Adolescent health brief

Health Disparities Among Different Ethnic and Racial Middle and High School Students in Sun Exposure Beliefs and Knowledge

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Abstract

Racial and ethnic differences may influence sun protection behavior. Adolescent students were administered a sun protection questionnaire and educational program. White people had the greatest pretest knowledge which resulted in the highest score, and blacks and Hispanics scored lower. White people who found tanned individuals attractive had greater score improvements. All groups improved after intervention. © 2010 Society for Adolescent Health and Medicine. All rights reserved.

The incidence of skin cancer varies by gender, age, racial, and ethnic background [1]; however, whether personal beliefs and knowledge about sun protection correspond to these health disparities is unknown. Despite lower incidences of melanoma in Hispanic and blacks, these populations carry a worse prognosis than whites, which has been attributed to possible delays in presentation and diagnosis, as well as a greater prevalence of acral lentiginous melanomas [2, 3]. The delay in diagnosis among darker-skinned individuals may reflect lower skin cancer awareness since most sun protection programs have predominantly targeted whites [4].

This study's goal was to examine how sun-exposure beliefs and knowledge vary in teenagers from differing demographics and develop targeted sun protection education addressing the population's health disparities. We have previously published the aggregate results of the intervention. In this article, specific knowledge was correlated to participant background [5] and we addressed whether particular beliefs about sun-exposure influence sun protection knowledge and the ability to learn new information regarding sun protection.

Methods

An Institutional Review Board-approved anonymous survey was distributed to public middle and high school students. The survey was part of an educational intervention which included a pretest, a 30-minute lesson on sun protection, and a posttest [5]. The survey asked students to evaluate statements about sun protection and their perception of tanning on appearance. Participant demographics (age, gender, grade, ethnicity, and race) were obtained via a background survey. Microsoft Excel v.11 (Redmond, WA) was used to evaluate the data. Pretest performance overall and between groups was evaluated using Chi-square; race and ethnicity of participants versus performance on pretest, posttest, and change in score were evaluated using two-sided t tests.

Results

Sample

A total of 1,214 adolescents in grades 6–12 completed the survey and pretest; 809 adolescents completed all parts of the study. The sample had a comparable representation of males

Table 1
Sun protection pretest scores by ethnicity and race

	Total	Hispanic	Non-Hispanic	Asian	Non-Asian	White	Non-White	Black	Non-Black
Beliefs									
Tanning makes people look more attractive		n = 266	n = 696	n = 166	n = 975	n = 467	n = 674	n = 112	n = 1029
True	55%	61%	55%	40%	58%	64%	50%	38%	57%
False	45%	39%	45%	60%	42%	36%	50%	62%	43%
			p = .106[a]		p = .001		p < .001		p < .001
Tanning makes people look older		n = 272	n = 702	n = 168	n = 986	n = 468	n = 686	n = 117	n = 1037
True	28%	27%	28%	28%	28%	28%	28%	29%	28%
False	72%	73%	72%	72%	72%	72%	72%	71%	72%
			p = .893		p = .975		p = .830		p = .830
Knowledge									
Sun exposure can contribute to skin cancer		n = 268	n = 694	n = 158	n = 978	n = 460	n = 676	n = 117	n = 1019
True	89%	88%	91%	89%	89%	90%	88%	85%	89%
False	3%	2%	2%	5%	2%	2%	3%	2%	3%
Do not know	9%	10%	6%	6%	9%	7%	9%	14%	8%
			p = .225		p = .055		p = .351		p = .095
When using sunscreen, you can tan without hurting your skin		n = 272	n = 689	n = 158	n = 978	n = 461	n = 675	n = 117	n = 1019
True	58%	63%	57%	45%	60%	62%	54%	51%	58%
False	24%	20%	25%	32%	23%	25%	23%	17%	25%
Do not know	19%	17%	17%	23%	18%	13%	23%	32%	17%
			p = .171		p = .002		p < .001		p < .001
No sun protection is needed after being sunburned		n = 271	n = 693	n = 159	n = 978	n = 461	n = 676	n = 115	n = 1022
True	26%	35%	24%	19%	28%	22%	29%	36%	25%
False	58%	48%	62%	67%	57%	67%	53%	43%	60%
Do not know	15%	17%	14%	13%	15%	11%	18%	21%	14%
			p < .001		p = .044		p < .001		p = .003
No sun protection is needed if it is cold outside		n = 272	n = 687	n = 159	n = 971	n = 460	n = 670	n = 112	n = 1018
True	8%	9%	8%	6%	9%	8%	8%	10%	8%
False	78%	71%	82%	84%	77%	83%	74%	64%	79%
Do not know	14%	20%	10%	11%	15%	8%	18%	26%	13%
			p < .001		p = .156		p < .001		p < .001
You can only tan after being sunburned		n = 269	n = 681	n = 154	n = 971	n = 460	n = 665	n = 114	n = 1011
True	6%	4%	5%	4%	6%	7%	5%	6%	6%
False	74%	73%	76%	71%	74%	77%	71%	61%	75%
Do not know	21%	23%	19%	25%	20%	16%	24%	32%	20%
			p = .455		p = .324		p = .003		p = .005
Sunscreen with both UVA and UVB coverage provides the best protection		n = 272	n = 688	n = 158	n = 974	n = 461	n = 671	n = 112	n = 1020
True	38%	35%	42%	40%	38%	46%	33%	25%	40%
False	6%	5%	7%	7%	6%	7%	6%	7%	6%
Do not know	56%	60%	51%	52%	56%	48%	61%	68%	54%
			p = .055		p = .779		p < .001		p = .011
Sunscreen of SPF less than 10 provides the best protection		n = 270	n = 682	n = 158	n = 967	n = 456	n = 669	n = 113	n = 1012
True	9%	9%	8%	11%	8%	6%	11%	15%	8%
False	48%	42%	54%	39%	50%	63%	38%	27%	50%
Do not know	43%	49%	38%	50%	42%	30%	52%	58%	41%
			p = .004		p = .035		p < .001		p < .001

[a] p Values compare between true to true values, and false to false values.