bachelor</td>
<td>46.5%</td>
<td>48.1%</td>
<td>45.7%</td>
<td></td>
</tr>
<tr>
<td>% Graduate</td>
<td>16.7%</td>
<td>22.2%</td>
<td>13.9%</td>
<td></td>
</tr>
<tr>
<td>Health Behaviors</td>
<td></td>
<td></td>
<td></td>
<td>.001</td>
</tr>
<tr>
<td>Smoker</td>
<td></td>
<td></td>
<td></td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Number of cans of soda</td>
<td>45.6%</td>
<td>59.2%</td>
<td>38.8%</td>
<td></td>
</tr>
<tr>
<td>consumed per week, mean (SD)</td>
<td>10.0 (18.9)</td>
<td>13.7 (27.0)</td>
<td>8.1 (12.6)</td>
<td></td>
</tr>
<tr>
<td>Number of days in the past 30 with 5 or more alcoholic beverages consumed, mean (SD)</td>
<td>3.0 (5.4)</td>
<td>4.7 (6.9)</td>
<td>2.2 (4.2)</td>
<td></td>
</tr>
<tr>
<td>Skin type</td>
<td></td>
<td></td>
<td></td>
<td>.36</td>
</tr>
<tr>
<td>% Always/usually burn</td>
<td>33.7%</td>
<td>33.8%</td>
<td>33.6%</td>
<td></td>
</tr>
<tr>
<td>% Sometimes mild burn, tan uniformly</td>
<td>35.7%</td>
<td>38.5%</td>
<td>34.3%</td>
<td></td>
</tr>
<tr>
<td>% Rarely or never burn</td>
<td>30.7%</td>
<td>27.7%</td>
<td>32.2%</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Tanning Behavior by Gender

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of indoor tanning in past year, mean (SD)</td>
<td>6.0 (16.9)</td>
<td>6.0 (22.7)</td>
<td>.58</td>
</tr>
<tr>
<td>Tanning Location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salon Only</td>
<td>91 (42.7%)</td>
<td>217 (51.3%)</td>
<td>.007</td>
</tr>
<tr>
<td>Non-Salon Business</td>
<td>57 (26.8%)</td>
<td>124 (29.3%)</td>
<td></td>
</tr>
<tr>
<td>Home Tanner</td>
<td>65 (30.5%)</td>
<td>82 (19.4%)</td>
<td></td>
</tr>
<tr>
<td>Tanning dependence/behavioral addiction</td>
<td>49.3%</td>
<td>29.6%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Factors influencing tanning location choice, mean (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to tan and get other services at the same time</td>
<td>3.7 (1.06)</td>
<td>3.3 (1.14)</td>
<td>.004</td>
</tr>
<tr>
<td>Ability to tan with less rules and regulations</td>
<td>3.6 (1.01)</td>
<td>3.2 (1.14)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Ability to reward myself with a tan after I workout</td>
<td>3.6 (1.11)</td>
<td>3.3 (1.14)</td>
<td>.002</td>
</tr>
<tr>
<td>Cleanliness</td>
<td>4.1 (.97)</td>
<td>4.3 (.91)</td>
<td>.06</td>
</tr>
<tr>
<td>Cost</td>
<td>3.9 (.93)</td>
<td>4.2 (.90)</td>
<td>.001</td>
</tr>
<tr>
<td>Convenience</td>
<td>4.1 (.89)</td>
<td>4.2 (.86)</td>
<td>.06</td>
</tr>
<tr>
<td>Professionalism</td>
<td>3.9 (.93)</td>
<td>4.0 (.90)</td>
<td>.28</td>
</tr>
</tbody>
</table>
Acknowledgment section

**Author Contributions:** Dr. Pagoto had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Hillhouse, Pagoto.

Acquisition, analysis, or interpretation of data: All authors.

Drafting of the manuscript: Feng, Nahar, Pagoto

Critical revision of the manuscript for important intellectual content: Feng, Hillhouse, Pagoto.

Statistical analysis: Frisard.

Obtaining funding: Hillhouse, Pagoto.

Administrative, technical, or material support: Frisard, Oleski

Study supervision: Hillhouse, Pagoto.