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RESEARCH ACRTICLE

Sun protection attitudes and behaviours among first generation Australians with darker skin types: results from focus groups.

Abbreviated Title:

Sun Protection Attitudes of First Generation Australians

Abstract

Background. Despite residing in a country that has the highest rates of skin cancer in the world, little is known about the knowledge, attitudes and sun protection practices of first generation Australian-born individuals with olive and darker skin types.

Methods. Six focus groups with first generation Australian-born individuals of Asian, Mediterranean, Middle Eastern and Indian background were conducted.

Results. Participants had good knowledge of the dangers of skin cancer. Most correctly perceived darker skin types as protective and believed they were at low risk of skin cancer. Most participants could recall high profile mass media sun protection campaigns. Several participants suggested that greater representation of ethnic minorities and/or individuals with darker skin types would increase the personal relevance of campaigns.

Discussion. Beliefs that sun protection is not necessary on the basis of skin type highlights the need for further studies to explore fundamental differences in attitudes and practices between those with olive and darker skin and the general Australian population.

Keywords: skin neoplasms; sun exposure; knowledge; attitudes; darker skin types

Sun protection attitudes and behaviours among first generation Australians with darker skin types: results from focus groups.

Background

Exposure to ultraviolet (UV) radiation is an established cause of skin cancer ¹. Melanoma is the third most common cancer in Australia ², with more than 444,000 Australians treated for skin cancer (including non-melanoma skin cancer) each year ^{3 4}. Increased risk of skin cancer is associated with lighter skin colour ¹, higher cumulative lifetime sun exposure, repeated instances of sunburn ⁵, family history of melanoma, and the use of solarium ⁶.

Due to their relative lack of skin pigmentation, people with fair skin are at highest risk of skin cancer ⁷. Melanoma is less common in individuals with darker skin, primarily because epidermal melanin filters up to twice as much UV light than the epidermis of Caucasian skin ⁸. However individuals with darker skin are not immune to the development of skin cancer ⁹ ¹⁰. Despite lower incidence, individuals with darker skin are also more likely to present with later stage cancers ¹⁰, with ethnic minority groups having a 1.96 to 3.01 fold greater risk of dying from melanoma than individuals with fair skin ¹¹. Regardless of skin type, consistent and deliberate sun exposure without any form of sun protection when the UV index is 3 or above is not recommended ¹².

Skin cancer prevention campaigns in Australia have had significant success. National population-based prevention programs incorporating television advertising have been highly effective in improving awareness of sun-protective behaviours ¹³. For example, the Slip! Slop! Slap! campaign and the more recent SunSmart campaign have encouraged individuals to reduce their sun exposure by adopting protective behaviours including using sunscreen and

wearing protective clothing and a hat ¹⁴. It has been estimated that the SunSmart campaign, implemented in 1988 has averted 28,000 disability-adjusted life-years, equivalent to 22,000 life-years saved, in one state of Australia alone ¹⁵. There is generally high recall and awareness of campaigns ¹⁶.

Australia is a multi-cultural society with a high proportion of individuals from an Asian, Mediterranean, Middle Eastern and Indian background ¹⁷, who generally have Skin Type IV which does not burn easily. However, in a country with the highest rates of skin cancer in the world ¹⁸, little is known about the sun protection attitudes and behaviours of the Australian-born children of migrants with darker skin, their perceptions of skin cancer prevention campaigns, and the differences and similarities of these beliefs compared to the general Australian population. It is possible that current sun protection messages may be failing to get through to, or even alienating, people with olive and darker skin types due to the focus on fair skin types.

There is some knowledge about the sun protection behaviours of ethnic minorities in the United States, but findings are mixed. Focus groups conducted with ethnic minorities found that darker skin colour was correctly perceived as protective to the development of skin cancer ¹⁹. However, Latino immigrants who had acculturated (adopted the normative language, behaviours and attitudes of the host country over time) were more likely to report using sunscreen, but less likely to report seeking shade or wearing long sleeved shirts or long pants, than those who had not acculturated ²⁰. Another study, which explored attitudes and behaviours towards sun protection among 564 adults who self-identified as Asian American ²¹, showed that westernization (as determined by the number of generations in the United

States, location raised, or self-rated acculturation), was associated with attitudes and behaviours promoting sun exposure, rather than sun protection.

Given the high proportion of individuals with darker skin types in Australia, it is important to understand knowledge, attitudes and behaviours towards sun exposure and sun protection.

This study aimed to explore among first generation Australian-born individuals of Asian, Mediterranean, Middle Eastern and Indian background:

1. General knowledge of skin cancer and perceptions of individual risk for developing skin cancer;
2. Attitudes and behaviours around sun exposure, sunburn and sun protection;
3. Recall and views about Australian skin cancer preventions campaigns.

Methods

Study design

Qualitative focus groups were conducted in the summer months of January and February 2012, in three areas in New South Wales, Australia. New South Wales is the most populous region of the eight Australian states and territories.

Participants and recruitment

English speaking adults, aged over 18 years, who were first generation Australian-born and of Asian, Mediterranean, Middle Eastern or Indian background were eligible to participate.

Participants were recruited from four Migrant Resource Centres which are government funded services that provide arrival, settlement and integration services to migrant and refugee settlement groups. Information flyers advertising the focus groups were distributed. Snowball sampling was also used. Potential participants were informed that researchers

wanted to explore “knowledge and attitudes towards skin cancer, sun exposure and sun protection among people with darker skin types”, and that the research was being conducted on behalf of Cancer Council New South Wales, a state-based cancer charity. Individuals interested in participating were asked to call researchers to register their interest.

Data Collection

Participants gave informed consent and completed a demographic questionnaire prior to the start of each discussion. Each group was led by two female facilitators with graduate qualifications and experience in conducting qualitative interviews and focus groups. Focus groups were conducted at either a migrant resource centre, the offices of the Cancer Council New South Wales, or on the University campus. A semi-structured discussion guide was used to encourage and focus the discussion. The facilitators used open-ended questions to initiate discussions, and encouraged participants to speak freely. Facilitators summarised participant responses as discussions progressed and used probing questions to ensure that each topic of interest was explored adequately. The researchers met immediately after each group to discuss the conduct of the group, and the content of discussions. Saturation of themes was reached after completion of six focus groups. All focus groups were audio-recorded. Participants were provided with a \$100 AUD voucher (approximately \$96 USD) as reimbursement for their time and travel expenses. There was no relationship between the researchers and participants prior to the commencement of the focus groups. No participants withdrew from the research.

Discussion guide

The development of the discussion guide and subsequent analysis plan was guided by the central themes embodied in theories examining multiple determinants of health behaviour

and behaviour change at the intrapersonal, interpersonal and group-based or macro level²².

The discussion guide included items within three broad domains: i) general knowledge of skin cancer and perceived individual risk; ii) sun exposure, sunburn and sun protection and iii) recall and views about skin cancer preventions campaigns. The discussion guide was revised as focus groups progressed. A copy of the discussion guide is available from the authors on request.

Data coding and analysis

Audio-recordings were transcribed verbatim using a professional transcription service.

Transcripts were coded by two independent coders (JB & AZ) using thematic analysis using NVivo version 9²³ software. An apriori coding framework was developed based upon the research questions and discussion guide²⁴. Each transcript was reviewed line-by-line and through inductive reasoning, words, statements, and paragraphs related to the broad domains of the interview guide were extracted²⁵. Two transcripts were coded by both coders with discrepancies discussed after each transcript until a kappa of >0.6 was achieved across 75% of the central themes. Using the revised coding rules, the remaining transcripts (n=4) were then coded independently by one coder (JB or AZ). Quotations are provided to illustrate themes and findings and examples of both agreement and diverse cases are provided for each thematic area. Each quote identifies the gender of the speaker and which focus group the speaker participated in. The Consolidated Criteria for Reporting Qualitative Research framework was used to guide the reporting of the findings²⁶. For demographic characteristics collected, country of mother's and father's birth was coded into regions; Asia (China, Hong Kong, Philippines, Malaysia, South Korea, Vietnam, Cambodia, Fiji), Africa (Egypt), Middle East (Iraq), Oceania (Australia), European Union (Poland, Italy, Greece).

Results

Participant and group characteristics

Six focus groups were conducted. Focus groups contained between two and twelve participants and averaged 44 minutes in duration (Table 1).

[Insert Table 1 here]

In total, 38 individuals participated. Demographic information is provided in Table 2. There was an even number of male and female participants. The majority of participants had a university-level education (61%), had never been married or were single (71%), and worked primarily indoors (71%). The mean age of participants was 26 years (SD=6.58).

[Insert Table 2 here]

General knowledge of skin cancer

The majority of participants could correctly identify UV rays or the sun as the main cause of skin cancer. Lack of sun protection, repeated sun exposure, lighter skin colour and a genetic predisposition were all identified as risk factors which influence development of skin cancer. Solariums were mentioned unprompted as a cause of skin cancer by two participants.

“Sun exposure, obviously not wearing the correct protection” (Male, Group 5).

“Predisposition towards it like some people are just maybe predisposed to getting it. And I think lighter colour skin in my knowledge has more chance of getting skin cancer” (Female, Group 2).

Participants had varying levels of knowledge about melanoma. Some participants recognised that melanoma was serious and potentially fatal and were able to identify that melanoma

could spread throughout the body. However, several participants thought melanoma was rare and not fatal.

“I mean, a lot of people get it and they get it cut out and they get on with their day” (Male, Group 1).

“It’s usually the dangerous... the most dangerous type” (Female, Group 5).

Perceived individual risk of developing skin cancer

Participants thought that individuals had varying risks of developing skin cancer. There was general agreement that individuals with fairer skin were more likely to experience sunburn, and therefore, to develop skin cancer. Olive or darker skin colour was perceived as protective. The majority of participants believed they were at low risk of developing skin cancer, and described feeling ‘immune’ and able to ‘resist’ skin cancer because of the colour of their skin.

“You’re olive skinned you’re not prone to it” (Female, group 4)

“I think that because I am darker that I’m less immune to having skin cancer because it’s not in my family.” (Female, Group 5)

Several participants noted that they did not feel at risk of developing skin cancer because they knew few people who had skin cancer.

“I saw it on the TV, the commercial where one kid got a melanoma. But I’ve never heard anyone else getting it, just on the TV” (Male, Group 3).

“I don’t see it happening to anyone else, or I didn’t see like the statistics of people dying from it or things like that, so it just doesn’t bother me or worry me” (Male, Group 3).

Several participants indicated that they took steps to protect their skin even though they thought their risk of skin cancer was low.

“I honestly think it’s unlikely because I have the skin type that I think enables me to resist it, but at the same time I still protect my skin.” (Female, group 6).

Sun exposure

Weekdays, most participants who were indoor workers and students, reported only incidental sun exposure on the way to and from work or classes. Few participants reported using sun protection in these instances. Outdoor workers reported higher levels of sun exposure. However, few reported wearing sun protection routinely.

“In the sun all day, every day... [I am] a carpenter.” (Male, group 1)

“I do maintenance and stuff for a club so I’m always outside...they try and enforce the wearing of hats and sunscreen but I forget sometimes.” (Male, group 1)

Experiences of sunburn

Almost all participants reported suffering sunburn infrequently, however most reported at least one and sometimes multiple past experiences of sunburn. Rates of visible burning following sun exposure varied, but most participants reported that the effects of sunburn diminished quickly. Instances of sunburn were generally perceived as mild or not particularly serious.

“It’s only a couple of days and then I’m right after that.” (Male, group 1)

“I rarely get burnt. It happens every now and then when I’m at the beach for a few days.” (Female, group 4).

Sun protection attitudes and practices

Many participants were able to identify the hottest part of the day as the time when sun protection was most required. Several participants identified UV rays as a potentially

important factor to consider even on cloudy days; however, no participants specifically identified a UV index of 3 or more being an important factor.

“I guess psychologically when it’s not a very sunny day, when it’s cloudy but I think someone mentioned to me about during those cloudy days that’s when there’s the most UV rays out there. Yeah. So, but it’s a psychological thing.”
(Female, group 2)

Use of sunscreen and other forms of sun protection were more common when going to the beach, being outside for extended periods of time, or on very hot days, but were less common in winter and when it was cloudy.

“If we’re going to the beach and if we’re going to have long exposure to the sun, then yeah, just sunscreen and sunnies. But just on a normal day then nothing really.” (Male, group 3).

“I don’t think I’ve ever worn sun cream, sunscreen, in winter.” (Male, group 1).

Almost all participants reported not using sun protection on a regular basis. Many participants indicated they did not use sun protection because of forgetfulness, it being uncomfortable and time consuming, because they perceived they did not need to, and a general lack of routine use. A minority of participants, exclusively female, reported regularly using sun protection on a daily basis. While skin cancer was a consideration, preventing premature ageing was the most common reason given.

Recall and views about skin cancer prevention campaigns

Overall awareness of public sun protection messages was high. Participants could generally recall two or more skin cancer prevention campaigns. These included long-running national skin cancer campaigns (Slip! Slop! Slap!) and more recent state-based and local campaigns.

A number of participants thought that the current skin cancer advertisements were personally relevant. In particular, participants identified with the younger age of the people in the advertisements.

“Absolutely.....they’re showing people in their 20s and 30s who are fit looking people who are dying from it.” (Male, Group 6).

However, apart from the younger age of people in the advertisements, the majority of participants believed that advertisements were more targeted, and more relevant, to Caucasians and those with fairer skin.

“I don’t know. I always just looked at that and I might have done it subconsciously not consciously, but I always looked at that and I thought that’s just for fair skinned people” (Male, Group 1).

“As someone who’s from a mixed background and with a darker skin colour, I’ll be honest, I’ll drive by these signs and these billboards for instance with the slogans, and I think... I will think about it, but I can’t help dismiss it because I kind of think I don’t look like that” (Female, Group 6).

Several participants indicated that skin cancer campaigns depicting individuals with darker skin, or that provided evidence to demonstrate that people with darker skin were also susceptible to skin cancer, would help make sun protection messages more personally relevant.

“They should make them more multi-cultural..... Definitely. Because Australia’s very multicultural and there’s a lot of people here that are darker skin but they still get burnt” (Female, Group 2).

“If you could show me statistics saying that... a higher percentage of darker skinned people suffer from skin cancer, maybe then I would look at that, oh okay, I was unaware of that”

(Male, Group 1).

“It just needs to be more inclusive, to reflect how society is now. We’re all a massive mix of different cultures, so yes, I think it would be better to try and represent everyone in a way”

(Female, Group 6).

Discussion

To our knowledge, this is the first study to explore sun protection attitudes and behaviours among first generation Australians with olive and darker skin types. This research represents an important step in exploring the attitudes and behaviours of a subgroup of Australians who are generally not targeted by sun protection campaigns.

General knowledge of skin cancer and perceived individual risk of skin cancer.

While this highly educated sample had reasonable awareness and knowledge about the dangers of the sun and sun protection behaviours most had low levels of knowledge about melanoma. While levels of knowledge about the causes of skin cancer are generally high in the Australian community, knowledge often does not correlate with sun protection practices and behaviours^{27 28}. Most participants believed that darker skin offered natural protection against the sun and correctly believed their own level of risk for skin cancer was lower than individuals with fairer skin. These findings support recent work from two US studies, which found that individuals of African-American²⁹, Hispanic and Asian ethnicity¹⁹, perceived themselves at lower risk of developing skin cancer. Rationalisations for not using sun protection based on darker skin type are in line with earlier quantitative Australian research

which found sun protection behaviour was linearly related to skin type, with use of sun protection greatest among those who burn and least among those who tan ³⁰.

Recall and views about skin cancer prevention campaigns.

The majority of participants were able to recall high profile sun protection campaigns, which is in line with campaign recall of the general Australian population. However, several participants suggested that greater representation of ethnic minorities and/or individuals with darker skin types or ‘ethnicity targeted’ messages would increase the personal relevance of skin protection campaigns. The complexity of taking this approach needs to be considered within the context of high rates of vitamin D deficiency among individuals with darker skin ³¹. Conflicting messages conveying that individuals with darker skin are both at risk of skin cancer and vitamin D deficiency has the potential to cause confusion. Rather than targeted skin cancer prevention campaigns, it may be of more use to broaden general skin cancer prevention campaigns to consider sun protection use in settings other than the beach. This is reflected by our findings that participants reported generally good use of sun protection when at the beach on a hot day, but low use of sun protection on a day-to-day basis. Delivering current resources and materials to settings that this target group frequent, or into specific settings such as outdoor workplaces, could also be considered.

Study Limitations

These results should be considered in light of several study limitations. Firstly, the current study used qualitative research methods to explore broad concepts and themes. While qualitative research methods are highly appropriate for conducting initial explorations of an under-researched area ³², only a small number of individuals participated. In addition, individuals self-selected into the study, and as a result our sample consisted of individuals

who were English speaking, primarily young, highly educated, and worked indoors. This limits the generalizability of our findings. It is also possible that participants may have had skin types that may have been lighter or darker than type IV on the Fitzpatrick scale, thereby reducing the generalisability of the results to 'darker' skin types. However, as we did not assess skin type using a validated instrument (such as the Fitzpatrick skin type scale), this study limitation cannot be confirmed.

Conclusions

This study provides unique knowledge in an emerging area of research. Findings suggest that public health messages targeted towards individuals with darker skin may need to target strongly held beliefs that sun protection is not necessary on the basis of skin type by highlighting that those with darker skin types also need to use sun protection during peak UV times. Education about the prevalence of skin cancer and melanoma in the community may also be useful. These messages need to be considered within the broader context of vitamin D deficiency. Further conceptual, qualitative and quantitative studies to explore fundamental differences in attitudes and behaviours between those with darker skin and the general Australian population are needed to determine whether targeting of sun protection messages to individuals with darker skin is required.

New Contribution to the Literature

Individuals with darker skin are more likely to present with later stage skin cancers and die from melanoma. However, little is known about the sun protection attitudes and behaviours of individuals with olive and darker skin. Results of the study show that while participants had good overall knowledge of the dangers of skin cancer and appropriate sun protection behaviours, beliefs that sun protection is not necessary on the basis of skin type were

prevalent. There is a need to ensure relevance of sun protection messages to individuals with darker skin types, but to balance this within the context of high rates of vitamin D deficiency.

Conflicts of Interest

All authors declare they have no conflicts of interest.

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Ethical Approval

Ethical approval was granted by the University of Newcastle Human Ethics Research

Committee: H-2011-028

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