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Skin cancer risk perceptions: A comparison across ethnicity, age, education, gender, and income

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Abstract

Background—Studies of non-cutaneous and cutaneous malignancies support the hypothesis that poor risk-perception status contributes to health disparity.

Objective—We evaluated skin cancer risk perceptions across race and other demographic markers using the Health Information National Trends Survey (HINTS) and compared them to discover differences in perception that may contribute to the disparities in skin cancer diagnosis and treatment.

Methods—Respondents with no prior history of skin cancer were randomly selected to answer questions assessing perceived risk and knowledge of preventive strategies of skin cancer. Logistic regression was performed to identify associations between perceptions of skin cancer and demographic variables including self-described race, age, sex, education, income, and health insurance status.

Results—Blacks, the elderly, and people with less education perceived themselves as at lower risk of developing skin cancer. They, along with Hispanics, were also more likely to believe that one cannot lower their skin cancer risk and that there are so many different recommendations on how to prevent skin cancer that it makes it difficult to know which ones to follow. Lower education also correlated with greater reluctance to have a skin exam.

Limitations—HINTS is a cross-sectional instrument, thus it only provides a snapshot of skin cancer perceptions.

Conclusion—Uncertainty and altered perceptions are more common in the skin cancer risk perceptions of ethnic minorities, the elderly, and those with less education. These are the same

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groups that are subject to disparities in skin cancer outcomes. Educational programs directed at these demographic groups may help to reduce the skin cancer-related health disparities.

Keywords

malignant melanoma; nonmelanoma skin cancer; health disparities; risk perception

Research has demonstrated that perceived cancer risk predicts preventive behavior and lack of perceived risk is a barrier to risk reduction.¹⁻³ Blacks have higher cancer mortality than any other ethnic group in the U.S.⁴, yet, have inadequate risk-perception for malignancies such as breast cancer.¹⁻² Hispanics and Asians also perceive themselves as at lower risk of cancer.⁵ Education similarly predicts cancer risk-perception. A recent meta-analysis revealed that high school or less education significantly correlated with inaccurate breast cancer risk perceptions.² Poor individuals may also see themselves as less susceptible to disease, and thus are less likely to participate in preventive care.⁶ Studies on malignancies such as breast, colorectal, cervical and skin cancer, support the role of patient education in correcting risk perceptions;^{1, 7-10} however, screenings alone are unlikely to be sufficient to alter preventive behavior.¹

Poor patient perceptions increase the morbidity and mortality of malignant melanoma (MM).¹¹ In an analysis of perceptions of 106 MM patients, low knowledge of MM before diagnosis, poor understanding of treatment, and minimization of the seriousness of MM were all significantly associated with greater Breslow depth.¹¹ Conversely, history of nonmelanoma skin cancer (NMSC) affects patients' attitudes regarding personal risk and leads to improved tertiary prevention.¹²⁻¹³ These studies of non-cutaneous and cutaneous malignancies support the hypothesis that patient risk-perception contributes to health disparity making identification of SC risk-perception status vital for successful SC prevention and treatment. Though MM is more common in non-Hispanic whites (incidence 27.4 per 100,000) and high socioeconomic status (SES) persons¹⁴, blacks (incidence 1 per 100,000), Hispanics (incidence 4.5 per 100,000), those of low SES¹⁴⁻¹⁵, and older individuals frequently have advanced disease at diagnoses and/or increased mortality.^{4, 16-19} Despite the lower incidence of NMSC in minorities, blacks often present with later stage or more aggressive squamous cell carcinoma (SCC).¹⁷ Given disparities in SC incidence, morbidity and mortality across age, race, and SES, and evidence that poor risk-perception contributes to health disparity, we evaluated SC risk perceptions using the Health Information National Trends Survey (HINTS) and compared them across demographic markers to discover differences in perception that may contribute to SC-related disparities.

Methods

HINTS is a biannual National Cancer Institute cross-sectional survey that assesses Americans' cancer-related knowledge, attitudes, and behaviors.²⁰ One adult per household was sampled using list-assisted random-digit dialing of all U.S. telephone exchanges via the computer-assisted telephone interview (CATI) system.²¹ Sample size was 7003 and the overall response rate was 20.83%.²¹ Further details of the survey design are available in the referenced report.²¹ Skin cancer-related perceptions were examined in whites, blacks and Hispanics. Other racial/ethnic groups were not analyzed due to small sample size. Respondents were randomly assigned to answer questions about colon, lung or skin cancer in order to measure perceived risk and knowledge of prevention, detection, and management of each cancer. A total of 1246 respondents answered questions regarding SC. Statistical analysis: Multivariable logistic regression was performed and odds ratio calculated to investigate associations between the mental model of SC and demographic variables including self-described race, age, sex, education, income, and health insurance status. The

SURVEYLOGISTIC Procedure in SAS version 9.2 was employed to obtain weighted estimates of effects and to request variance estimation. SURVEYLOGISTIC was designed to analyze categorical data from surveys utilizing complex sampling designs. For further details on this method of analysis, please see the referenced resources.^{22–23} The jackknife method was employed for variance estimation to account for the complexity of the HINTS sampling design.^{20–23} To examine whether responses were associated with race after adjustment for gender, age, education, and income, logistic regression was applied. That process was repeated for analysis of all aforementioned SES variables.

Results

Of the 1246 respondents, 77.5% were white, 12.9% Hispanic, and 9.6% black (Table 1). Females represented 64.4%. Whites and blacks tended to have higher education than Hispanics, and whites reported overall higher income than blacks and Hispanics.

Racial background

Compared to whites, blacks viewed their likelihood of developing SC in the future as low ($p < 0.0001$) and their risk, compared to the average person of the same age, as low ($p < 0.0001$) (Table 2). Blacks also rarely worried about getting SC ($p = 0.0033$) and were less likely to agree with the phrase “It seems like everything causes skin cancer” ($p = 0.0452$). Blacks were less likely than whites to believe that SC is caused by behavior/lifestyle ($p = 0.0101$), but like Hispanics, blacks were more likely to think it is preceded by pain or other symptoms (blacks: $p = 0.0119$; Hispanics: $p = 0.0335$). Compared to whites, blacks less often considered regular skin exams important in increasing the chance of finding SC early ($p = 0.0009$). Both blacks ($p = 0.0414$) and Hispanics ($p < 0.0001$) were more likely to think that not much can be done to decrease risk of SC. When presented with the statement, “There are so many different recommendations about preventing skin cancer that it’s hard to know which ones to follow,” both Hispanics and blacks were more likely to agree than whites ($p < 0.0001$ and $p = 0.0143$, respectively). Blacks were more likely to believe SC’s 5-year survival rate is low ($p = 0.0394$).

Age

Compared to young adults (18–34), older respondents felt their risk of future SC was low ($p < 0.0001$) and less than an average person of the same age (Table 3). Those over the age of 75 reported less worry about developing SC ($p = 0.0002$), but more often agreed that there is not much one can do to prevent it ($p = 0.0096$). Like minorities and those with less education, older adults agreed that there is a lack of clarity on SC prevention strategies ($p = 0.0008$). Middle aged adults (50–64) more often believed that SC is caused by lifestyle ($p = 0.001$) and felt that regular SC exams are helpful in secondary prevention ($p = 0.0064$). This age group, along with those aged 35–49, also had more precise understanding of the overall high SC survival rate compared to the other age groups ($p < 0.0001$ and $p = 0.0037$, respectively).

Gender

Women tended to worry about developing SC more than men ($p = 0.0024$). They also more often believed there is little one can do to slow down or stop its development ($p = 0.0441$), yet understood that SC often presents without symptoms ($p < 0.0001$).

Education

Lower education level correlated with lower perceived risk of SC ($p = 0.0063$), less worry about developing SC ($p = 0.0144$), less knowledge of methods of SC prevention, (p

0.0030) and greater belief that SC's 5-year survival is low ($p = 0.0129$) (Table 4). Those without a college degree more often agreed that there are too many SC prevention recommendations to know what one should do ($p < 0.0001$). Lower education also was associated with belief that seemingly everything causes SC ($p = 0.0002$) and that symptoms such as pain precede its diagnosis ($p < 0.0022$). Those with less education also more often believed that regular skin exams are not helpful in detecting early SC ($p = 0.0118$) and were more likely to express reluctance to have a skin exam due to fear of having SC ($p < 0.0001$).

Income

Compared to those making less than \$25,000, respondents with incomes of greater than \$75,000/year perceived their future SC risk as low ($p = 0.0343$), worried less about developing SC ($p = 0.0176$), and felt that regular skin exams are not effective in catching early SC ($p = 0.0088$). Conversely, those earning less than \$25,000 were more likely to believe that seemingly everything causes SC ($p = 0.0247$).

Discussion

Racial disparities in SC have recently been highlighted in the medical literature.^{4,16, 24–27} Minorities more often have greater morbidity and mortality than whites for both MM and NMSC.^{4, 17–18, 28} The incidence of MM is rising dramatically in whites but is also increasing in blacks, Hispanics, and persons in low SES communities.^{14, 29} Low SES independently portends a poor MM prognosis and is associated with larger NMSCs.^{30–32} Lack of insurance and increased age also negatively impact SC outcomes.^{15, 27} Although demographic and socioeconomic factors play a role, these do not fully account for disparities in SC incidence, diagnosis, and treatment.²⁵ It is postulated that in addition to SES and cultural and social values, SC awareness affects the presenting stage of SC.³³

Analysis of HINTS data reveals that SC risk perceptions and knowledge differ across a number of demographic characteristics. These perceptions may play a role in patients' SC prevention strategies and treatment-seeking behaviors. Older adults, like minorities and the less educated, were at greater risk of having inaccurate SC risk perceptions. Age above 65 years portends greater overall MM risk and greater risk of an invasive tumor.^{14, 19, 29} Older age is strongly associated with thicker MM³⁴ and poorer outcomes.^{29, 35–36} Notwithstanding this, older patients with MM are less likely to receive clinically indicated sentinel lymph node biopsy.²⁷ Inability of some elderly patients to tolerate invasive surgical procedures may be a factor.³⁷ Mortality from NMSC also increases with age—especially for those 85 years and older.³⁸ Older adults in this study felt their risk of SC was low and worried less about getting SC. Reasons for this discrepancy between true and perceived risk are not known. Further research could examine why older adults have such perceptions.

Income also appears to predict SC risk perceptions. A 1995 survey of 1001 U.S. adults found that MM awareness increased with increasing income (up to \$40,000), but had no association with performance of self-skin examination.³⁹ Robinson et al.³¹ compared patients with giant NMSCs to matched controls and showed decreased concern about personal health and less faith in SC treatment in low-income patients. In contrast, our analysis indicates that those with higher incomes have less concern for development of SC and less faith in the preventive role of skin exams. Numerous studies have documented increased risk of MM in those of high income/SES.^{14, 40} International studies have revealed that NMSC is also more common in people with high income, thereby transitioning NMSC from “a disease of the poor to a disease of the rich.”^{41,42} This association is greater for BCC than SCC.⁴² Data are limited on the link between SES and NMSC incidence in the U.S. It is unclear why higher income HINTS respondents reported less worry about developing SC, but, given the definite increased risk for MM and the possible increased risk of NMSC based

on international data, these results are concerning. Such perceptions may affect behavior and, thereby play a role in increased SC incidence in this population.

Our study, as well as a previous less extensive analysis of the HINTS data,⁴³ showed that increased education level correlated positively with more accurate SC perceptions. Both low income and education level are risk factors for advanced stage MM diagnosis.^{14, 25, 27, 30, 34, 44–45} The incidence of MM is higher in those with more education,^{46–47} but prognosis is worse in those with less education.⁴⁰ NMSC may also be more common in those of higher education, though outcomes appear to be similar across SES.⁴² A recent Australian study of MM patients found that skin exams are twice as likely to have been performed on those with a college education compared to those with an elementary education, and history of such an exam was associated with thinner MM.³⁴ Low education level was the second strongest demographic risk factor for thick MM.³⁴ A U.S. study also found lower SC screening rates among the less educated.⁴⁸ In the Australian study, patients without a recent skin exam were also more likely to lack other age appropriate screenings (e.g., breast and prostate cancer).³⁴ This alludes to the effect of SES on preventive behaviors. Limitations in access to care likely contribute to later SC presentation. Imprecise SC risk perceptions in lower SES populations are likely due, at least partially, to inadequate public education.

Most of our significant findings with respect to ethnic background were in the perceptions by blacks. Black respondents were aware of their low risk of SC and, as expected, worried less about getting SC. NMSC in blacks is uncommon with an incidence of 3.4 per 100,000 and, in contrast to whites, SCC is the most common.^{26, 28, 49–51} MM is less common than NMSC in blacks with an incidence of 0.7 to 1 per 100,000.⁵² Despite this low incidence, morbidity and mortality are disproportionally high in blacks and Hispanics.^{16–18} SEER data from 1999–2006 indicate that the 5-year survival for blacks with MM is 74.1% (vs. 92.9% for whites).¹⁹

Blacks in our study were also less likely than whites to believe that SC is caused by behavior. There are multiple behaviors that lead to SC development. Given the diversity of skin types in blacks, it is evident that ultraviolet radiation (UV) plays a role in the development of some SCCs. In a review of 163 cases of SCC in blacks, Mora et al.⁵³ found that the most common site of SCC for both black men and women was the face (34%) followed by lower extremity (28%). In contrast, other studies found that SCC in blacks is more common in non-sun exposed skin.^{26, 50–51, 54} Compared to SCC in whites, these are more often associated with scarring, trauma, or inflammation.^{24, 26, 50, 53, 55–56} Such potentially preventable SCCs are more aggressive, with substantially greater mortality (approximately 20 to 30%).^{26, 50, 53}

BCC tends to be in sun-exposed skin, regardless of race.^{17, 50, 57–58} Although uncommon in blacks, BCC is more common in blacks with lighter skin.²⁶ This supports the notion that UV is likely a risk factor for BCC in patients of any ethnicity. The degree to which UV causes MM in blacks is unclear. The most common type of MM in blacks is acral lentiginous, and this does not have a direct association with UV.

Blacks and Hispanics more often believed that there is not much one can do to lower the risk of SC, that SC diagnosis is preceded by pain or other symptoms, and that there are too many recommendations about preventing SC to know which ones to follow. These indicate limited understanding of signs of SC and how to minimize SC risk. Lifestyle/behavior modifications can certainly reduce risk of many SCs—particularly those that are secondary to UV, scarring, trauma, or inflammation. Though some NMSCs present with bleeding or pain, symptoms in early, curable MM are the exception, rather than the rule.⁵⁹ In considering the

highly sensitive and specific ABCDE criteria dermatologists use and teach patients to identify MM⁶⁰, none of the criteria are symptoms. NMSCs are more often symptomatic, but are not universally so.

Other studies examining SC risk perceptions in minorities have shown similar results. Pipitone et al.¹³ found that lack of risk perception, diminished SC awareness, and lack of self-skin examination in Hispanics may contribute to delayed treatment. Kundu et al.⁷ showed in 71 patients with ethnic skin that most participants did not consider MM a risk in people of color and few performed self-skin examination. This data may explain why ethnic minorities present with advanced SC and disproportionately increased mortality.^{17–18, 28, 51–52}

The strongest markers of SC risk perceptions in HINTS were race, age, and education. Surprisingly, there were no statistically significant differences based on health insurance status. Previous work has shown that lack of health insurance is associated with later stage of MM diagnosis.¹⁵ The lack of relationship between health insurance status and SC risk perceptions may be because this survey assessed attitudes of people with no prior history of SC. Another possible explanation may be the fluidity of health insurance status compared to the other more static demographic measures.

HINTS is a cross-sectional instrument, which is a limitation to this study. Also, the HINTS questionnaire used the general phrase “skin cancer” rather than specific subtypes of cutaneous malignancy limiting the extent to which this data can be applied to specific entities such as MM. As the number of black and Hispanic respondents was relatively small, additional analyses of larger samples of these and other minorities will help to better define their risk perceptions. Lastly, the survey response rate was low. This is a limitation of this and other studies that rely on the HINTS database. There has been a steady decline in random-digit dialing survey response rates in recent years. Reasons for this include the presence of voicemail, use of cell phones in lieu of landline phones, and decreased willingness of the general population to complete phone surveys.²¹

Conclusion

Our analysis indicates that uncertainty and altered or inaccurate perceptions may be more common in the SC risk perceptions of elderly, ethnic minorities, and those with less education. Elderly subjects perceived their personal SC risk as lower than others their age and reported a lack of clarity on SC prevention strategies they should employ. Though the perception of low SC risk by blacks was accurate, the beliefs that SC is not caused by lifestyle/behavior choices, that SC risk cannot be reduced, and that SC is preceded by symptoms, were not accurate. Some of the responses of Hispanics and those with less education were similar. Altered awareness may be a reflection of cultural values, exposure to and interpretation of public and physician education, and SES, among other factors. Such views may help explain the advanced presentation of MM in minorities and the increased morbidity of MM and NMSC in minorities and low SES groups. Despite these concerns, high MM awareness and knowledge positively correlate with performance of self-skin examination³⁹ and knowledge based interventions^{7, 31, 61} can improve both MM- and NMSC-related attitudes and prevention behaviors. Australian SC prevention campaigns have dramatically increased SC awareness and this has led to increased SC screening.⁶² This provides compelling evidence that changing thoughts and attitudes regarding SC before it occurs through improved public education can increase patients’ awareness and prevention behaviors thereby reducing the disparity, morbidity, and mortality of SC in at-risk populations. The American Academy of Dermatology (http://www.skincarephysicians.com/skincancernet/skin_of_color.html), the Skin Cancer Foundation (<http://www.skincancer.org/>

[skin-cancer-and-skin-of-color.html](http://www.skin-cancer-and-skin-of-color.html)), and the Skin of Color Society (<http://www.skinofcolorsociety.org/skinDiseaseInformation.html>) have developed free online materials to educate patients of color about SC risks and prevention. Additional cost-effective public education directed toward those at greatest risk of SC and populations at risk for high morbidity and mortality are needed.

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Abbreviations and acronyms

MM	malignant melanoma
SCC	squamous cell carcinoma
BCC	basal cell carcinoma
NMSC	nonmelanoma skin cancer
SC	skin cancer
HINTS	Health Information National Trends Survey
CATI	computer-assisted telephone interview system
SES	socioeconomic status
OR	odds ratio
CI	confidence interval
UV	ultraviolet radiation

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Capsule Summary

1. Minorities and the socioeconomically disadvantaged have increased morbidity and mortality for melanoma and nonmelanoma skin cancer.
2. Skin cancer risk misperceptions are more prevalent in groups with poorer skin cancer outcomes. This indicates that awareness and knowledge may affect the presenting stage of skin cancer.
3. There is a need for public education directed toward not only those at greatest risk for skin cancer, but also toward those at-risk for high morbidity and mortality.

Table 1

Demographics

	<u>Total</u>	<u>Hispanic</u>	<u>White</u>	<u>Black</u>
	(100%)	(12.9%)	(79.9%)	(9.5%)
	n	%	n	%
Total	1246	161	966	119
Age				
18–34	265	43.5	160	35
	21.3%		16.6	29.4
35–49	382	63	279	40
	30.7%		28.9	33.6
50–64	305	19	262	24
	24.5%		27.1	20.2
65–74	159	5	137	17
	12.8%		14.2	14.3
75+	135	4	128	3
	10.8%		13.3	2.5
Gender				
Male	443	60	346	37
	35.6%		35.8	31.1
Female	803	101	620	82
	64.4%		64.2	68.9
Education				
<High School	167	60	83	24
	13.4%		8.6	20.2
High School	335	33	275	27
	27.6%		28.5	22.7
Some College	373	41	291	41
	29.9%		30.1	34.5
College Graduate	371	27	317	27
	29.8%		32.8	22.7
Income				
<25,000	351	71	245	35
	28.2%		25.4	29.4
25,000–34,999	170	17	128	25
	13.6%		13.3	21.0
35,000–49,999	184	23	140	21
	14.8%		14.5	17.6

	<u>Total</u>		<u>Hispanic</u>		<u>White</u>		<u>Black</u>	
	(100%)		(12.9%)		(79.9%)		(9.5%)	
	n	%	n	%	n	%	n	%
50,000–74,999	250		20	12.4	210	21.7	20	16.8
	20.1%							
75,000+	291		30	18.6	243	25.2	18	15.1
	23.4%							
Health Insurance								
Yes	1072		97	60.2	872	90.3	103	86.6
	86%							
No	174		64	39.8	94	9.7	16	13.4
	14%							

Table 2

Results by race (compared to whites)

Question	Blacks		Hispanics	
	OR	P value	OR	P value
A) Likelihood of future SC (very low ..very high)	6.34	<0.0001 [*]	1.41	0.1727
B) Likelihood of SC compared to average person of same age (more likely ... less likely)	0.12	<0.0001 [*]	0.83	0.4405
C) Worry about SC (rarely or never. ...all the time)	4.08	0.0033 [*]	0.83	0.5213
D) There's not much you can do to lower chance of getting sc. (agree/disagree)	2.83	0.0414 [*]	3.87	<0.0001 [*]
E) There are so many recommendations about preventing SC it is hard to know which ones to follow. (agree/disagree)	2.77	0.0143 [*]	3.35	<0.0001 [*]
F) Skin cancer develops over several years. (agree/disagree)	0.64	0.2146	0.91	0.7790
G) There are ways to slow down or disrupt the development of sc. (agree/disagree)	0.90	0.8193	0.62	0.2665
H) SC is most often caused by a person's lifestyle/behavior. (agree/disagree)	0.39	0.0101 [*]	0.85	0.6661
I) It seems like almost everything causes sc. (agree/disagree)	0.35	0.0452 [*]	1.81	0.0855
J) You are reluctant to get checked for SC because you fear you may have it. (agree/disagree)	2.60	0.1279	1.83	0.0800
K) Getting checked for SC increases risk of finding SC when it's easy to treat. (agree/disagree)	0.30	0.0009 [*]	0.47	0.0705
L) People with SC have pain/other symptoms before diagnosis. (agree/disagree)	2.91	0.0119 [*]	2.00	0.0335 [*]
M) How many people with SC survive at least 5 years (less than 25% ... nearly all)	2.28	0.0394 [*]	1.57	0.1449

^{*} Statistically significant (p< 0.05)

Table 3

Results by age (compared to 18–34 year olds)

Question	35–49 years		50–64 years		65–74 years		75+	
	OR	P value	OR	P value	OR	P value	OR	P value
A) Likelihood of future SC (very low ..very high)	0.62	0.0073 *	0.81	0.3439	1.89	0.0557	3.88	<0.0001 *
B) Likelihood of SC compared to average person of same age (more likely ... less likely)	0.97	0.9089	0.94	0.8229	0.48	0.0162 *	0.45	0.0395 *
C) Worry about SC (rarely or never ...all the time)	0.66	0.0709	0.99	0.9763	1.65	0.1579	3.72	0.0002 *
D) There's not much you can do to lower chance of getting sc. (agree/disagree)	1.12	0.8136	0.92	0.8510	1.48	0.4568	3.85	0.0096 *
E) There are so many recommendations about preventing SC it is hard to know which ones to follow. (agree/disagree)	1.06	0.8504	1.84	0.0559	3.49	<0.0001 *	3.04	0.0008 *
F) Skin cancer develops over several years. (agree/disagree)	1.03	0.9234	1.55	0.1668	1.25	0.5538	1.45	0.2940
G) There are ways to slow down or disrupt the development of sc. (agree/disagree)	0.93	0.7802	1.46	0.1799	1.0	0.9912	1.47	0.4013
H) SC is most often caused by a person's lifestyle/behavior. (agree/disagree)	1.72	0.0617	2.096	0.0010 *	1.72	0.0762	2.14	0.0821
I) It seems like almost everything causes sc. (agree/disagree)	1.18	0.6777	1.92	0.1691	2.42	0.1565	1.13	0.8180
J) You are reluctant to get checked for SC because you fear you may have it. (agree/disagree)	1.15	0.7051	1.02	0.9692	0.73	0.6814	1.50	0.3863
K) Getting checked for SC increases risk of finding SC when it's easy to treat. (agree/disagree)	1.83	0.1134	3.82	0.0064 *	1.29	0.5251	1.80	0.3066
L) People with SC have pain/other symptoms before diagnosis. (agree/disagree)	1.11	0.7593	0.83	0.6210	1.07	0.8398	1.23	0.6926
M) How many people with SC survive at least 5 years (less than 25% ... nearly all)	0.58	0.0037 *	0.43	<0.0001 *	0.61	0.0754	1.53	0.2530

* Statistically significant (p< 0.05)

Table 4

Results by education (compared to college graduates)

Question	Less than High School		Completed High School		Some College	
	OR	P value	OR	P value	OR	P value
A) Likelihood of future SC (very low ..very high)	2.076	0.0063 *	1.03	0.8804	1.03	0.8952
B) Likelihood of SC compared to average person of same age (more likely ... less likely)	1.03	0.9011	1.12	0.6910	1.06	0.7806
C) Worry about SC (rarely or never. ..all the time)	2.27	0.0101 *	1.83	0.0144 *	1.04	0.8853
D) There's not much you can do to lower chance of getting sc. (agree/disagree)	8.13	0.0003 *	5.00	0.0030 *	3.41	0.0381 *
E) There are so many recommendations about preventing SC it is hard to know which ones to follow. (agree/disagree)	8.33	<0.0001 *	5.08	<0.0001 *	3.44	<0.0001 *
F) Skin cancer develops over several years. (agree/disagree)	0.62	0.1997	0.65	0.1219	0.49	0.0369 *
G) There are ways to slow down or disrupt the development of sc. (agree/disagree)	1.06	0.9042	0.75	0.3710	0.88	0.7338
H) SC is most often caused by a person's lifestyle/behavior. (agree/disagree)	1.19	0.6441	0.68	0.2913	1.50	0.2311
I) It seems like almost everything causes sc. (agree/disagree)	5.12	<0.0001 *	3.44	0.0002 *	1.83	0.0654
J) You are reluctant to get checked for SC because you fear you may have it. (agree/disagree)	8.44	<0.0001 *	7.35	<0.0001 *	2.80	0.0517
K) Getting checked for SC increases risk of finding SC when it's easy to treat. (agree/disagree)	0.33	0.0118 *	0.67	0.2961	0.75	0.4791
L) People with SC have pain/other symptoms before diagnosis. (agree/disagree)	7.43	<0.0001 *	3.06	0.0022 *	2.02	0.0319 *
M) How many people with SC survive at least 5 years (less than 25% ... nearly all)	2.48	0.0027 *	1.59	0.0129 *	0.93	0.6932

* Statistically significant (p< 0.05)