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Counseling about Skin Cancer Prevention among Adolescents: What do Parents Receive from Healthcare Providers?

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Abstract

BACKGROUND—Adolescence is a high-risk period for ultraviolet radiation exposure, a primary cause of skin cancer later in life.

METHODS—In 2016, we conducted an online survey with a national sample of parents of adolescents ages 11–17 ($n=1,253$). Multivariable logistic regression assessed correlates of receiving counseling from a healthcare provider about any of six skin cancer prevention (SCP) topics.

RESULTS—Only half (49%) of parents recalled discussing any SCP topic with their child's provider; prevalence was highest for sunscreen (39%) and lowest for indoor tanning (3%). Parents had greater odds of receiving counseling if they had: a child with more sun-reactive skin (OR=1.53); a family history of skin cancer (OR=1.38); or a higher quality relationship with the provider (OR=1.47) (all $p<.05$).

CONCLUSIONS—Greater attention to SCP counseling is needed, especially for exposures such as indoor tanning that remain prevalent among adolescents but are rarely addressed in clinical encounters.

Keywords

adolescents; anticipatory guidance; preventive services; skin cancer

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Conflicts of interest: None

INTRODUCTION

Adolescence is a high-risk period for ultraviolet (UV) radiation exposure, a leading cause of skin cancer.[1] Preventive behaviors such as use of broad-spectrum sunscreen, wearing protective clothing, seeking shade, and limiting time outdoors during midday hours are most effective if initiated early in life.[1] To reduce UV exposure and related increases in lifetime risk of skin cancer, provider-delivered counseling about skin cancer prevention (SCP) is recommended by professional organizations.[2, 3]

A growing body of research has examined adolescent preventive clinical services.[4, 5] However, few studies have examined SCP counseling, with existing research focusing primarily on studies with healthcare providers.[6, 7] Despite being key decision-makers about their children's health, the experiences of parents are largely absent. Furthermore, data from parents on counseling about use of indoor tanning devices (e.g., sun lamps, tanning beds)—a common behavior among adolescents that carries serious health consequences [1, 8]—is nonexistent. We sought to characterize parental receipt of provider-delivered SCP counseling, including indoor tanning, for their children.

METHODS

Participants and procedures

In 2016, we conducted an online survey with a national sample of parents of children ages 11–17 (hereafter “adolescents”). Respondents were members of a standing panel of U.S. adults recruited using a dual-frame, probability-based sampling approach that combines list-assisted, random-digit dialing and address-based sampling.[9] As an incentive for completing surveys, panel members accumulate points toward small cash payments. A total of 1,253 panelists met eligibility criteria, provided consent, and had complete data for the present analysis (response rate=59%) . Harvard Pilgrim Health Care Institute's Institutional Review Board approved the study.

Measures

The survey assessed whether parents had ever talked with their child's provider about 6 SCP topics [2, 3] including: sun protection, skin exams, and indoor tanning. Given the lack of data on counseling about indoor tanning in previous research, we asked follow-up questions of respondents who indicated they had talked about this topic. Items assessed parents' perceptions of provider messages about safety, and whether counseling influenced their likelihood to give their child permission to indoor tan. We also assessed: the child's propensity to sunburn (“skin sun reactivity”), family history of skin cancer, quality of parent's relationship with their child's healthcare provider [10], and demographics.

Analytic Plan

Multivariable logistic regression assessed correlates of receipt of any SCP counseling, controlling for variables bivariately associated ($p < .10$). We used chi-square analyses to compare discussions by child's skin sun-reactivity. We conducted analyses using Stata version 14.0 (Statacorp, College Station, TX).

RESULTS

Characteristics of respondents and their children are provided in Table 1. Fewer than half (49%) of parents recalled discussing any of the assessed SCP topics with their child's healthcare provider. In the multivariable model, parents had greater odds of receiving SCP counseling if they had: a child whose skin was more sun-reactive (OR=1.53, 95% CI=1.17–2.01); a family history of skin cancer (OR=1.38, 95% CI=1.47–1.85); or higher quality relationships with their child's provider (OR=1.47, 95% CI=1.17–1.85). Parents with a college degree or more education also had greater odds of receiving counseling (OR=1.47, 95% CI=1.08–2.00). Those living in the Midwest had lower odds than those in other U.S. regions (OR=0.66, 95% CI=0.46–0.94).

Parents most commonly reported counseling about using sunscreen (39%) and checking skin for unusual changes (25%); only 3% of parents recalled discussing use of indoor tanning devices. The topics discussed varied by the child's skin type (Figure 1); a greater proportion of parents whose children had more (vs. less) sun-reactive skin reported counseling about most topics. Of the 42 parents who discussed indoor tanning, 79% reported that the provider said it was unsafe, and 52% reported that the conversation made them less likely to give their child permission to indoor tan.

DISCUSSION

Despite guidelines, this national study found that parents' reported receipt of SCP counseling is low, similar to provider reports [7] and to preventive counseling about other recommended health topics.[4, 5] SCP counseling was somewhat more prevalent among parents whose children had sun-reactive skin or who had a family history of skin cancer. Nevertheless, more than 2 out of 5 of these parents did not recall discussing any of the assessed topics with their child's provider, indicating missed opportunities for counseling those at higher risk.

Discussions about all SCP topics were suboptimal, but those about indoor tanning were particularly low. Providers view indoor tanning as the least important among SCP counseling topics [6], yet it is a behavior that directly increases skin cancer risks and 2013 data suggest it remains prevalent, with an estimated 1.9 million high school students reporting indoor tanning within the last year.[8] Documented barriers to delivering SCP counseling include time and reimbursement [6], which may be further compounded by the perception that parents do not value SCP discussions or are reluctant to comply with recommended prevention practices.[6] However, we found that such counseling was associated with higher quality parent-provider relationships and satisfaction. Furthermore, of the few parents in our sample who recalled discussing indoor tanning, most received the message that it is unsafe and about half reported the discussions made them less likely to give their children permission to indoor tan. This suggests SCP counseling may have the potential to change parents' intent to engage in protective behaviors.

This study offers novel data on counseling about SCP, and is strengthened by a large, national sample. Potential limitations include self-reported, cross-sectional data and a lack of

data on adolescents' SCP behaviors and health services use. Parental report of "ever" discussing SCP as a proxy for provider behavior may be subject to recall bias and does not capture discussions providers may have had directly with adolescent patients. Thus, our findings may underestimate the prevalence of SCP counseling, particularly indoor tanning which may be more likely to occur in the context of confidential discussions with older adolescents.

Together, our findings point to the need for greater attention to recommended SCP counseling, especially for avoidable UV exposures such as indoor tanning that are rarely addressed in clinical encounters. Future research is needed to better understand provider- and practice-level barriers, and to evaluate interventions for delivering effective SCP counseling.

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Abbreviations

SCP	skin cancer prevention
UV	ultraviolet

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IMPLICATIONS AND CONTRIBUTION

Guidelines recommend skin cancer prevention counseling for adolescents and their families. Findings from this national study suggest that parents' receipt of counseling is low, even for those with adolescents at increased risk. Greater attention to skin cancer prevention is needed, especially for prevalent and avoidable exposures, such as indoor tanning.

Figure 1.

Receipt of skin cancer prevention counseling on specific topics, by child's skin sun-reactivity. Skin reactivity was based on parental report of how their adolescent's skin would react if he/she spent 1 hour in the mid-day sun for the first time in the summer (low= mild sunburn followed by moderate tan; no sunburn, followed by deep tan; no burn or tan; high=develops a painful burn and either no tan or a light tan). Asterisks indicate statistically significant differences ($p < .05$) in chi-square analyses.

Sample characteristics and correlates of parental receipt of counseling about skin cancer prevention for adolescents

Table 1

	Received counseling about any skin cancer prevention topic ^d					
	n	(%)	Bivariate		Multivariable	
			OR	(95% CI)	OR	(95% CI)
Received counseling about any skin cancer prevention topic						
No	642	(51)	--		--	
Yes	611	(49)	--		--	
Child characteristics						
Sex						
Male	657	(52)	Ref		--	
Female	596	(48)	1.12	(0.89–1.39)	--	
Age (years)						
11–12	336	(27)	Ref		--	
13–15	518	(41)	1.01	(0.77–1.33)	--	
16–17	399	(32)	0.98	(0.73–1.32)	--	
Race						
White, non-Hispanic	772	(62)	Ref		--	
Black, non-Hispanic	110	(9)	0.72	(0.48–1.08)	--	
Hispanic	264	(21)	1.21	(0.91–1.60)	--	
Other, non-Hispanic ^b	107	(9)	0.75	(0.50–1.13)	--	
Skin reactivity ^c						
Less sun-reactive skin	955	(76)	Ref		Ref	
More sun-reactive skin	298	(24)	1.45	(1.12–1.89)**	1.53	(1.17–2.01)**
Parent characteristics						
Sex						
Male	610	(49)	Ref		--	
Female	643	(51)	1.07	(0.86–1.34)	--	
Educational attainment						
High school degree or less	502	(40)	Ref		Ref	

	Received counseling about any skin cancer prevention topic ^d					
	n	(%)	Bivariate		Multivariable	
			OR	(95% CI)	OR	(95% CI)
Some college, no degree	328	(26)	1.25	(0.95–1.65)	1.31	(0.97–1.76)
College degree or more	423	(34)	1.63	(1.25–2.11)***	1.47	(1.08–2.00)*
Family history of skin cancer ^d						
No	1008	(82)	Ref		Ref	
Yes	214	(18)	1.5	(1.1–2.0)**	1.38	(1.02–1.88)*
Household characteristics						
Annual income						
<\$35,000	263	(30)	Ref		Ref	
\$35,000–\$74,999	352	(28)	0.92	(0.67–1.27)	0.86	(0.62–1.21)
\$75,000	639	(51)	1.30	(0.97–1.73) [†]	1.03	(0.74–1.44)
Region of residence in the U.S.						
Northeast	221	(18)	Ref		Ref	
Midwest	206	(24)	0.68	(0.48–0.96)*	0.66	(0.46–0.94)*
South	433	(35)	1.00	(0.72–1.38)	0.95	(0.68–1.34)
West	293	(23)	1.00	(0.71–1.42)	1.00	(0.69–1.44)
Healthcare-related characteristics						
Adolescent has health insurance coverage						
No	69	(6)	Ref		--	
Yes	1184	(94)	0.99	(0.60–1.59)	--	
Parent-provider relationship quality ^e						
Low	640	(51)	Ref		Ref	
High	613	(49)	1.43	(1.15–1.79)**	1.47	(1.17–1.85)**

Note. Percentages may not total 100 due to rounding. OR: odds ratio. CI: confidence interval. Dashes (--) indicate the variable was not included in the multivariable model because it was not associated at $p < .10$ in bivariate analyses.

^aTopics included: using sunscreen; wearing clothing, like hats, to block sun; limiting time outdoors during midday hours; seeking shade when outdoors; using indoor tanning devices; and checking skin regularly for unusual changes.

^bOther race includes adolescents whose parents identified them as Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, more than one race, or none of these.

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c, Based on parental report of how their adolescent's skin would react if he/she spent 1 hour in the mid-day sun for the first time in the summer (low= mild sunburn followed by moderate tan; no sunburn, followed by deep tan; no burn or tan; high= develops a painful burn and either no tan or a light tan).

d, Excludes 31 respondents who refused to answer this question.

e, Based on mean of 4 items assessing: overall satisfaction with the adolescent's healthcare as well as having information needs met, spending enough time, and trust in the adolescent's healthcare provider (α=.81). Low=mean score at or below the median; high=mean score above the median).

f, $p<.10$,
* $p<.05$,
** $p<.01$,
*** $p<.001$