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A qualitative exploration of Latinos' perceptions about skin cancer: The role of gender and linguistic acculturation

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Abstract

Latinos have the highest rate of skin cancers among U.S. minorities. Despite a rising incidence of melanoma – the deadliest form of skin cancer – and greater disease burden, Latinos tend to have poor awareness of skin cancer risk factors which may inhibit preventive action. We expanded on prior work by qualitatively examining potential moderators (i.e., gender, acculturation) of skin cancer perceptions among Latinos from El Barrio in Harlem, New York. Four focus groups stratified by language (English/Spanish) and gender were conducted. Discussions were recorded, transcribed, and coded using thematic analysis. Thirty-eight self-identified Latinos (32% male) participated. Across groups, median age was 35 years; 50% completed < high school degree, 82% had annual incomes \$29,999, and 55% were born in Mexico. Mean acculturation level was 8.5 (SD=3.9, range=4–20). Major themes included: (1) knowledge of common skin cancer risk factors, (2) acknowledgment of personal risk although lighter skin individuals are at greater risk, and (3) awareness of effective risk-reduction methods, despite presence of fatalistic beliefs. Compared to males, females discussed tanning norms and appearance-based factors; identified children as vulnerable; highlighted the benefits of sun-exposure; and, wanted more information. Few linguistic acculturation patterns were noted; English-speakers questioned the carcinogenic effect of sunscreen and reported more skin cancer-related physician discussions than Spanish-speakers. Despite generally low acculturation, Latinos correctly identified skin cancer risk factors and agreed that it is preventable with engagement in risk-reducing behaviors. Future educational interventions must capitalize upon and reinforce such beliefs and address fatalistic perceptions which may hinder prevention efforts.

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Ethical Standards

Our study was approved by the Memorial Sloan Kettering Cancer Center Institutional Review Board and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All participants provided their informed consent prior to their inclusion in the study.

Introduction

The incidence of melanoma, the most deadly form of skin cancer, is rising among individuals of Hispanic or Latino origin in the U.S. [1–3]. Compared to non-Latino whites, minority populations including Latinos have increased morbidity and mortality associated with melanoma skin cancer [2, 4, 5]. Latinos are more likely to present for diagnosis and treatment of melanoma with thicker tumors, more regional involvement, and more distant disease than their non-Latino white counterparts [4, 6]. Yet, Latinos' melanoma risk awareness [7–9] and risk reduction behaviors [10–12] are low. Identifying the unique perceptions or beliefs that contribute to this increase in skin cancer incidence is a significant research goal, particularly because the U.S. Latino population is rapidly growing, with an estimated 31% of residents self-identifying as Latino by 2060 [13].

Skin cancer prevention researchers have begun exploring such perceptions by identifying Latinos' level of skin cancer awareness. Compared to non-Latino whites, a study using a national probability sample found that Latinos are less aware of the causes, risk reduction strategies, and associated symptoms of skin cancers [14]. In another study, Latinos were aware that sun exposure and lighter skin were risk factors for skin cancer, however, did not recognize melanoma as skin cancer proper or as a significant health concern [9]. As with other chronic illnesses, Latinos have been found to hold fatalistic beliefs about skin cancer, with Latinos being more likely to think that there is little they could do to reduce their risk [15]. Skin cancer misconceptions and information overload are also apparent among Latinos. In one study with Latinos from New Mexico, participants were more likely to endorse pain as a sign of skin cancer, as well as report that it was difficult to know which prevention recommendations to follow given the high number of guidelines [16]. Accordingly, cancer education to address these prominent beliefs is a high priority to galvanize proactive engagement in risk-reducing behaviors.

Previous research has provided an initial understanding of Latinos' skin cancer perceptions. Yet, Latinos are highly heterogeneous, and to date, little is known about the role of gender or acculturation level in skin cancer perceptions. This is particularly important as Latinos with lower levels of acculturation may have lower awareness and knowledge about skin cancer and its prevention than more acculturated Latinos. Additionally, Latinos (males) and Latinas (females) may hold diverse perceptions regarding health and disease prevention. In one available study reporting gender differences, Buster et al. [15] found that Latinas were more likely than Latinos to worry about skin cancer but also reported that there was little they could do to slow down its progression. The current study expands on previous work by examining important moderators (i.e., gender, acculturation) of skin cancer knowledge and beliefs that may impact the adoption of sun protection practices. Our primary objective was to elicit unique perspectives concerning skin cancer and specifically examine differences by gender and/or linguistic preference in a sample of Latinos with varying levels of acculturation from El Barrio in Harlem, New York City. To achieve this goal, we conducted a series of focus groups with English- and Spanish-speaking female and male Latinos that centered on four aspects of skin cancer: general perceptions, who they perceive to be at risk, common risk factors, and whether skin cancer is preventable and/or treatable. As a relatively understudied population in skin cancer research, our intent with this qualitative exploration

was to obtain relevant and useful information concerning Latinos' skin cancer perceptions that could inform and shape future education efforts.

Methods

Study Design & Data Collection

The present study is part of a larger investigation examining Latinos' perceptions about genomic testing for skin cancer. Please see Hamilton et al. [17] for full description of methodological approach. In brief, four focus groups stratified by language preference (Spanish or English) and gender were conducted in a health service organization that predominately caters to Latinos in Harlem, New York. Study inclusion criteria included: self-identification as Latino or Hispanic, fluency in English or Spanish, and being 18 years old or older. We developed a focus group guide consisting of topics and subsidiary questions to assess participants' perceptions regarding skin cancer. Moderators (GA, CJG) were gender-matched to focus groups. Participants completed a brief demographics questionnaire at the completion of the focus groups, which included a widely used acculturation measure. The Short Acculturation Scale for Hispanics assessed language use and preferences; items were rated on a scale ranging from 1–5 and summed, with higher scores indicating greater levels of acculturation [18]. Discussions were audio-recorded and transcribed for subsequent analysis. The Institutional Review Board at Memorial Sloan Kettering Cancer Center approved all study procedures.

Qualitative Analysis

Focus group transcripts were analyzed utilizing inductive thematic text analysis [19, 20]. The analysis team consisted of two clinical health psychologists (VMR, JLH), the two focus group moderators (GA, CJG), two behavioral scientists (JGH, GG), and a qualitative methods specialist (ES). We performed qualitative data analysis in a series of phases. First, each member of the team read each focus group transcript, highlighting important content and recording reflections on the transcript (i.e., margin coding). Team members then completed a written analysis template with supporting participant quotations. The entire team met to generate consensus and identify thematic similarities and differences between the four focus groups. Following this meeting, team members (VMR, JLH) met to further condense the codes and generate higher-order descriptive and interpretive themes that best captured the findings observed across groups.

Results

Sample Characteristics

Our sample was comprised of 38 self-identified Latino/as. Please refer to Table 1 for full demographic characteristics. Acculturation level averaged across groups was relatively low ($M = 8.5$, $SD = 3.9$), considering the range of possible scores was 4–20. To examine acculturation levels across groups, we performed a one-way between subjects ANOVA with post-hoc comparisons using the Tukey HSD test. Spanish-speaking females were significantly less acculturated than participants in the other three groups; $F(3, 33) = 7.39$, $p = 0.001$.

Qualitative Findings

Six global themes reflecting Latinos' perceptions about skin cancer were identified. Table 2 provides exemplary quotes for each theme.

General thoughts about 'cancer' and 'skin cancer.'—Across all groups, 'cancer' elicited strong emotional responses that were often equated with one's mortality. Words such as "*fear*," "*scary*," "*incurable*," and "*death*" were commonly used among participants. Interestingly, female participants were more likely to describe cancer treatments and appearance-related side effects (e.g., "*weight loss*," "*hair loss*") when discussing cancer, while male participants reflected more on common cancer risk factors such as "*smoking*" and "*poor eating habits*." Skin cancer, in particular, elicited a myriad of responses across all groups with sun exposure being the common denominator. Common themes identified in response to 'skin cancer' included: changing tanning norms, efforts to avoid sun exposure given known cancer risks, skin damage resulting from the sun and/or indoor tanning, and one's skin color as a risk factor. Latinas were more likely to discuss tanning behaviors and norms than Latinos; however, a few male participants across linguistic groups demonstrated awareness of indoor tanning and discussed its association with skin cancer. No other meaningful gender or linguistic patterns were observed.

Who is at risk for skin cancer?—Participants across all groups agreed that no one is completely immune to skin cancer; however, most reported varying factors that make a person more or less susceptible. Three factors, specifically, captured this sentiment: (1) time of day and duration of sun exposure, (2) skin color, with greater susceptibility for fair-skinned individuals, and (3) indoor tanning practices. An interesting gender pattern was observed. Latinas discussed that while spending time outdoors, they tend to remove articles of clothing as a way of cooling off. For example, one participant stated: "*We go out to the sun too much... when it gets very hot we take some of our clothes off.*" In addition, only Latinas identified 'children' as a vulnerable group that is more likely to be exposed to the effects of the sun and therefore need protection: "*The children like to stay out in the sun a lot... and they fall asleep out in the sun... so usually they are outside for half an hour each day, and sometimes it's so hot.*" Another Latina reported, "*when it is sunny and I am one of those people who is not used to that [sunblock]. I would like to have that habit in order to protect my children too.*"

The etiology of skin cancer and its risk factors—The most frequently cited skin cancer risk factor across all groups was ultraviolet light exposure from the sun and indoor tanning. Participants generally agreed, however, that additional factors also placed a person at greater skin cancer risk.

Many participants described how the color of one's skin may play a role in the emergence of skin cancer. For the most part, participants stated that individuals of lighter or fair skin were at an increased risk. Others described being told that having darker skin can reduce your risk for skin cancer, and that having darker skin allows individuals to spend more time in the sun without experiencing any negative health consequences. The idea that Latin skin is able to adapt to different climate conditions and be resilient against the effects of prolonged sun

exposure was also discussed. Yet, several participants reported being confused regarding the role of skin color within the context of skin cancer risk. For instance, some appeared to have trouble reconciling the importance of engaging in sun protection and the alleged protective quality of darker skin tones. Spanish-speaking participants in particular stated that skin cancer and its risk factors were not regularly discussed in their native countries. A few English-speakers, however, discussed receiving sun protective messages from their physicians, suggesting that linguistic acculturation may play a role in the nature of skin cancer prevention messages received.

Family history or having a genetic predisposition for skin cancer was another risk factor that emerged in the discussions. Responses regarding the role of genetics as a risk factor were mixed. Most participants believed that skin cancer could run in families and others directly denied a connection between heredity and skin cancer etiology. Some were unsure about the role genetics played in skin cancer and expressed uncertainty about the potential link (see Table 2). Participants also cited environmental and occupational hazards that may lead to an increased skin cancer risk. For instance, participants identified environmental changes, pollutants, and radiation emitted from sources other than the sun as significant factors in skin cancer etiology. Less frequently mentioned risk factors included personal injury (“*a minor hit, a bad cold*”), and certain foods (“*produce that we don’t have and we import from other countries*”).

We observed an interesting phenomenon that may suggest a potential difference by linguistic acculturation. English-speaking participants were more likely to identify chemicals found in skin creams and lotions as an important skin cancer risk factor than Spanish-speaking participants. Comments such as “*everything that we are doing on our skin, it affects everything. The sun, the lotion that we buy sometimes*” (female) and “*it could be products that we use on the skin. Sometime we use different products that we don’t know what it is and we be exposed to*” (male) exemplify this view. Others expressed uncertainty about the effectiveness of sunscreen for skin cancer prevention: “*like not everything works, like not all the sun blocks work, you know, protect the skin*” (female).

Is skin cancer preventable?—In general, participants across groups reported that skin cancer was preventable. No significant gender or linguistic patterns were observed. Discussions included both primary and secondary prevention messages. For example, some participants stated that engaging in and/or avoiding certain behaviors could prevent skin cancer. Specifically, sunscreen use and shade-seeking were seen as important prevention behaviors. Some participants discussed that if they learned that a certain lotion or make-up brand was linked to skin cancer they would try to avoid using it in order to reduce skin cancer risk. Furthermore, participants discussed the possibility of curbing the spread of the disease if one already has skin cancer (“*it could be prevented from spreading more and more*”). Others portrayed more fatalistic views in regards to skin cancer being a preventable disease, with a few emphasizing that genetics may interfere with the efficacy of skin cancer prevention efforts. Furthermore, there appeared to be general consensus that skin cancer can be severe but, for the most part, treatable. Some reported that the severity of a skin cancer depends of the stage of diagnosis, and that while most skin cancers are treatable they may not necessarily be curable. As one English-speaking male participant stated: “*it’s treatable to*

a point, but it's not treatable 'cause you're still building – it's still there...and can come back."

Sun-related benefits—Despite the perceived negative consequences associated with sun exposure, we found that both English- and Spanish-speaking female participants discussed benefits that can come from the sun. Two primary benefits were identified: (1) sunbathing as a way to obtain necessary vitamins, and (2) sun exposure as an antidote for illnesses, such as depression. Sun exposure was regarded as beneficial only if certain precautions are taken, such as limiting sun exposure to a certain time of day or season. A Spanish-speaking female summarized these perspectives by stating: *"Not in excess, because everything in excess is bad. But it is necessary."* Interestingly, males did not discuss such benefits.

Information about skin cancer risk—Participants across all groups expressed having poor knowledge regarding skin cancer and its potential risk factors, but described a strong desire to learn more. Misinformation about the nature of skin cancer and limited knowledge about established risk factors was also apparent. Comments such as *"I don't know if I can also get it from somebody else. For example, let's say that I have it and I get near a lady and transmission occurs. That I don't know, I feel that we don't have that information"* or *"I feel that we don't know either if there are some products that can also cause cancer. Creams, lotions, paints, make-up."* captured this sentiment. Lastly, a gender difference was observed regarding where Latinos look for sources of information about skin cancer. Male participants relied heavily on two sources of information: the internet and health care providers. Female participants, on the other hand, provided a more extensive list of options which also included libraries, cancer organizations, and informational cancer forums/support groups as well as reaching out to individuals who have had cancer. No linguistic patterns were observed for primary sources of skin cancer information.

Discussion

Psychosocial research within the realm of skin cancer has largely, and perhaps appropriately, focused on the most vulnerable ethnic group: non-Latino white populations. Nevertheless, with the rising incidence of more advanced-stage skin cancers among Latinos [21, 2], and as Latinos become the largest ethnic minority group in the U.S., cancer education efforts in this area need to address the unique and diverse beliefs Latinos hold regarding skin cancer. The heterogeneity of the Hispanic/Latino ethnicity, demonstrated by the variety of races and skin types, as well as the different levels of acculturation found in this population, makes this a critical research endeavor.

To our knowledge, only one existing qualitative study has examined awareness of melanoma/skin cancers in Latinos. Robinson et al. conducted twelve focus groups stratified by ethnicity (Asian, African American, and Latino) to assess their skin cancer awareness and identify ways to enhance the appropriateness of melanoma-related educational materials for ethnic minorities [9]. Their intent was to elicit the most culturally appropriate terms related to skin cancer as well as test their knowledge of an ethnic individual's propensity to burn and risk for melanoma. This study provides an initial understanding of Latinos' perceptions regarding skin cancer, however, given that results were often presented in aggregate form

(i.e., “ethnic minorities”) it is difficult to tease apart the beliefs and perspectives specific to Latinos. Furthermore, research that directly examines linguistic acculturation is scant. Prior work by Coups et al. examined associations between language preference and sun protective behaviors but did not address its role in skin cancer perceptions or beliefs [22]. Therefore, the present study aimed to fill these gaps by exploring gender and linguistic acculturation as potential moderators of Latinos’ skin cancer knowledge and beliefs, with the ultimate goal of informing skin cancer educational interventions.

Across genders and language preferences, ultraviolet radiation exposure was the most frequently cited risk factor for skin cancer. Latinos generally believed that no one is completely immune to skin cancer but that Latinos are less susceptible, perhaps because of the adaptive and protective nature of their skin. Such beliefs have important implications for sun protection as Latinos may perceive their skin tone to be a natural protector against the damaging effects of the sun. This finding has been replicated in empirical studies, with one study reporting that Latinos failed to use sunscreen because they considered their skin to be dark [23], while a quarter of Latinos (26%) in another study believed their skin color was protective [11]. Importantly, most Latinos in our study reported being generally aware of various ways by which they could prevent skin cancer. The most commonly cited risk reduction strategies included sunscreen use and shade-seeking. However, as has been noted by other researchers, fatalistic beliefs concerning skin cancer were still palpable across all focus groups [24, 25]. In general, these beliefs concerned the perceived inability of Latinos to take preventive action against skin cancer, highlighting the great need of educational interventions that specifically debunk such beliefs and provide culturally-responsive prevention information. Nevertheless, our findings highlight two important aspects of skin cancer awareness in this generally low acculturated sample: Latinos recognized they could be at risk for skin cancer, even if individuals with lighter skin are at greater risk and recognized effective methods for skin cancer risk reduction, making cancer education interventions a promising approach to prevention.

In general, we found more similarities than differences across focus groups. Although we did not observe as many gender and linguistic acculturation differences as we might have expected, several interesting patterns emerged. Compared to Latinos, Latinas were more likely to discuss the evolving tanning norms and appearance-related side effects of both cancer and skin cancers; identify children as a vulnerable population that needed their protection against the sun; highlight the benefits of sun exposure; and, report a strong desire to learn more information regarding skin cancer. In terms of linguistic acculturation, we found that English-speaking Latinos were more skeptical about the effectiveness of sunscreen and lotions, and specifically discussed their potential carcinogenic effect. Future research is needed to further assess the origin of such beliefs which could inhibit important sun protection practices. In addition, Spanish-speakers were more likely to report that skin cancer was not given much importance, and thus not discussed, in their countries of origin; while those in English-speaking groups discussed having some discussions (although not extensive) with their providers regarding sun protection and skin cancer. Future research should continue to assess these perspectives in Latinos with lower levels of acculturation as low skin cancer knowledge may be most prominent in those with lower levels of acculturation.

Our findings revealed that Latinos hold accurate perceptions regarding the common risk factors for skin cancer, and in general agree that it could be prevented with adoption of risk-reducing behaviors. This is significant considering the low levels of acculturation that characterized our sample. Future educational interventions and public health campaigns must capitalize on this and reinforce such beliefs, particularly given the strong familial bonds that exist in the Latino community which will allow for inter-generational communication about skin cancer prevention. Despite these accurate perceptions, Latinos portrayed several problematic beliefs (e.g., Latino skin as resilient and protective against cancer; fatalistic beliefs) that are important to address in tailored educational interventions for Latinos. Our findings also indicated that there might be value in considering gender-specific interventions. Prevention interventions for Latinas may take advantage of Latinas' views regarding protecting children and family members against skin cancer and use a family systems approach to prevention. In addition, targeted interventions for Latinas may address appearance-related factors and tanning behaviors as well as reframe beliefs concerning the positive benefits of the sun.

The present study is strengthened by a strong qualitative design that allowed for a comprehensive analysis of skin cancer-related perceptions among Latinos with relatively low levels of acculturation living in New York City. Although we are unable to say whether findings generalize to other Latino populations, our intent with this study was to use findings to develop cancer education interventions for less acculturated, urban Latinos. Educational campaigns that promote relevant skin cancer risk information specific for Latinos, challenge fatalistic beliefs regarding prevention, and encourage the regular adoption of sun protection behaviors are likely to be most effective among low acculturated Latinos. Additionally, although our study is the first to stratify focus groups by gender and linguistic preference, it is limited by a small percentage of male participants (32%). Consequently, future research should identify factors that might be most effective in promoting risk reducing behaviors among Latino males. Still, research suggests a rising incidence of melanoma among white Latinas, making our gender-specific findings very relevant for prevention efforts aiming to curb this rise [22, 6].

Overall, we were delighted to find that Latinos' perceptions about skin cancer were more accurate than expected. In brief, findings suggest that low acculturated Latinos were generally aware of their risk for skin cancer and best practices to prevent its occurrence. Our highest priority in skin cancer education should be placed in reinforcing accurate risk perceptions and prevention practices, while correcting cultural misconceptions concerning the protective quality of Latin skin and misinformation regarding common causes of skin cancer, as well as addressing potentially paralyzing fatalistic beliefs. Educational interventions that address the aforementioned issues from a culturally-responsive perspective and take into account level of acculturation and gender-specific beliefs will likely have the most impact in terms of improving Latinos' adoption of important sun protection practices.

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Table 1

Sample characteristics

	English-speaking Male (<i>n</i> = 7)	Spanish-speaking Male (<i>n</i> = 5)	English- speaking Female (<i>n</i> = 13)	Spanish- speaking Female (<i>n</i> = 13)	Total Sample (<i>n</i> = 38)
Median Age, years (range)	42 (30–58)	29 (20–40)	37 (22–58)	30 (23–70)	35 (20–70)
Education (%)					
Less than 7 th grade	0 (0)	1 (20)	1 (7.7)	8 (61.5)	10 (26.3)
Junior high school (7–9 th grade)	0 (0)	1 (20)	1 (7.7)	1 (7.7)	3 (7.9)
Partial high school (10–12 th grade)	1 (14.3)	1 (20)	3 (23.1)	1 (7.7)	6 (15.8)
High school graduate or GED	0 (0)	0 (0)	5 (38.4)	1 (7.7)	6 (15.8)
Partial college or vocational training	4 (57.1)	2 (40)	1 (7.7)	1 (7.7)	8 (21.1)
College graduate or higher	2 (28.6)	0 (0)	2 (15.4)	1 (7.7)	5 (13.1)
Annual household income (%)					
Less than \$1,000	0 (0)	2 (40)	6 (46.2)	7 (53.8)	15 (39.5)
\$1,000 to \$29,999	1 (14.3)	3 (60)	6 (46.2)	6 (46.2)	16 (42.1)
\$30,000 to \$49,999	2 (28.6)	0 (0)	1 (7.7)	0 (0)	3 (7.9)
\$50,000 to \$69,999	2 (28.6)	0 (0)	0 (0)	0 (0)	2 (5.3)
\$70,000 to \$89,999	2 (28.6)	0 (0)	0 (0)	0 (0)	2 (5.3)
Country of birth (%)					
Continental U.S.	2 (28.6)	0 (0)	1 (7.7)	1 (7.7)	4 (10.5)
Puerto Rico or other U.S. territory	2 (28.6)	0 (0)	3 (23.1)	0 (0)	5 (13.2)
Mexico	0 (0)	4 (80)	7 (53.8)	10 (76.9)	21 (55.3)
Dominican Republic	2 (28.6)	0 (0)	0 (0)	0 (0)	2 (5.3)
Ecuador	0 (0)	0 (0)	0 (0)	1 (7.7)	1 (2.6)
Other ^a	1 (14.3)	1 (20)	2 (15.4)	1 (7.7)	5 (13.2)
Marital status (%)					
Married or living with a partner	2 (28.6)	2 (40)	7 (53.8)	10 (76.9)	21 (55.3)
Single	4 (57.1)	3 (60)	4 (30.8)	1 (7.7)	12 (31.6)
Divorced or Widowed	1 (14.3)	0 (0)	1 (7.7)	2 (15.4)	4 (10.5)
Level of acculturation (<i>M</i> ± <i>SD</i>)	11.7 ± 2.6	10.4 ± 3.6	9.1 ± 4.0	5.3 ± 2.1	8.5 ± 3.9

Note:

Other, excludes Columbia and Honduras, as these options were explicitly assessed but not endorsed by any participant.

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Table 2

Common themes and representative participant quotes from the focus groups

Themes	Representative Participant Quotes	
General thoughts about skin cancer		
	Sun exposure	<i>“That if you get too much sun there in the beach it can give you cancer, or if you lay out too much in the sun you can get skin cancer.”</i> —Spanish-speaking, male
	Changing norms in tanning	<i>“When I was young I used to lay out in the sun and meditate... before all you heard was suntan lotion ... now, there’s a whole bunch of different sunscreen, sunblock... you can’t be in the sun too long.”</i> —English-speaking, female
Who is at risk for skin cancer ^a		
	Time of day and duration of sun exposure	<i>“Those who are exposed to the sun rays at a certain time are at risk...the rays are stronger depending on the time.”</i> —Spanish-speaking, male <i>“It’ll eventually get you if you’re exposed to sun for prolonged periods of time.”</i> —English-speaking, male
	Fair-skinned individuals	<i>“There is more susceptibility to the fair-skinned people.”</i> —English-speaking, male <i>“People whose skin is not that dark...they are harmed by the sun rays.”</i> —Spanish-speaking, male
	Indoor-tanners	<i>“I mean like when you go to those tanning places and you sit down in that little microwave thing.”</i> —English-speaking, male <i>“I have heard that there are people who use tanning beds a lot and that is what causes cancer in the skin.”</i> —English-speaking, female <i>“They are people that put themselves in those, in those tanning beds...and that can also give you cancer.”</i> —Spanish-speaking, male
	Latin skin is protective	<i>“It’s a feeling of, because I am a person of color, that I won’t get it – somehow, my genetics will protect me.”</i> —English-speaking, male <i>“Whiter people have a higher risk for that... Yes, because the sun hurts the skin more than someone... born in a country to the south where there is always sun.”</i> —Spanish-speaking, male
Etiology & Risk Factors		
	UV radiation	<i>“The sun more than anything.”</i> —Spanish-speaking, female <i>“UV light from tanning salons.”</i> —English-speaking, male
	Skin color/Ethnicity	<i>“There are different races that are more prone than others.”</i> —English-speaking, female <i>“I am from Mexico and they never taught us that”</i> —Spanish-speaking, female <i>“I really have not heard that skin cancer is something that happens in Mexico.”</i> —Spanish-speaking, male <i>“You know, you hear it...even my own doc, he’ll ask me, “Hey, it’ll be a hot summer, make sure you put on your, you know, something on you, even though you are Puerto Rican”.”</i> —English-speaking, male

Themes	Representative Participant Quotes
Family history/Genetics	<p><i>"I have heard stories that if you have a family member that had it you have to be careful because you can inherit it."</i>—Spanish-speaking, female</p> <p><i>"Family [history] would be a factor to consider."</i>—English-speaking, male</p> <p><i>"I do know that there are other cancers that run in the family indeed, but I do not know in the case of skin cancer since that comes from the sun."</i>—Spanish-speaking, male</p> <p><i>"It could be genetic, can it be? I don't know."</i>—English-speaking, female</p> <p><i>"I think...skin cancer not coming for genetic, but coming from the sun."</i>—English-speaking, female</p>
Environmental/Occupational Hazards	<p><i>"I consider that the environment has a lot to do with it...it has to do with what is happening in the ozone layer."</i>—Spanish-speaking, female</p> <p><i>"The stuff in the air."</i>—English-speaking, female</p> <p><i>"If the water is dirty it can affect the skin."</i>—Spanish-speaking, female</p> <p><i>"There are other cases, other types of jobs with exposure to radiation."</i>—Spanish-speaking, male</p>
Skin Cancer Prevention	
Risk reduction behavior	<p><i>"The doctor always tells you stay away from the sun"</i>—English-speaking, male</p> <p><i>"The [sunscreen] blocks you against the sun rays."</i>—Spanish-speaking, male</p> <p><i>"Seeing for example if this is caused by creams or make-up that we put on...we then will consider not using them anymore...avoid them."</i>—English-speaking, female</p>
Fatalistic beliefs	<p><i>"Even if we avoid the sun sometimes we get sick with cancer,"</i>—Spanish-speaking, female</p> <p><i>"I think if in your genes you gonna have that kind of cancer."</i>—English-speaking, male</p> <p><i>"Like you can try to prevent it, but I say if it's in your genes and it's dormant...and it just happens to start developing, then you're gonna get it no matter what preventing methods you take."</i>—English-speaking, male</p>
Sun-related Benefits	<p><i>"The sun is good when you take it after 2pm"</i>—English-speaking, female</p> <p><i>"There are people that need a bit of sun because if you are depressed it is important to have a bit of that."</i>—Spanish-speaking, female</p> <p><i>"The sun is good, but you know, it have to be certain different time in the year."</i>—English-speaking, female</p> <p><i>"Sometimes the doctor tells you, the doctor tells you to get a bit of sun."</i>—Spanish-speaking, female</p>
Information about Skin Cancer	<p><i>"I'm a little bit slow on the skin cancer, I want to find out what's really going on with that, and how you get it and how you prevent it—I'm gonna get into that."</i>—English-speaking, female</p> <p><i>"And now I want to learn to, to take better care of myself. Well, of my children and myself. That we don't, don't get skin cancer."</i>—Spanish-speaking, female</p>

Note: Please see text for descriptions of gender- and linguistic-based differences.