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Motives for intentional sunlight exposure among young adult sexual minority men: appearance, relaxation, and socialization in a cohort study

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Lifetime skin cancer prevalence is 25% higher among gay men and 46% higher among bisexual men compared to heterosexual men, making sexual minority men (SMM) an at-risk group for skin cancer.¹ These elevated skin cancer rates may be attributed in part to indoor tanning among SMM, some of whom are motivated to indoor tan by perceived body image standards, appearance concerns, and affect regulation.²

A promising decline in indoor tanning rates among United States (US) adults from 2007-2018 has followed the passage of legislation limiting youth access to indoor tanning in several states including Illinois.³ While SMM's indoor tanning has been described, less is known about the prevalence and motives for outdoor tanning. We addressed this gap by surveying tanning motives and behaviors among young adult SMM in urban and suburban Chicago, who participated in a longitudinal survey focused on SMM health behaviors.

In consultation with experts from Northwestern University's Institute for Sexual and Gender Minority Health and Wellbeing, we adapted seven tanning motive survey items from prior research for use in surveying young adult SMM (Table). During this adaptation, we developed the hypothesis that young SMM may be tanning as a social activity, e.g. SMM gather to relax and socialize at the beach/pool. Prior to the survey, we tested the reliability of the screening and tanning motive items in a separate sample of 50 SMM and found strong evidence of test-re-test reliability across 2 weeks (item alphas from 0.93 to 0.75) (Table). Survey measures also included frequency of outdoor tanning in the past summer months (June, July, August 2019) as well as indoor tanning and sunless tanning for the past 3 months. From September 2019-February 2020, the items were incorporated into the online longitudinal survey of young adult SMM [mean age 25 years (range 16-30)]. The study was considered exempt by the Institutional Review Board of Northwestern University. Analysis was performed with SPSS 22.0.

Among the 537 SMM, who were all assigned male at birth and currently identify as male, there was no statistically significant difference for age between those who never (n=442) and those who ever purposely (intentionally) tanned (n=95) [M= 24 years (SD=2.8)]. Any lifetime tanning was

significantly associated with being White or Hispanic/Latino (χ^2 , $p<0.0001$), a college graduate (χ^2 , $p=0.0012$), and employed full time (χ^2 , $p=.050$). Participants tanned outdoors 2-3 times (46%), 4-5 times (22%), 6-10 times (25%) and more than 10 times (7%) in the previous three summer months. Twelve SMM reported indoor tanning. Frequent outdoor tanners reported significantly higher agreement on motives related to appearance ($p=.002$), relaxation ($p=.001$), and socialization ($p=.004$) compared to occasional tanners (Table).

Young adult SMM outdoor tanners in our sample were less concerned with developing skin cancer than feeling more confident with a tan or needing protection from the sun. (Table). However, outdoor tanners agreed that tanning was motivated by going out with others as a social activity. This finding is consistent with a study of San Francisco SMM who reported the importance of their community, notably their female friends, in encouraging indoor tanning as a group activity.⁴ Among adolescent boys, the tendency to conform to peer expectations and experiencing appearance-related criticisms in conversations with friends were associated with sunbathing and using a tanning booth.⁵ Limitations of our study include this urban and suburban Chicago area regional sample not being generalizable to other SMM populations and a survey duration of 6 months.

Legislation passed in Chicago in 2012 and in Illinois in 2013 to limit access to indoor tanning to individuals 18 years or older may have been a key factor in the low rate (6.5%) of indoor tanning reported among the surveyed Chicago area young adult SMM.⁶ State legislation and the corresponding media coverage may have acted as a “risk signal” that indoor tanning is dangerous, which was amplified as it passed through information channels. Interventions to discourage social outdoor tanning among young adult SMM may benefit from a dissonance-based intervention approach designed to teach skills to young SMM to resist perceived social pressures to tan and boost self-perceptions of a positive body image.⁷ Finally, it is notable that although SMM tanners report social reasons as an important motive for tanning, the majority of participants did not report intentional outdoor tanning. This suggests the potential value of a social norms communication campaign designed to correct misperceptions about the high prevalence of tanning among SMM by

emphasizing the low overall rates of tanning within young SMM communities while promoting sun protection during social outdoor activities.⁸

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Table. Purposeful (Intentional) Outdoor Tanning Motives

Survey questions +	Test-retest reliability (alpha) ^a	Occasional tanning, 2-10 times in 3 months Likert scale Mean (SD) (n=88)	Frequent tanning, > 10 times in 3 months Likert scale Mean (SD) (n=7)	ANOVA <i>P</i> value
Most other gay and bisexual guys like me feel more attractive with a tan.	(0.91)	3.64 (1.01)	3.81 (1.05)	0.02 [^]
Tanning (indoors or outdoors) helps me relax.	(0.87)	4.10 (0.78)	4.29 (0.70)	0.001 [^]
Most other gay and bisexual guys like me feel more confident with a tan.	(0.85)	3.09 (0.80)	3.03 (1.13)	0.34
Most other gay and bisexual guys like me go tanning (indoors or outdoors) with others as a social activity.	(0.93)	4.09 (0.80)	4.55 (0.31)	0.004 [^]
It is important to protect my skin from the sun.	(0.84)	3.07 (0.73)	3.00 (1.10)	0.66
How concerned are you about developing skin cancer?	(0.79)	2.86 (0.86)	3.00 (1.41)	0.16
If I don't protect my skin from the sun, I feel that my chances of getting skin cancer in my lifetime are high.	(0.75)	3.01 (0.88)	3.07 (1.50)	0.29

+The 95 participants who responded to these survey questions gave a “yes” response to the screening question: Have you ever purposely (intentionally) tried to get a tan to make your skin tone darker with either indoor tanning or spending time outdoors in the sun? The screening

question was incorporated into an online longitudinal study (RADAR) that regularly surveys SMM age 16-30.

*Likert scale 1= strongly disagree (not at all concerned), 3= neither agree nor disagree, 5= strongly agree (extremely concerned)

^ significant at $p < .05$

^a reliability estimates are from a pre-survey test of the measures with a separate sample of 50 sexual minority males