

YOUNG WOMEN'S RESPONSES TO NARRATIVE AND PICTORIAL MESSAGES  
ABOUT INDOOR TANNING: A QUALITATIVE STUDY

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## **ABSTRACT**

Stephanie S. Lane: Young Women's Responses to Narrative and Pictorial Messages about Indoor Tanning: A Qualitative Study  
(Under the direction of Seth M. Noar)

This study examined perceptions of indoor tanning behavior and anti-tanning messaging among college-aged women in order to better understand what types of messages and message elements might be effective in persuading young women to not tan indoors.

Two focus groups were conducted with participants who tan indoors either currently or who have tanned indoors in the past. Participants discussed benefits and harms of tanning indoors, and the relative effectiveness of several narrative and non-narrative anti-tanning messages.

The results of this study suggest that young women believe there to be significant benefits and harms from tanning indoors. Results also point to several strategies for future anti-tanning message design, including the importance of presenting a threat that is perceived as both real and highly possible for individuals who tan indoors, using key informants who have personal experiences with indoor tanning and its harmful outcomes, and with whom target audiences can identify.

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## **Introduction**

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Research has suggested that greatly decreasing use of indoor tanning devices will prevent future skin cancers, and reports a need for a comprehensive, multilevel approach. This approach should include implementing age restrictions for indoor tanning devices, limiting the amount of time individuals are allowed to use indoor tanning devices, among other regulations that limit the indoor tanning industry. Communication and health education campaigns are also urgently needed (Holman et al., 2013). This multi-faceted approach should coordinate efforts across local, state and national levels to most effectively reduce use indoor tanning devices (Holman et al., 2013). Studies state the need for targeted and tailored interventions as well as large-scale collaborative efforts that seek to reduce indoor tanning at the national, state, and local levels. A long-term goal is to gradually shift social norms, reduce indoor tanning behavior, and prevent future cases of skin cancer (Holman et al., 2013).

Though there have already been some indoor tanning interventions targeted at college students, particularly females, there have been no interventions that primarily use graphic or pictorial images, and there is only a limited amount of research that examines reactions to fact-based versus narrative-based messages. The research that does exist has found mixed results, and suggests that overall, statistical messages provide better overall information, but narrative messages better communicate realism of an issue to the audience (Greene & Brinn, 2003; Greene, Campo & Banerjee, 2010). There is a need for further research, specifically qualitative research that examines motivations and possible deterrents that exist for the younger female

population. This research should test specific messages, as this information could be useful to campaign strategists and those who wish to create messages to persuade this population to stop tanning indoors (Noar et al., 2015).

The current study will use a focus group method to garner rich, qualitative data and responses in two areas. First, this study will explore indoor tanning motivations and deterrents in young women who have tanned indoors. Second, this study will test the strengths and weaknesses of persuasive, pictorial, narrative and non-narrative messages intended to stop individuals from tanning indoors. Findings from this study will help guide message designers on future campaigns to convince young women to stop indoor tanning.

## **Background**

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Skin cancer is the most common form of cancer in the United States, with more than 3.5 million skin cancer cases diagnosed annually, and more than 76,000 melanomas that were diagnosed in 2014 alone (American Cancer Society, 2014). In 2015, nearly 10,000 people in the United States are expected to die from melanoma (American Cancer Society, 2015). While most types of cancer have decreased over the past decade, the rates of most types of skin cancer continue to rise, especially among teenagers and young adult women. The increase in skin cancer rates leads to unnecessary morbidity, mortality, and healthcare costs (Guy & Ekwueme, 2011).

Research shows that indoor tanning can be partially to blame for the increased rates of skin cancer, and sunlamps and tanning beds are the primary sources of exposure to artificial UV light. In 2012, over one million people in the United States visited tanning salons each day, and a 2011 survey found that 21% of high school girls and 32% of high school girls in their senior

year tanned regularly (Federal Trade Commission, 2010). Despite all of the evidence of its harms, indoor tanning remains a common practice, particularly among young, white female adolescents and young adults (CDC 2010; Eaton, Kann & Kinchen 2011; Albert & Ostheimer, 2003). Recent studies show that approximately 32% of white women aged 18-21 in the United States have gone indoor tanning in the past 12 months. In addition, the average individual in this group tanned 27 times per year (CDC, 2012).

Many cases of skin cancer are preventable, and reducing indoor tanning rates is an important public health goal that will help in decreasing skin cancer. Reducing indoor tanning can also reduce other health and appearance harms that are consequences of indoor tanning, such as wrinkles and leathery skin, burns, and eye damage (CDC, 2014).

Indoor tanning is more harmful than tanning in natural sunlight for multiple reasons. UV radiation emitted from tanning beds can have an even greater intensity level than the rays of the sun; there is usually a greater amount of exposed skin when individuals use indoor tanning devices; and lastly, indoor tanning exposes parts of the body to UV radiation that are not normally exposed to UV from the sun (Miller, Hamilton, Wester & Cyr, 1998).

One of the goals of the U.S. Department of Health and Human Services (DHHS) Healthy People 2020 is to reduce the number of new cancer cases, as well as the illness and death caused by cancer (U.S. Department of Health and Human Services, 2014). In 2014 the DHHS released the Surgeon General's Call to Action to Prevent Skin Cancer, which states that Americans should reduce their exposure to UV light, and calls for further research to evaluate effective messages around indoor tanning (U.S. Department of Health and Human Services, 2014). Two specific Healthy People 2020 objectives focus on reducing the rates of adolescents and adults who report using artificial UV light sources for tanning (DHHS, 2013). Indoor tanning has been

widely and frequently cited as a public health problem and an issue of public and societal concern. Factors that influence tanning behaviors are numerous, and range from individual-level factors to societal factors (Holman et al., 2013).

This study adds to the research literature and further explains why young women use indoor tanning devices, what motivates them to use these devices, and what may deter them from using indoor tanning devices. It will also look at what types of messages might be most effective in convincing young women to stop indoor tanning.

## **Literature Review**

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Indoor tanning fulfills a desire held by many fair skinned individuals in our society: to have tan skin. Having a tan first became fashionable in the United States in the late 1920s (Holman et al., 2013). Mass media was the first widespread promoter of the beauty of tan skin, and magazine articles and advertisements across the country promoted tanning as a way to enhance one's appearance (Holman et al., 2013). In the same way that mass media has been, for nearly a century, used to promote tanned skin, it now has the potential to influence social norms for the better, by denormalizing indoor tanning and encouraging people to embrace their natural, untanned skin (Holman et al., 2013). This literature review will examine the literature on indoor tanning, specifically looking at literature dealing with why women use indoor tanning devices, as well as how communication can be used to reduce indoor tanning. This will include a discussion of graphic messaging and visual communication, as well as the use of narratives in health communication.

## **Why Young Women Use Indoor Tanning Devices**

Several studies have reviewed factors that influence indoor tanners or would-be tanners. Hillhouse's review found that the most common reason cited for indoor tanning behavior is the belief that being tan is more attractive (Hillhouse & Turrisi, 2012). The second most common reason that individuals reported indoor tanning was for relaxation and stress relief. Other commonly reported reasons individuals reported indoor tanning were favorable parental attitudes toward indoor tanning, the belief that having a tan looks healthy, and the belief that indoor tanning is safer and better than tanning in the sun (Hillhouse & Turrisi, 2012).

In Watson et al.'s study, the researchers reviewed several additional factors that may influence indoor tanning use (Watson et al., 2013). The study identified several individual factors that influence indoor tanning behaviors, along with interpersonal and societal factors, and broader contextual factors. This suggests that indoor tanning is a complex behavior that is affected by influences at several levels.

Age and gender differences are some of the most basic determinants of indoor tanning: a previous study by the Centers for Disease Control and Prevention (CDC) found that indoor tanners were more likely to be women than men, and more likely to be younger rather than older adults (CDC, 2012). The most frequent indoor tanners were adult females aged 18-21 years (CDC, 2012). Among the adult population, indoor tanning is most common among younger adults aged 18-25 years, and becomes less common as people age.

One study found that women were more likely to self-report as indoor tanners if they had comparatively higher education or income, or if they lived in the Midwest or South regions of the United States (Mosher & Danoff-Burg, 2010). Overall, indoor tanners are more likely to be

female, Caucasian, and have unhealthy behaviors, such as frequent alcohol use, binge drinking, smoking, recreational drug use, a poor diet, and nonregular sunscreen use (Choi, Lazovich, Southwell, Forster, Rolnick & Jackson, 2010; Mosher & Danoff-Burg, 2010).

Indoor tanning is associated with self-esteem. Indoor tanners are likely to be appearance-oriented and view tanned skin as attractive (Choi et al. 2010). In essence, women use indoor tanning devices because they want to improve their appearance, and believe that this will also improve how they think about their own level of attractiveness. In addition, research has found that perceived social norms about indoor tanning and tan skin are associated with indoor tanning use by adolescents (Watson et al., 2013).

Finally, one study found that female adolescents who had college-educated mothers were less likely to tan than peers who did not (Demko, Borawski, Debanne, Stange & Cooper, 2003). This could be related to the finding mentioned above that indoor tanning behavior is related to favorable parental attitudes towards the behavior (Hillhouse & Turrisi, 2012). Research has shown that parental permission to tan and parental tanning bed use are strong predictors that teenagers will begin and continue indoor tanning (Watson et al., 2013).

### **How Can Communication Be Leveraged to Reduce Indoor Tanning?**

The body of literature around effective messaging for persuading individuals to stop indoor tanning is very small. A 2013 review suggested that indoor tanning interventions should address the determinants of tanning behavior at all levels of influence (Holman et al., 2013). This includes everything from individual characteristics to the influence of parents, providers, and schools, to larger contextual factors such as environmental and systems factors, social norms, media influence, and the indoor tanning industry (Holman et al., 2013). The present

study will focus mostly on the individual factors that affect indoor tanning such as an individual's desire to have tanned skin or an individual's understanding of the consequences of indoor tanning, since we posit that these factors, rather than societal factors, can best inform messages targeted to young women.

There are key determinants at the individual level that inform how interventions could and perhaps should address tanning behavior. As one example, indoor tanning is associated with a desire for tanned skin and to better one's physical appearance (Holman et al., 2013). These attitudes and beliefs are driven by perceptions of social norms that greatly value physical appearance, especially among females. Though research suggests that this is what needs to be changed in order to drastically reduce or stop the practice of indoor tanning, studies have acknowledged that work to change societal norms would require a coordination of efforts spanning several years or even decades (Noar et al., 2015). Changing young women's perceptions of social norms could be more feasible, but would still require comprehensive strategies and efforts. Some studies suggest that, in order to make anti-tanning messages salient for indoor tanners, they should focus on appearance-related effects of indoor tanning, such as premature skin aging, and that these types of messages could have the potential to initiate long-term behavior change (Hillhouse et al., 2002; Hillhouse et al., 2008).

A 2014 study developed a comprehensive scale to assess indoor tanning outcome expectations among young women who were members of sororities (Noar, Myrick, Morales-Pico & Thomas, 2014). Six positive outcome expectations and five negative outcome expectations were identified as part of the scale. The study found that current tanners had the most positive and least negative perceptions about indoor tanning, while non-tanners had the most negative and less positive perceptions, with former tanners falling in between the other two groups (Noar et

al., 2014). The Comprehensive Indoor Tanning Expectations (CITE) Scale gives a reliable and valid assessment of the beliefs that influence indoor tanning behavior, both the beliefs that would motivate someone to engage in indoor tanning, as well as those that would deter someone from indoor tanning (Noar et al., 2014). This study found that, in most cases, there were significant differences observed between the groups of current tanners, former tanners, and non-tanners. The authors suggest that this indicates that former tanners no longer see the potential appearance and health benefits to indoor tanning, but that they do recognize both the appearance and health harms of tanning. These findings imply that an individual's beliefs can change, and that these factors may be avenues by which to persuade current tanners to become former tanners (Noar et al., 2014). This gives hope to indoor tanning message designers that there are potential ways to create effective messaging that could be persuasive for current indoor tanners.

A second study that applied the CITE scale in an analysis of indoor tanning behavior among sorority women confirmed the existence of robust CITE positive and negative expectations (Noar et al., 2015). The study suggested that, due to the deeply embedded cultural perceptions about the attractiveness of tan skin and how much time and effort is needed to change the underlying issue, a fruitful approach for campaign designers would be to focus messages on outcome expectations about *indoor tanning*. This study further suggested ways in which outcome expectations could be translated into messages- challenging indoor tanning positive expectations, enhancing negative expectations, and reducing temptations to tan indoors (Noar et al., 2015).

### **Graphic Messaging and Visual Persuasion**

Visual communication is defined as use of any optically stimulating message(s) (Lester,



2006). Health communication research has shown that visual images can influence an individual's attention, how one recalls and understands health information, and an individual's health behaviors (Houts, Doak, & Loscalzo, 2006). As one example, graphic pictorial warnings on cigarette packs have been shown to be more effective than text-only warnings for impacting a range of smoking cessation-related outcomes (Hammond, 2011; Noar et al., 2014).

Research has shown that images and graphics are especially relevant for messages around skin cancer, since the signs and symptoms of skin cancer, irregularities of the skin, are largely if not completely visual (Abbasi et al., 2004). In addition, the behavior of indoor tanning and exposing oneself to the ultraviolet light of tanning beds results in direct and visible alterations to the skin: individuals who use indoor tanning devices often return with tanned skin, burns, freckles, or some combination (McWhirter & Hoffman-Goetz, 2014). Research has found that images can positively impact knowledge, attitudes and behaviors related to UV exposure and protection (McWhirter & Hoffman-Goetz, 2013).

Visual persuasion references how an image persuades the viewer (Foss, 2005). Lester (2006) defined persuasion as the use of "factual information and emotional appeals to change a person's mind and promote a desired behavior". Visual persuasion has long played a significant role in the promotion of health-related attitudes and behaviors (McWhirter & Hoffman-Goetz, 2014).

A 2014 study by McWhirter & Hoffman-Goetz systematically reviewed 47 studies on skin cancer and tanning found that very few used visual communication theory to guide the research, and only one study explicitly identified the visual communication theory that was utilized. The researchers call for better methodological and theoretical rigor in using visual images in skin cancer and tanning research (McWhirter & Hoffman, 2014). The present study

will explore the effectiveness of persuasive visual communication, and will focus specifically on the visual element in testing indoor tanning messages and elements of messages. We will also consider elements of visual communication theory in the methodology and analysis in order to contribute to the visual health communication field.

McWhirter & Hoffman-Goetz found that, overall, individuals who were exposed to images of attractive, tan people had more positive attitudes towards tanning, increased tanning intentions and increased their attempts to suntan (McWhirter & Hoffman-Goetz, 2013). For many decades and continuing in the present, mass media imagery including advertising and celebrity culture often promoted tanned skin as the “ideal” (Gamble et al., 2011). Individuals who consume a substantial amount of media – which is increasing as media becomes even more accessible – are more likely to see these images of “ideal skin”, and to potentially be influenced to want and seek out ways to achieve tan skin for themselves. This phenomenon can be explained by theories such as Cultivation Theory (Gerbner et al., 1986), Social Cognitive Theory (Bandura, 2001), and the beauty halo effect, which says “what is beautiful is good” (Dion et al., 1972). People are influenced by images in the media, especially images of attractive people. As people observe and internalize the images they see, they are likely to begin to behave in ways that mimic these images (McWhirter & Hoffman-Goetz, 2013). In the case of indoor tanning, for nearly the past century, many people have internalized the perception that tanned skin is beautiful, and have sought out ways to have tanned skin in order to be perceived, by themselves and others, as beautiful. Due to constraints of time, location, and other factors, indoor tanning has become a common practice for individuals, particularly young women, to achieve tanned skin without having to spend hours in the sun. The question remains as to how health campaigns and visual communication can turn things around so that young women will instead seek healthy

skin and refrain from indoor tanning.

### **Narrative as a Tool in Health Communication Messaging**

There is a growing body of research on the effectiveness of narrative messaging in health communication, and evidence-based indoor tanning interventions have already seen some success using this method. Narrative has been defined as “a representation of connected events and characters that has an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic being addressed.” (Kreuter et al., 2007). Narrative communicates through stories and is a way in which people around the world are comfortable and familiar giving and receiving information. Narrative can make a message resonate more deeply with the target audience based on a number of factors, including: to what extent the message recipient identifies with the person delivering the message; to what extent the message recipient is “transported” into the message; the emotion a message evokes in the message recipient; and, how effectively the message models or communicates the recommended behavior (Hinyard & Kreuter, 2007).

In one example of the use of narrative to communicate health risks, an Australian woman by the name of Clare Oliver was diagnosed with melanoma and died at the age of 26. She believed that her melanoma was at least partially caused by indoor tanning and publicly shared her story to help raise awareness about the dangers of indoor tanning. Research shows that Clare’s story garnered media attention and helped increase awareness about the link between indoor tanning, skin cancer risk, and the potential deadliness of melanoma. Media attention surrounding Clare’s story also helped launch new legislation and a decrease in the number of tanning salons in Australia’s provincial cities (MacKenzie, Imison, Chapman & Holding, 2008; Makin & Dobbinson, 2009; Sinclair & Makin, 2008).

Studies show that stories are very much a cultural phenomenon, and that stories resonate with people. This is likely because of cultural identifications by the target audience that provide lessons with consequences in simple ways that engage and transport the recipient through a sense of identification (Larkey & Hecht, 2010). Any campaign that targets young women with anti-tanning messages should deeply understand the target audience's culture and utilize key informants from the target audience's culture. This will help individuals identify with and be persuaded by the message. This study will address the need for deeper insights into the culture of the target audience, college-aged females, including insights into their attitudes and perceptions about indoor tanning.

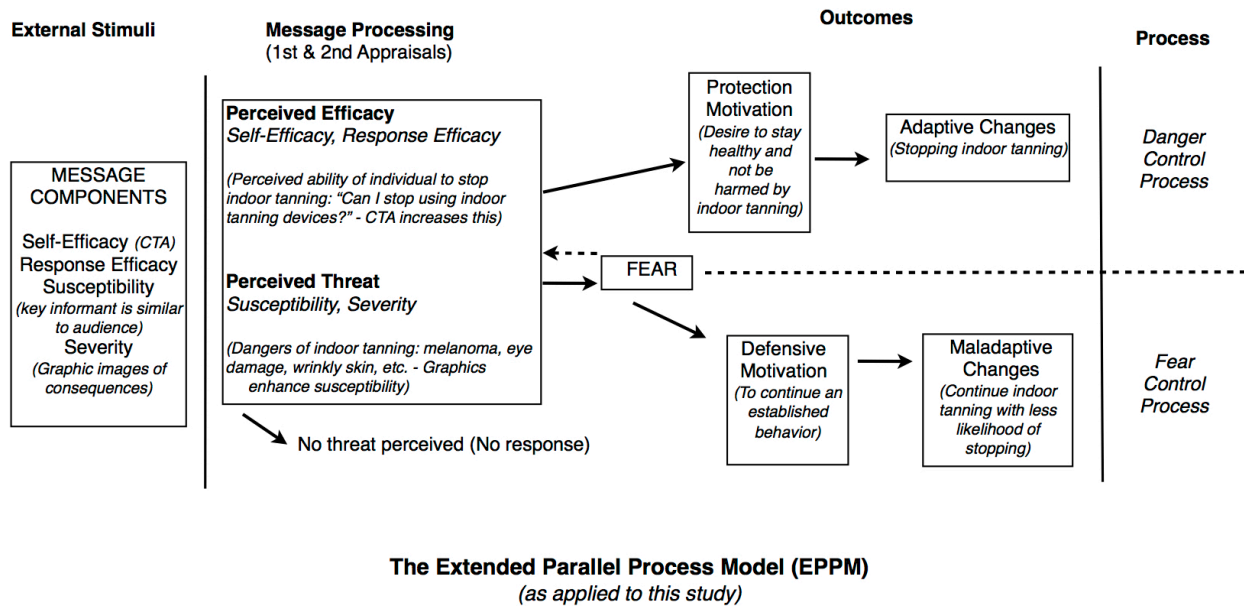
## **Conclusion**

The literature shows that indoor tanning behavior is still common among young white females, and that this behavior is likely a strong contributor to rising rates of melanoma and other adverse health effects. The literature also shows that there are many individual, social and societal motivations for indoor tanning, and there are ways messages could leverage these same motivations in efforts to persuade young women not to tan indoors. Strategies like strategic use of visual communication and narrative communication have both been found to be effective in health communication and public health, and warrant application in the area of indoor tanning. Given the dearth of skin cancer messaging research, the literature reveals the need for further research into how to best construct messaging for indoor tanning interventions. This study will examine indoor tanning messaging, looking specifically, through a qualitative lens, at how messages to persuade young women to stop indoor tanning can be constructed to maximize effectiveness for the target population – young college females.

## Theoretical Perspectives

Although there were several relevant theories that apply to this area of research and practice, the present study was guided by the Extended Parallel Process Model (EPPM). The Extended Parallel Process Model is a helpful tool for understanding how to best construct effective risk messages that are grounded in fear appeals and scare tactics (Edgar & Volkman, 2012). If created correctly, messages that effectively communicate the risks of indoor tanning could be effective in persuading current tanners to stop indoor tanning. Also, such messages could inform future messages or campaigns that the Food and Drug Administration or Centers for Disease Control might implement.

Figure 1



According to the EPPM, when individuals are first exposed to a fear appeal, they engage in a threat appraisal, based on the severity of the threat, and the individual's susceptibility to that threat. If an individual decides that the threat is not sufficiently severe and/or that they are not likely susceptible to that threat, then the message will be ignored (Witte et al., 2001). On the

other hand, if the individual decides that both the severity of the threat and their own susceptibility to it are high enough that they feel threatened, that individual will engage in an efficacy appraisal, in which they evaluate two forms of efficacy. The first is self-efficacy, which focuses on that individual's confidence in his or her ability to perform the recommended behavior. The second is response efficacy, in which the individual asks whether the recommended behavior will actually make a difference. The EPPM puts forth that a fear appeal will likely only be successful if both forms of efficacy appraisal are high (Edgar & Volkman, 2012). In the case of our subject matter, this means that individuals receiving messages about indoor tanning and risks around indoor tanning will only be persuasive if the individual is both confident that she can stop indoor tanning, and also believes that stopping indoor tanning will make a difference in protecting her health and/or appearance.

The EPPM informed the messages used in this study in multiple ways. Perceived susceptibility will be influenced by the focus on the risks of indoor tanning in the messages, as well as the narrative execution of messages. Perceived severity will be influenced by the use of graphic images which clearly show the (sometimes severe) negative consequences of indoor tanning behavior. Self-efficacy will be influenced by the "call-to-action," which is a phrase on the message that encourages young women to take action. Response efficacy will be influenced text that states or implies that stopping indoor tanning will reduce the chances of the harms depicted in the messages. As demonstrated here, all constructs of the EPPM have been integrated into the design of these theory-based messages.

## Research Questions

The current study sought to examine perceptions of indoor tanning behavior and anti-tanning messaging among college-aged women using focus group methodology. Focus groups were determined to be the best method in this study for two reasons. First, there is a lack of qualitative research in this area of study, and the present study will help fill this gap, providing in-depth and thematic data around perceptions of indoor tanning behavior. Second, because this study focused on message testing, and focus groups are an efficient way to glean in-depth information from a substantial number of participants, this was viewed as the most appropriate methodology to best answer the research questions and advance the body of work on effective anti-tanning messages.

The three research questions were as follows:

**RQ1:** What are the perceived benefits and potential harms that young women have about indoor tanning?

RQ1a: Are there differences between current and past indoor tanners?

**RQ2:** What are young women's reactions to anti-indoor tanning narrative messages versus simple, direct fact-based messages (both which include graphic images)?

RQ2a: Are there differences between current and past indoor tanners?

**RQ3:** What characteristics of anti-indoor tanning messages (e.g., graphic images, indoor tanning outcomes, "call to action") do young women perceive as most effective?

RQ3a: Are there differences between current and past indoor tanners?

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## Methods

### Recruitment

Research suggests that targeting young females for indoor tanning interventions is an efficient use of resources, as this population is the most likely to engage in the behavior (Lazovich et al., 2013). We collaborated with leaders from UNC-Chapel Hill's PanHellenic

Council that governs the 10 National PanHellenic sororities at UNC to facilitate participant recruitment through sororities at UNC-Chapel Hill. Delegates from each sorority introduced the study to their sororities at their weekly chapter meetings, and provide interested students with the link to the online study screener. Flyers were also taken to sorority houses by delegates to post and give to interested students. Lastly, each delegate included an invitation to participate in the study in their weekly chapter email that was sent to all members of each sorority. The study announcement for the sorority delegates, a sample recruiting flyer, and a sample follow-up email are available in Appendix A.

The email and flyers invited participants to access a microsite created for the study, through which interested individuals filled out a brief questionnaire that included basic demographic information and screening questions to determine eligibility for the study. Basic demographic information included: First name, age, and methods of contact (phone number and email address). In addition, individuals were asked to submit their availability for several possible times for focus groups. A copy of the screener can be found in Appendix B.

Once individuals filled out and submitted the questionnaire, we identified those that qualified: individuals who are at least 18 years of age and who had gone indoor tanning at least once in their lifetime. We then identified the two blocks of time during which most eligible individuals had available time. We contacted the individuals who indicated availability in those two times asking for confirmation that they were still interested in participating in the study, and we continued to contact eligible individuals until the groups were filled. Group assignment was done in a way that both groups would include a mix of current (i.e., past year) and former (not past year) indoor tanners.



Confirmation emails were sent to participants the week prior and reminder text messages were sent the day of the group to each participant. Both reminders included the date, time and location of the participant's scheduled group.

## **Participants**

A total of 32 respondents completed the screening survey. Of the completed recruitment surveys, all respondents were deemed eligible to participate based on the predetermined criteria for inclusion (age 18 or over, had gone indoor tanning at least once in their life, and available for some focus group times). Once eligibility was determined, respondents were called and, if they did not answer, were sent text messages to determine their availability to participate in one of the two scheduled focus groups. At the end of recruitment, N=19 individuals were scheduled for focus groups, N=9 individuals responded but were not available to participate at the scheduled times, and N=4 survey respondents never responded to the follow-up recruitment communication regarding participation in a focus group. Recruitment resulted in a total of 19 participants who agreed and were scheduled to participate in one of the two focus groups. Three of these participants did not show up the day of their scheduled focus groups, resulting in a total of 16 focus group participants across the two groups, with nine participants in the first group and seven participants in the second group.

The N=16 focus group participants ranged in age from 18 – 21 (median = 19); 94% of participants self-identified as White, and 6% Asian. The age participants reported first indoor tanning ranged from age 8 to 18, with the mean age being 15.81. Of the 16 participants, 4 had not tanned indoors over the past year (i.e., former tanners). Of the 12 current indoor tanners, n=1 (6%) reported indoor tanning regularly all year round, n=5 (31%) reported indoor tanning

regularly but only during particular seasons, and n=6 (37.5%) reported indoor tanning occasionally, only when needed (Table 1).

### **Moderator Guide**

The Moderator Guide was created to address the three key research questions listed above. Questions investigated two central areas: participants' opinions and perceptions of the benefits and harms of indoor tanning, and the effectiveness of different message elements in persuading young women to not tan indoors. The guide was created with guidance from Dr. Seth M. Noar from The School of Journalism and Mass Communication at The University of North Carolina at Chapel Hill. The Focus Group Moderator Guide and a full list of questions can be found in Appendix F.

### **Message Testing**

As part of this study, pictorial messages, intended to persuade current indoor tanners to stop indoor tanning, were tested. The content of these messages was based on prior research reviewed above and fell into three categories:

- Health threats of indoor tanning (e.g., skin cancer)
- Long-term appearance harms of indoor tanning (e.g., wrinkled skin)
- Immediate harms of indoor tanning (e.g., burns)

Each message included an image of a young woman with a depiction of one of the above consequences of indoor tanning. (All test messages can be found in Appendix G).

As this study looked at differences in perceptions of narrative vs. non-narrative messages, focus group participants were asked to respond to questions about one non-narrative message and one narrative message in each of the above conditions, for a total of six messages (3 categories times 2 message executions = 6 messages).

The content for all messages was written with input and feedback from a collaborating doctoral candidate (Jennah Sontag) and a faculty member (Dr. Seth Noar) at the School of Journalism and Mass Communication at UNC-Chapel Hill. The messages were graphically designed by Grayson Mendenhall, a graphic designer and Master's candidate in visual communication at UNC's School of Journalism and Mass Communication.

### **Procedures**

The IRB at the University of North Carolina approved all research procedures, study documents and consent forms before this study began.. One moderator conducted the focus groups, and a note-taker was also present to help with set-up and take notes. The focus groups were audio recorded and the recordings were fully transcribed. Each focus group session lasted approximately 2 hours. At the beginning of the session, each participant was given a Focus Group Consent form (see Appendix D) and asked to read and sign the form before the focus group began. Participants were then asked to complete a Focus Group Participant Questionnaire (see Appendix E). This questionnaire collected demographic information as well as basic information about their indoor tanning behavior. Next, the focus group took place. At the end of the focus group, a member of the research team distributed a CDC fact sheet on the risks and potential harms of indoor tanning, to ensure participants received information that could help them in protecting themselves from the dangers of indoor tanning. The fact sheet can be found at: [http://www.cdc.gov/cancer/skin/basic\\_info/indoor\\_tanning.htm](http://www.cdc.gov/cancer/skin/basic_info/indoor_tanning.htm). A \$15 Starbucks gift card was also given to focus group participants at the end of the group. Funds for this compensation were provided by the Roy H. Park Fellows Program at the School of Journalism and Mass Communication at the University of North Carolina at Chapel Hill.

## **Data Analysis**

Transcriptions from each focus group were read and coded independently by two coders, and potential themes were independently identified by each coder. The two coders then came together to agree on a common set of themes in the data. The analysis used a primarily directed form of content analysis (Hsieh & Shannon, 2005). A codebook with predetermined themes and concepts was used, based on constructs of the Extended Parallel Process Model and the messages themselves, and concepts from prior research, which helped guide coding and analysis. These included things like “Comparison of narrative vs. direct messages”, “Perceived harms of indoor tanning,” “Perceived severity of indoor tanning,” etc. During analysis, researchers read through transcripts and coded any content that related to the predetermined theme. Any content that researchers felt warranted a new code was given a new code. All pre-determined and new themes are reflected in the final results (Hsieh & Shannon, 2005).

In addition, extensive coding was conducted on the indoor tanning graphic messages that were discussed in the second half of each focus group. This section included in-depth discussion by participants on what was perceived as effective and ineffective, and provided insights into what message sources, message framing, and word choice would be most effective for the target population. The analysis of this content provides a tool to guide researchers and practitioners in the future study of and campaign creation for indoor tanning, with the purpose of creating more effective anti-indoor tanning messages for this population (Mills, Durepos, & Wiebe, 2009).

## **Findings**

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***RQ1. What are the perceived benefits and potential harms that young women have about indoor tanning?***

***RQ1a: Are there differences between current and past indoor tanners?***

### ***Perceived Benefits of Indoor Tanning***

The perceived benefits that young women have about indoor tanning fell into three general categories: Appearance benefits, health benefits, and efficiency/time benefits. Before the discussion began, participants were informed that, for the purpose of the group discussion, “indoor tanning” was defined as “the use of a sunlamp, tanning bed or tanning booth to get a tan.” It was clarified that this did not include the use of tanning lotions or sprays of any kind.

### ***Appearance Benefits***

The most frequently mentioned category of benefits was that of appearance benefits. It was agreed upon universally among both current and former tanners that being tan makes them look better, and makes them both look and feel more attractive. More specifically, participants discussed the benefits of having a base tan before going on vacation, the benefit of being tan/not being pale for events such as prom or formal, and the commonly held perception that you look skinnier when you’re tan. This last perception was affirmed by several individuals, who indicated they would prefer to be tan and in not quite as good physical condition, rather than more slender but with paler skin.

“So, when people are like ‘oh, you look really tan’, I’m like ‘I also look skinny!’ and like, have you heard the saying that if you can’t tone it, tan it?”

“Yeah, it makes your muscles look more defined.”

“I’d rather be like, a little chunky and tan than like, pale...”

“I’d rather be a little thicker than a snicker instead of being like, super skinny and like, transparent.”

Participants also cited some appearance-related social benefits of indoor tanning. Participants in both groups mentioned that they feel they get more compliments from other people when they’re

tan, and cited the importance of being tan in order to look your best and attract potential romantic partners.

“Well, people compliment you a lot, they’re like ‘oh my god!’”

### ***Health Benefits***

One theme that surfaced was the idea that indoor tanning makes participants feel healthy.

Participants discussed how going indoor tanning is a part of an overall healthy lifestyle, and that it is often grouped with other healthy behaviors. Participants mentioned that indoor tanning is motivation to engage in other healthy behaviors like eating well, exercising, and taking better care of their skin. This was cited largely by current and more regular tanners, rather than former or occasional tanners.

“Everything goes together when I’m tanning...I tend to also be working out more, because like, you’re going to, if you’re always checking out your tan, then you’re always checking out your bod, and you’re like “damn, I should be working out too.”

“It makes you take care of yourself a little more, because you’re like, if this part looks so good, like, let me make the rest look good.”

“I feel like I take better care of my skin when I tan, because I use lots of moisturizer and stuff.”

Participants also brought up the benefits of getting Vitamin D from indoor tanning along with general mood enhancement, and also that indoor tanning can help prevent burning in the sun, especially during vacations and other extended time spent outdoors.

“I’ve heard that in the wintertime, when women go through seasonal depression, sometimes their doctor will tell them ‘oh, if you go in the tanning bed, like, once a week, it will make you happy.’”

“The place where I go at home has like ‘Vitamin D – It’s good for you’ posters everywhere.”

In addition, participants in both groups mentioned that indoor tanning helps skin to clear up,

improving or even eliminating both acne and eczema. One participant even noted that a dermatology clinic she used to work at had a modified tanning bed that they used in treating patients with certain skin conditions.

“I think it helps with acne and stuff, and my friend said it helped with eczema.”

“I’ve also heard that it’s good for your skin, I mean, as far as breakouts go. Not good for your skin-skin, but I heard it heals breakouts.”

### ***Efficiency and Convenience of Indoor Tanning***

Other benefits cited included the time and convenience benefits. Participants agreed that indoor tanning is a much more efficient way to get a tan than having to spend several hours outdoor in the sun to get a tan. In both groups participants cited busy school and work schedules as barriers to being tan, but that indoor tanning was a way they could always be tan, as it is so flexible.

Some participants even discussed how they most frequently go indoor tanning before going on vacation, so that they don’t feel the pressure to be laying out the entire time they are on vacation, and can still return with the tan people expect them to have and will comment on.

“I hate when I go somewhere and I’m like, so pressured to be tan that I just spend the entire time, on vacation laying out, baking myself...I kind of like that you can go to the tanning bed and get that base tan.”

“It’s so easy too...you take 18 minutes in the tanning bed, and you just spent 4 hours in the sun...it’s so easy.”

“I only tan in the spring and summer, which is silly, because I know I can go outside, but it’s so much easier when I’m working and in school and all that stuff, I’d rather just go and lay in a bed, and I probably still will.”

Multiple participants talked about how their apartment complexes and many other complexes now even have tanning beds or booths on the premises and available free of charge to all residents, making regular access to indoor tanning equipment even easier.

### ***It Feels Good***

Participants across both groups also expressed the sentiment that they and others go indoor tanning simply because being inside a tanning bed or tanning booth feels good, and is an enjoyable activity for them. Participants discussed how it's a relaxing thing to do, a great study break, and, especially in the winter, very warm.

“It is really relaxing to me, like if you had kind of music playing or something, and sometimes they can put a fan on you, so it's almost like you're at the beach, and you have a breeze.”

“It's such a nice little relaxer, and then I can go take my shower and get it all taken care of.”

### ***Perceived Harms of Indoor Tanning***

Participants discussed several harms and potential consequences to indoor tanning, which fell into three general categories: appearance harms, health harms, and social harms.

#### ***Appearance Harms***

Participants acknowledged the potential of indoor tanning to harm one's appearance, and mentioned specifically that wrinkles, sunspots, and burns can and often do happen as a result of indoor tanning. Participants, especially the current tanners, overall did not suggest that appearance harms were deterrents to indoor tanning or would stop them from going, but did acknowledge that the potential harms to their appearance were something they thought about regularly, and for some influenced their frequency of indoor tanning.

“I stopped going for several years because I just kind of got scared of what I'm going to look like when I'm older, because of it. Wrinkles, and sunspots and stuff.”

“I'd probably go a lot more if I wasn't thinking about wrinkles and stuff like that.”



The perception that tanning bed tans don't look as natural as real tans was also communicated, and participants talked about how it doesn't look as natural, and that it can be easy to tell the difference between a fake (indoor) tan and a real tan.

“I don't need to be tan all year round I don't think. It looks unnatural. If it's like, the dead of winter, and you're really orange.”

Another perceived appearance harm was the burns that can occur as a result of indoor tanning, although, as discussed later, current regular tanners especially noted that burns from indoor tanning are easily preventable.

“I know I like when people say when you're tan, but I hate when people say, ‘You look like you got burned.’”

### ***Health Harms***

Participants mentioned several health harms of indoor tanning, including aging, skin cancer, burns, and sunspots. The most severe and important health harm acknowledged in both groups was that of skin cancer, and specifically melanoma. Skin cancer was seen as the most severe, worse than wrinkles or burns, as shown later in the message testing results, and participants acknowledged the reality that many die from skin cancer.

Some participants, especially former tanners, suggested that getting burned in a tanning bed is worse than getting burned from the sun.

“I know if you get burnt in the sun it hurts really bad. But like, when I imagine a tanning bed burn, it's bright red, and it just hurts.”

“It's almost like purple. In a weird way...it just hurts a lot more.”

Some participants acknowledged that indoor tanning is unsanitary, and one participant even shared the story of a friend who got some sort of bacteria on her from a tanning bed and had to take antibiotics to treat it.

“They clean it, but it’s kind of gross if you think about it.”

### ***Social Harms***

A common theme that came up, and something not discussed in depth in the previous research was the presence of stigma around indoor tanning and those who tan indoors. Participants discussed the fact that, although they feel that they receive more compliments about their looks when they are tan, when someone finds out their tan is from indoor tanning, there can be somewhat of a dismissal of that compliment, as though their tan is no longer valid or attractive.

“And people will say, if they don’t know you’ve been tanning, like “oh, you look really great today”, and you’re like “Oh, I went tanning,” and they’re like ‘ohhhhh.’”

“It’s like, they take it back.”

There was also a common perception that there was somewhat of a catch-22 with members of the opposite sex, as participants expressed that most males they knew did not like the idea of girls going indoor tanning and found it fake, but that, at the same time, it was the males that wanted girls to be tan.

“I don’t know what it is with guys...because they’ll be like ‘Oh I hate it when girls go fake tanning,’ but then they obviously like it when girls are tan.”  
“Yeah, or like ‘this is half the reason we do it, is for you!’”

Another social drawback to indoor tanning discussed is the overwhelming presence of disapproval from others, particularly parents, due to safety concerns of the practice. Several participants indicated disapproval – and in many cases strong disapproval – from their moms. In

some cases, parent's disapproval of indoor tanning was so strong that the participant has still not informed her mother that she goes indoor tanning.

“My mom hates it...she knows that I tan, obviously, but she hates it. And my aunt, she works in a hospital, and she was like ‘you’re insane – stop.’”

“Yeah, my mom always tries to get me to wear sunblock in the tanning bed.”

Interestingly enough, though a majority of the participants acknowledged parental or familial disapproval of indoor tanning, this was not seen as a barrier or a motivating reason for young women to stop indoor tanning or not go in the first place. Instead, it was discussed as a negative reality that was considered by all but not taken by any as a reason to change behavior.

Other harms or reasons young women might decide to not go indoor tanning included the expense of regular indoor tanning and the claustrophobia some individuals experience from being inside a tanning bed.

“It’s not really a necessity, so if people are trying to cut back on their spending, maybe cut that out.”

The remaining two research questions will be addressed through the following themes that emerged during the message-testing section of focus groups.

***RQ2: What are young women’s reactions to anti-indoor tanning narrative messages versus simple, direct fact-based messages (both which include graphic images)?***

***RQ2a: Are there differences between current and past indoor tanners?***

***RQ3: What characteristics of anti-indoor tanning messages (e.g., graphic images, indoor tanning outcomes, “call to action”) do young women perceive as most effective?***

***RQ3a: Are there differences between current and past indoor tanners?***

## Message Characteristics

### *Messages need to be realistic*

Of the six messages that were shown to participants, almost all were found to be in need of editing to make the graphics look more realistic. Participants not only knew and were quick to point out the elements of each image that did not seem real, but this proved to be a distraction in processing and discussing the more central elements (the condition and text) of each message. The test messages, all of which used stock images and not real people with the condition, also damaged the credibility and subsequent persuasive effects of each message.

“I’ve never seen anyone look like this.”

“It doesn’t look like a burn. She would literally need to only hold that part of her face to the lamp by itself to get that weird of a burn.”

“It just doesn’t look the way wrinkles usually look. Usually it’s like around the mouth, and eyes...these are just lines.”

“If I saw this, I would just turn the page.”

“Make her more realistic looking more personalized.”

“I think she should be older. Because we don’t get wrinkles til we’re older. So it’s not believable, even if you do tan indoors.”

“I wish it would be like, a real picture, someone with premature aging, instead of like, weirdly Photoshopped.”

“If I see a fake like, completely fake looking ad, I’m going to be like ‘I don’t care, that’s not real, it’s not going to happen.’”

Participants suggested ensuring key elements are made as realistic as possible to allow for maximum identification and minimal distraction in the processing and persuasive appeal of the message. They wanted to see messages and situations that were plausible and made sense to them. Suggestions included making sure the key informant was at least somewhat tan, that her

age was defined so that the condition shown was not confusing (i.e. someone with early aging wrinkles was defined as being in her 30s vs. close to college-aged). Participants also responded to one of the more illustrative messages that depicted wrinkles on one side of the face and not the other, and felt that it would be more effective if the image were more realistic rather than illustrative, so as to help the target audience better identify and not be confused.

Participants also mentioned that using as many real-life stories as possible, and utilizing key informants who had or currently do actually suffer from the condition, could effectively demonstrate the reality of the threat to the target audience.

“Maybe get someone that actually has it, and use that person, because I Just feel like, she doesn’t look like she would have that.”

“Also having like, actual victims, like people that don’t look like models.”

“I think you need like, a picture of real people, doing before and after, and like, a story that’s relatable, but about something serious like cancer, or something that lasts a lifetime.”

### ***Messages need to be clear***

Participants also suggested that messages that were in any way ambiguous or confusing were ineffective. The burn condition message and wrinkle condition message both perceived as somewhat confusing, and participants believed that the image in both messages could easily be part of an ad for something else, and suggested that this confusion could result in less persuasion.

“It doesn’t have enough information on it.”

“It doesn’t even look like a burn.”

“It looks like I’m watching a Chem. 101 lab.”

“Yeah, I think it’s too extreme, and at the same time it doesn’t say enough that’s like actually usable or effective at all.”

In addition, in both groups highlighted the importance of specifying the condition, and providing enough context around it in order for the target audience to get a good picture of what was going on. In the case of wrinkles, it was suggested that by providing details like the key informant's name and age, and possibly how frequently they indoor tanned or for how many years, this would provide a better, and more believable message for the target audience to process. For burns, it was suggested that how a burn occurred from indoor tanning would be important to specify, since some participants had never heard of severe burns occurring from indoor tanning.

“It’s just like ‘I got a really bad burn’ like, say a 3<sup>rd</sup> degree burn, or...that’s kind of more intense. A 3<sup>rd</sup> degree burn would blow...”

“I feel like things spread easily when there’s an actual story, like, if one of your friends was like ‘don’t go tanning, I heard this girl got burned,’ which is all you can really tell from this, she got a really bad burn. If someone was like ‘don’t go tanning, I heard this stuff spill on her...had a light break on her face...’ that’s a lot scarier than someone just being like ‘I heard this girl got burned really bad.’”

In addition, messages where the graphic image was not perceived as realistic created a mismatch between the image and the text, which damaged the overall credibility of the message and made it less persuasive for participants.

“I think the picture has to match the story. Like, the story is believable, but the picture’s not.”

Lastly, participants suggested that messages should be careful not to highlight too many of the benefits of indoor tanning. Participants discussed how this was both confusing, and could lead message recipients to believe the key informant did not actually stop indoor tanning, and could also act as a cue in reminding message recipients of the benefits of indoor tanning.

“More than like half of what she’s saying is about how good indoor tanning was and then ‘one time I got burned, it wasn’t that cool’...I don’t know.”

“Don’t tell me all about how great it was before it happened.”  
“Yeah, the first half, I’m like ‘Yeah, go to the tanning bed!’”

***Narratives are effective overall, but should be limited in length and channels carefully chosen***

The narrative messages were, overall, received more positively than the non-narrative direct messages, and were perceived to be overall more effective in persuading young women to not indoor tan. The most commonly stated reason that participants preferred the narrative messages was that the narrative messages were found more relatable for participants, as the stories included reasons participants go indoor tanning (i.e. to get a glow for formal) and also indicated common times when they began indoor tanning (in high school, college, etc.) Some other reasons participants found narrative messages more effective were due to it putting the condition into a more understandable context, the fact that participants could relate better to the key informant in the message, and that the key informants were communicating through stories rather than a more direct and paternalistic manner.

“It’s more personalized. Easier to relate.”

“I think it would be more effective, because this one [non-narrative] is a little more aggressive, and people can kind of shut that stuff out when she’s like ‘this is going to cause aging and wrinkled skin’, but this [narrative] is kind of presented in a nicer way, just like someone telling their story, which people would be more receptive to.”

“It’s a relatable story. More age-appropriate. And it brings up things that we relate to, like formal, and how it was quick.” - melanoma: narrative

The only major drawback participants found with the narrative messages was that the narrative messages presented were perceived to be too long, especially for the channel presented: a still print ad. Participants stated that neither they nor their friends would stop to read most of the narrative message due to the length. In both groups the non-narrative

ad was preferred only for the burn condition, mostly due to the fact that the context given in the narrative failed to provide clarity on how the informant in the message actually was burned.

“As far as advertising goes, I’ve heard that it’s more effective if it’s shorter text. I do think that the paragraph is more relatable, but, also just the fact that it’s bigger...some people probably wouldn’t stop to read it.”

“Yeah, I like it...it goes better...but if you’re going down the street and you see this, you’d be like ‘I’m NOT stopping to read that.’” –*Burn: narrative.*

Participants did suggest that utilizing a different channel, such as video testimonials or PSAs, or even a print ad in a space where the reader/viewer would likely have more time, such as in a magazine, would make narrative messages much more effective. If using a still print ad in a channel where participants may be able to otherwise ignore it, participants suggested simple graphic messages that indicate narrative, but keeping the number of words to a minimum.

“I think they could’ve just said “I started indoor tanning in high school, I didn’t realize this is how I would look 10 years later” – that’s all you would need to say.” – *wrinkles: narrative*

“I think saying when she started is good, but all the extra stuff doesn’t do anything for me. And saying when she started only helps because that’s the time that it could affect me.”

“I think they put that in for the relatability, but it doesn’t really do them a favor, because I think the relatability is the person in the picture, more than anything is like the superficial ‘oh wow, I can see that being me’...so you don’t need more of them talking about it to make it more relatable.”

The presence of an image, and an image of a girl with whom the target audience can relate and identify with, was found to be an essential element in any anti-indoor tanning message.

Participants suggested that, while details like why someone goes indoor tanning does help them relate to the key informant, if the image is targeted appropriately, those textual details may be



superfluous and unnecessary, because the image with a few simple descriptors, often speaks for itself.

“I think it’s be really impactful if like, say it was a 30-something girl who had wrinkles, and made her look a lot older, if you, even if you just put “Sarah, 30 years old”, that would be like “wow, damn.” And then like, that’s a name, age, that you place that person that makes them seem more relatable...if she really was 30 and looked like she was 60, even that in itself, you don’t need any explanation.”

***Messages need to show indoor tanning harms as both sufficiently severe and plausible***

It was clear from the discussions in both groups that the messages tested did not effectively convince participants that the threat was severe, nor that they were susceptible to the threat presented, across all three conditions of burns, wrinkles, and melanoma.

Participants repeatedly suggested that the harmful outcomes of indoor tanning behavior needs to be shown as sufficiently serious and severe, or else it will not be effective in persuading young women to not indoor tan.

“Skin cancer, I think there’s a lot more to it than just having a mole.” –*melanoma: narrative*

“Like, she doesn’t look like she’s going to die from this, she doesn’t look like, serious.” – *melanoma: narrative*

Though some participants acknowledged that tanning bed burns seem to be worse and more painful than burns from the sun, both former and current tanners made it very clear that they believe if individuals are smart about indoor tanning, they are not highly susceptible to getting burned from it. Participants suggested that if individuals who go indoor tanning follow the instructions of the staff at indoor tanning salons, especially related to time of exposure and protective equipment (eyewear, etc.), that some health risks of indoor tanning, especially burns, are not very likely to happen.

“Some places are really good about making sure you don’t go longer than you need. And looking at your skin tone, and seeing what they would suggest.”

“They’ll make sure you do the right amount of time.”

“They will NOT let you do more than you’re allowed to.”

And participants indicated that even melanoma, which was acknowledged by all participants to be a serious threat and something they think about when indoor tanning, needs to be portrayed in a sufficiently serious, life-threatening way. Participants wanted the key informant to look sicker, and to be set in a clearly negative and somewhat dramatic situation in order to effectively communicate that.

“But if you said like, the girl was in a hospital bed, I think that was more like ‘wow, you could really get cancer.’”

“Yeah, saying it causes deadly skin cancer, like, show me an image that reinforces that.”

“People with cancer look more sick...maybe have a girl in a prom dress who bawled going through chemo...”

It was made clear by nearly every single participant that they believe statistics to be highly effective in this type of messaging, and that, without statistics, it is difficult for message recipients to understand the context of the situation, as well as the message recipient’s true susceptibility to the threat. Essentially, many participants indicated that statistics were necessary in order to effectively convince members of the target audience that the threat was relevant to them.

“I think it’s also important to put into context, because it’s easy to be like ‘Oh, she must be addicted to tanning...I don’t go that often, like, to contextualize it, and to be like ‘this woman went this many times a week and then, over this period of time’ type thing.”

“I’ve never gotten a painful burn from indoor tanning, and I’ve never heard of anybody who has. So, I’d like to see some proof.”

“That’s not going to scare me, because I’m going to be like, well, she was 1 in 5 million that that happened to, so that’s not going to happen to me.”

“It makes it more real, and not like, ‘Oh, she’s just an extreme case.’”

Participants also suggested that incorporating statistics into messaging would be more attention catching and better highlight the severity of the harmful effects of indoor tanning, and also mentioned the possibility of including multiple individuals as key informants in messages, to help illustrate that it’s not only an isolated incident that happens to very few young women.

“I think a statistic would probably be more effective, just because we all know like that’s kind of a well-known fact, so if it’s something a little more shocking, people would pay more attention to it, and I don’t think the majority of people know statistics as well as they know general facts.”

“Yeah, if there were multiple people that this actually happened to, then it’d be like ‘o wow, that actually happens.’” –*burns: narrative*

Lastly, the permanence of conditions like wrinkles and skin cancer was noted, and text that highlighted the permanence of a harmful outcome (such as wrinkles or melanoma) was seen as more persuasive than messages that did not call attention to this.

“I like the last part – it says, I would look just 10 years later, and then, for the rest of my life, like, it’s going to be permanent. It’s never going to go away.”

“I like ‘and for the rest of my life’ too, because it kind of like, is not just 10 years later.” – *wrinkles: narrative*

### ***Refraining from indoor tanning was not seen as an effective way to prevent harmful outcomes***

An important theme that emerged was that response efficacy, in this case the belief that stopping a behavior will successfully prevent the threat and subsequent harmful outcomes, is incredibly low in the area of indoor tanning. It was clear from the analysis that participants across both focus groups, and current tanners and former tanners alike, do not believe that stopping or not

going indoor tanning will prevent the harmful outcomes they know to be caused by indoor tanning. Participants know that indoor tanning is harmful and causes health and appearance harms, but also discussed how a lot of other factors contribute to those outcomes. For example, groups discussed that tanning or just being outdoors in the sun can lead to melanoma, that not sleeping and stress can lead to wrinkles, etc. It was clear that, while participants don't see these outcomes as inevitable, they don't believe that indoor tanning contributes largely enough or is linked closely enough to those outcomes to motivate a change in behavior.

“I'm not as worried about wrinkles and sunspots, because I know I'm in the sun during the summer. I'm going to get them regardless. The only way I could prevent is not intentionally tanning outside in the summer.”

“But drinking does the same thing, smoking does the same thing, not sleeping does the same thing...there's like, a lot more factors that lead to wrinkles than that.”

“Obviously I'm not going to be ignorant – I know when you put those sort of rays on you from a bed, it's a lot different from the normal sun, but, skin cancer is a problem, and it always has been a problem just with the sun, just with people who would lay out the whole summer.”

“I think if they're really just trying to prevent indoor tanning, they need to have some sort of statistic about the difference between regular tanning outside and indoor tanning.”

Another interesting point was made that, due to the present-day “media overload”, participants and others are constantly inundated with messages about things that are harmful to them and many that “could cause cancer.” Participants noted the difficulty of taking any of these things seriously and see themselves as very susceptible, because of the sheer volume of threats they are constantly informed about via social media and other channels.

“People say that basically everything you do causes cancer, so when you say drinking diet coke is going to kill you, doing all this stuff is going to kill you, it's kind of hard to take it as seriously that I'm going to get skin cancer from a tanning bed, because I'll get it from, you know, walking outside and being in the sun.”

“I feel like it needs a statistic, because, nowadays you can get cancer from anything. So people are just going to look at it and be like ‘okay.’” –*melanoma: non-narrative*

“I feel like social media is always telling us what’s going to harm us and stuff, so it doesn’t seem like ‘oh, that’s great’ unless you actually have statistics and things like that.”

### ***Fear in messages could be maximized for increased persuasion***

Participants in both groups, but especially the current tanners, believed that messages that are more startling, depicting more severe and frightening situations, would be more effective in persuading young women to not indoor tan.

“I think it should say like ‘deadly melanoma’ or something...because then even anyone who doesn’t know what that is, they’re like ‘oh my goodness, what is that?’” – *melanoma: graphic*

Participants asked for messages that were scarier, that depicted something that couldn’t be ignored. In addition, participants from both groups referenced the intense fear they felt at seeing indoor tanning utilized in recent horror movies, and that those images, although clearly not real and didn't ultimately influence participants to not indoor tan, had stuck with them for several years.

### **Comparison of Conditions**

#### ***Burn condition lowest perceived effectiveness***

Messages depicting burns as a harmful outcome of indoor tanning were not well-received by either group. The main theme that emerged and the reason for overall dislike and low persuasive appeal for the ads was that participants overall did not believe that this type of condition (painful burns) could result from indoor tanning.

“I just don’t think like having painful burns as a reason to not tan, I don’t think that’s realistic.”

“The thought of having wrinkles freaks me out, the thought of skin cancer freaks me out a lot, but, if it’s like a burn that’s painful, but goes away, that doesn’t really freak me out.”

One participant did acknowledge that, although the current and former tanners knew the potential harmful outcomes of indoor tanning, those who were younger and had never gone indoor tanning might not know as much about its reality, and therefore could be persuaded by a message depicting painful burns.

“To someone who’s never tanned, I guess that could be scary, because you wouldn’t know what happened. Like, obviously we know that’s ridiculous, but if someone had never been, it’d probably scare me.”

The burn condition clearly showed that the threat of painful burns as depicted in the test messages did not effectively heighten perceived severity or susceptibility.

### ***Melanoma seen as most compelling and severe condition***

In both groups, participants overwhelmingly agreed that melanoma was the best condition for a campaign to persuade young women not to indoor tan. Participants discussed how skin cancer, and especially melanoma, is something that is hard or impossible to ignore. Both current and former tanners in each group were consciously aware of the danger of melanoma and that indoor tanning increases their risk of skin cancer. Both groups agreed that this condition would be most effective due to its severity as well as the understanding by most that indoor tanning increases an individual’s risk of developing skin cancer.

“We talked about how the #1 fear for us is cancer, it’s a little more serious than just the aging and wrinkles.”

“It’s more effective saying that ‘you can die from this’ than ‘oh, you can get wrinkles’ type of thing.”

“You kind of know you could get sunburned, you kind of know you get wrinkled, and you kind of say, even if it does actually happen to me, I can handle that...and then, the cancer thing is...I don’t think I could handle that.”

“Cancer’s one of the effects that you can’t really take lightly. Burn, you can heal, you get wrinkles, bummer, you would’ve gotten them later anyways. Cancer like, you kind of have to hit hard with it.”

“And like, I haven’t tanned in over a year, and if cancer wasn’t a factor, I’d be tanning right now.”

But, as was the case for all of the messages tested, even messages depicting melanoma should be made as realistic as possible, and participants did not believe the portrayal of the key informant with a large mole on her face was entirely realistic.

“I don’t think the picture’s believable at all. She’s not tan, she’s not sick, and she has a huge mole on her face. Nobody would let it grow to that size.”

Participants suggested that a message about skin cancer should either depict the scar after a melanoma spot is removed, or a girl in a hospital getting cancer treatment. It was believed that a mole-like melanoma on an otherwise perfect and attractive key informant did not effectively communicate how serious the condition is, and doing it through a more serious scenario, thereby increasing the perceived severity of the condition, would be more effective. Participants suggested either changing the mole to a post-melanoma scar, or having a girl in a hospital bed who is undergoing treatment for skin cancer.

“I think it would seem more permanent if she had the scar. And you’re like, ‘oh, well, that’s not going away.’”

### ***Wrinkles seen as permanent but unavoidable***

Participants liked the idea of a campaign depicting early aging wrinkles, and acknowledged that, because of the fact that most young women indoor tan to increase their physical attractiveness, a campaign highlighting how indoor tanning harms physical appearance could be a good strategy. Because wrinkles are a natural part of aging, and because most participants knew that wrinkles can be made worse by exposure to UV rays, this condition was seen as effective, and one that would, for most, be very clear and believable as an outcome.

“No one’s going to be like ‘it doesn’t cause aging or wrinkling’ because like, everyone can see that in their day-to-day life.”

“That’s a lot more effective because it’s something we actually think could happen, and could happen to anybody.” – *wrinkles: non-narrative*

One problem with the wrinkles condition, as mentioned above, is that participants did not feel that they were particularly susceptible to early aging wrinkles, especially if they didn’t tan regularly, and even if they did, it didn’t seem a severe enough condition to motivate a change in indoor tanning behavior.

“I don’t know if this one makes me not want to tan...just because, I’m going to age regardless.” – *wrinkles: non-narrative*

“I would only think about getting actual wrinkles while I still looked that young if I was tanning every single day, for years, no lotion.” – *wrinkles: non-narrative*

“I’m sure we’re all going to get wrinkly, and I feel like, you’re just going to be like ‘damn, I’m getting old’, you’re not going to be like...oh, this is because I tanned.”

One suggestion participants in both groups made to increase the credibility and persuasiveness of messages about wrinkles is using before and after photos, in which the key informant’s age and indoor tanning frequency is more clearly defined.



“If I saw real wrinkles that bad, and she looked like she was 25, I’d still be scared, I’d be like ‘alright, bye.’”

### ***Comparison of Calls To Action***

The bottom of each message contained a brief one-line call to action, with bold white text in a black box. The CTAs were evaluated highest when they promoted self-efficacy for the message recipients rather than simply mandating an action. Both groups mentioned that all three calls to action at the bottom with the black background stood out enough to call attention to the message.

#### *1. Protect Yourself: Rethink Indoor Tanning*

The “Protect Yourself” CTA was seen as especially effective because it gave control to the message recipient, rather than sounding like a paternalistic directive statement.

“It feels more empowering, like, you can take care of yourself type thing.”

#### *2. It Isn’t Pretty: Learn the Truth About Indoor Tanning*

This CTA, paired with the wrinkle condition, also received very positive feedback overall, and mostly for the same reason: it invites message recipients to learn more of the facts and realities about the harms of indoor tanning. Some participants also thought it was a clever play on words and that there are other elements that could be incorporated into this message to match its focus on appearance.

“It’s good that they say ‘learn the truth’ because it’s not trying to say that this is the only reason to, because then people would be like “learn”, well maybe go and learn more”.

“It’s getting you to inform yourself.”

“You could use that, like, getting ready for formal, like ‘it isn’t pretty’, that could be effective.”

#### *3. Don’t Get Burned by Indoor Tanning*

The call to action at the bottom of the burn condition messages, “Don’t get burned by indoor tanning” was the most criticized of all the calls to action, and the only one that both groups agreed would not be very effective as part of a message. Participants saw this CTA as misleading, passive, and ineffective overall.

“It’s kind of like, challenging to it, like ‘don’t get burned by indoor tanning’, but you can still go, just don’t get burned...see if you get burned or not.”

“It’s like, very passive.”

“This is saying ‘you’re going to get burned’...you won’t.”

Overall, the comparison of CTA reveals that participants preferred direct messages with a clear call to action that enhance self-efficacy, and indicated that these would be most effective for the target audience.

### ***Current vs. Former Indoor Tanners***

Though this study set about to find out if there were any differences between the perceptions and opinions of current vs. former indoor tanners, the small sample size and limited number of former tanners does not allow for a reliable look at similarities or differences between the perceptions and opinions of each group. The data analysis and congruency of the two groups, one of which had almost no former tanners, suggests that current and former tanners could have similar perceptions about the benefits and harms of indoor tanning, and similar attitudes towards and opinions about indoor tanning messaging, but the limitations of the present study do not allow for conclusive findings in this area.

## Discussion

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The results of this study demonstrate that the area of indoor tanning beliefs and messaging is complex, and provides in-depth data to support previous quantitative work and pave the way for future work in this area. The findings from this study are useful in informing message designers regarding how future persuasive messages about indoor tanning could be effective in convincing young women not to tan indoors. Researchers and message designers should keep in mind the following insights, gleaned from the results of this study.

1. *Statistics may be necessary:* Though other areas of health promotion may have steered away from statistics-based messaging, it seems that, in the case of indoor tanning, statistics could be helpful in communicating the prevalence of an outcome, and helping message recipients to better understand the threat they face from indoor tanning. This aligns with a previous study that suggests statistics-based messaging in indoor tanning messages most effectively communicates information about the issue to the target audience (Greene et al., 2003). Because the evidence on health risks of indoor tanning is fairly new, young women may not really know how many women get skin cancer from tanning, and statistical messaging could help raise awareness of this risk. Without statistics, the target audience is likely to either 1) not pay attention to the message at all or 2) not believe that the threat is relevant to them as an individual, believing that the outcome happens to perhaps one in a million indoor tanners.

2. *Narrative messages should be leveraged:* Results from the present study suggest that narrative messages can be engaging and potentially more persuasive than non-narrative

messages. Using key informants with whom the target audience identifies, and incorporating situational factors that resonate with experiences of the target audience (such as when they started indoor tanning), are strategies that should be tested further and could be more effective and persuasive than simple, fact-based messages (Greene & Brinn, 2003; Greene et al., 2010; Larkey & Hecht, 2010).

3. *Real Stories*: Message designers should consider using key informants who have real experience with indoor tanning and its effects. While previous research has found that factual narratives could be more effective for some situations, but that fictional stories can also influence attitudes and behaviors, this study suggests that real stories could provide higher credibility and be more likely to persuade than messages that use models or actors (Kreuter et al., 2007).

Participants in this study believed that realistic images, that were highly believable as depicting real people in real situations, would be more effective and clearer than illustrative images. This again points to narrative as a potentially effective and persuasive channel to be explored further (Greene & Brinn, 2003; Greene et al., 2010).

4. *Target audience needs to see threat as severe and themselves as susceptible*: Throughout this study it became clear that many messages tested did not depict a threat deemed serious enough by participants to warrant possible attitude or behavior change. Without a serious threat perception, the message is very likely to be ignored. Our results suggest that leveraging more serious conditions, such as melanoma, and other conditions that are permanent, such as wrinkles, could help enhance the perceived susceptibility and severity of harmful outcomes. If members of the target audience do not see themselves as susceptible to the threat, the message is, again,

likely to be ignored. Narrative messages could be of great advantage to effectively communicate susceptibility, as narrative allows for quicker identification and more active engagement with the message, which often leads to greater persuasive effects (Larkey & Hecht, 2010; Greene & Brinn, 2003).

*5. Response efficacy should be heightened, and self-efficacy maintained:* It was clear from the study results that a possible major issue with indoor tanning messages is that, if the target audience does not believe that stopping indoor tanning will prevent harmful outcomes, the message will not be effective. One area that needs to be addressed is the difference in indoor vs. outdoor tanning, the serious negative outcomes and increased likelihood of negative outcomes due specifically to indoor tanning (Lazovich, Vogel, Berwick, Weinstock, Anderson & Warshaw, 2010; Noar et al., 2014). Another possible way to do this is by utilizing stronger narrative messages that are placed in an appropriate channel, such as video testimonials, including before and after scenarios. Though this doesn't provide a direct link to the benefits of not indoor tanning, it may increase response efficacy due to the messages specifically and deeply depicting individuals who have experienced harmful outcomes from indoor tanning (Larkey & Hecht, 2010). This would provide a much more real and relevant picture of the harms that could be avoided by not indoor tanning.

In addition, results indicate that participants would be more receptive to processing messages that enhance their self-efficacy, and affirm them as capable of taking control of the issue for themselves by presenting calls to action like "Learn the truth about indoor tanning", and "Protect Yourself". Message designers, by pairing narrative messages that allow for identification with

messages enhancing self-efficacy, could increase the chance that the message recipient will identify, put themselves in the place of the key informant, believe themselves capable of changing, and be most likely to change their behavior (Larkey & Hecht, 2010).

This study found that, in order to have the best chance of being heard and being persuasive, messages about indoor tanning need to differentiate themselves in the busy media environment by presenting a real and relevant threat. Strategies that emerged from the thematic findings of this study suggest doing this by presenting a threat that is perceived as both real and highly possible for individuals who tan indoors, through real stories, using key informants who have personal experiences with indoor tanning and its harmful outcomes, and with whom the target audience can identify.

### **Limitations and Suggestions for Future Research**

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There are some limitations to this research. First, data are cross sectional and capture participants' perceptions at one specific point in time. Due to this being a convenience sample in which participants are being recruited only from UNC-Chapel Hill, and only from Greek organizations at the university, the results are not generalizable to a broader population. It is also possible that those who were willing to participate in the focus groups were individuals who felt more comfortable talking about indoor tanning. Though this was a benefit in gaining in-depth qualitative data during the focus groups, it also means that participants may not be an accurate representation of our target audience, which would include indoor tanners who are not as comfortable, potentially defensive or otherwise, in talking about indoor tanning behavior.

Common to all focus group studies, there is also the possibility that the “groupthink” mentality came into play, in which the thoughts and opinions of one or more participants may have influenced others to answer in a similar way (Janis, 1972). We realize that this could be even more likely due to the age of the participants and the fact that some participants were members of the same Greek organization and were acquaintances, roommates, or friends, and the fact that the groups were made up of a mix of current and former indoor tanners. This may have prevented some participants, especially former tanners, who were in the minority, from sharing their honest ideas and opinions, and some may have felt pressure to conform to a ‘majority view’ of indoor tanning or responses to the messages. The researchers did as much as possible to reduce this possibility, especially emphasizing that there were no right or wrong answers and that we wanted to hear a diversity of ideas and opinions in the focus groups, but it is still possible that this may have occurred and limited the results.

Lastly, due to time constraints, the recruiting period was short and the recruitment channels more limited than anticipated, leading to a smaller number of total participants who were screened for the study than was anticipated. An additional limitation was the imbalance of numbers of current and former tanners, with far fewer former tanners screening and ultimately participating than current tanners. Future study should be conducted with more focus groups that separate current and former tanners and that are continued until data saturation, with a larger total study sample capable of producing data with greater reliability.

Future research should continue to explore several areas of indoor tanning. These include motivations behind why young women tan indoors, and what types of messages might be most effective in persuading young women to not tan indoors. Future research could also dig further into any differences between current and former tanners, as well as conduct similar message

testing with high school students, who are a key target audience for a campaign to prevent individuals from ever starting to tan indoors.

The findings of this study present an initial look at the potential for narrative communication in indoor tanning messages, as well as what type of conditions, imagery and text could be most effective, but further study is needed to better understand how messaging about indoor tanning and its harms can be most effective in persuading young women to not tan indoors. Ultimately, this information should be used to inform a large-scale campaign to prevent and reduce indoor tanning behavior in young women, ultimately averting scores of cases of skin cancer.



**Table 1: Focus Group Participant Characteristics (n=16)**

<b>Characteristic</b>	<b>N (%)</b>
<b>Age</b> 18-25 (young adults)	16 (100)
<b>Median age, years</b>	19
<b>Sex</b> Female Male	16 (100) 0 (0)
<b>Ethnicity</b> Non-Hispanic Hispanic	16 (100) 0 (0)
<b>Race</b> White Black Asian Other	15 (93.8) 0 (0) 1 (6.2) 0 (0)
<b>Indoor tanning status</b> Current Tanner Former Tanner	12 (81.3) 4 (18.7)
<b>Indoor tanning frequency in past year</b> Regularly year-round Regularly, only during particular seasons Occasionally, only when needed Have not tanned indoors in past year	1 (6) 5 (31) 6 (37.5) 4 (25)
<b>Indoor tanning frequency by season</b> Spring Summer Fall Winter Total frequency during the year	<i>N=12</i> (current tanners only) <i>M</i> = 11.83 ( <i>SD</i> = 15.11) <i>M</i> = 6.67 ( <i>SD</i> = 9.32) <i>M</i> = 6.25 ( <i>SD</i> = 14.12) <i>M</i> = 8.33 ( <i>SD</i> = 13.63) <i>M</i> = 33.08 ( <i>SD</i> = 44.63)
<b>Indoor tanning activity prior to events</b> Sorority Recruitment Prom Spring Break Vacation (other than Spring Break) Homecoming Cheerleading/Dance	4 (25) 8 (50) 11 (67) 5 (31) 1 (6) 1 (6)

## APPENDIX A: RECRUITMENT MATERIALS

### Study Announcement Scripting:

*Scripting to be read by PanHellenic sorority delegate at sorority chapter meeting:*

Hi Everyone -

Researchers at UNC's School of Journalism and Mass Communication are conducting a study about indoor tanning. They are looking for participants for two focus groups, which will be held over the next few weeks here in Chapel Hill.

Participants must have used a tanning bed at least once in their lifetime.

Each participant will receive a \$15 gift card to Starbucks for their participation in the study.

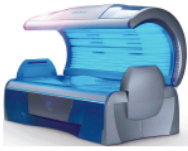
If you are interested in possibly participating in this study, please visit this website (**INSERT HYPERLINK**).

If you are selected to participate, a member of the research team will contact you.

If you have any questions, please contact **Stephanie Lane** at **ssschmit@live.unc.edu**

Thanks so much!

Sample Recruitment Flyer:



## Have you ever gone indoor tanning?

Researchers at the UNC School of Journalism and Mass Communication are conducting a study looking at why young women indoor tan and the effectiveness of indoor tanning messages. **We are seeking females who have used a tanning bed at least once in their life** to participate in focus groups.

Focus groups will take place in February, and participants will receive a \$15 Starbucks gift card and food during the session.

If you are interested in possibly participating in this study, please visit this website: **(INSERT HYPERLINK)**.

**Questions?** Contact Stephanie at: [ssschmit@live.unc.edu](mailto:ssschmit@live.unc.edu)

Sample Recruiting Follow-up Email:

Dear \_\_\_\_\_,

Researchers at the UNC School of Journalism and Mass Communication is conducting a study on indoor tanning and is seeking participants for focus groups. **Participants must have used a tanning bed at least once in their lifetime.** Focus groups will take place in February, and participants will receive a \$15 gift card to Starbucks for their participation.

If you are interested in possibly participating in this study, please visit this website **(INSERT HYPERLINK)**.

Best,  
Stephanie

## APPENDIX B: PARTICIPANT SCREENER

Please answer the following questions:

1. First Name: \_\_\_\_\_
2. Are you 18 years of age or older?
  - a) Yes
  - b) No
3. Please provide a phone number where we can reach you: \_\_\_\_\_
4. Can we text you at this number?
  - a) Yes
  - b) No –

(If not, is there another number where we can text you?: \_\_\_\_\_)
5. Please provide an email address \_\_\_\_\_
6. Can we text you at the number listed above?
7. Have you ever used a tanning bed or booth with lamps?
  - a) No (Note - never tanner)
  - b) Yes
7. Have you used a tanning bed or booth with lamps in the past year?
  - a) No (Note - former tanner)
  - b) Yes
8. How many times in the past year have you used a tanning bed or booth with lamps?  
\_\_\_\_\_
9. In the past 12 months, which statement below best describes your indoor tanning:
  - a) I tan indoors regularly all year round
  - b) I tan indoors regularly, but only during particular seasons
  - c) I tan indoors occasionally - only when I need it

Please select all of the times you are available during a typical week from the following options  
(Note: only indicate times when you are available during the entire 2-hour block):

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
4:00 – 6:00 pm							
5:00 – 7:00 pm							
6:00 – 8:00 pm							
7:00 – 9:00 pm							

After you click submit your answers will be recorded. A member of the research team will contact you if you are eligible for the study. Thank you for your interest.

## **APPENDIX C: FOCUS GROUP PROTOCOL**

### **Focus Group Protocol**

- I. Participants enter, are welcomed by a member of the research team and invited to help themselves to food.
- II. A Research Assistant will distribute the Focus Group Consent (informed consent) to each participant, and ask each participant to read and sign the consent.
- III. Participants will be invited to fill out the Focus Group Participant Questionnaire to collect important demographic information about members of the group.
- IV. Approximately 5 minutes before the start of the group, a researcher will announce that the focus group will begin in 5 minutes and give participants a chance to take any last food or use the restroom.
- V. Moderator will call focus groups over to sit in the circle of chairs to begin.
- VI. Moderator will begin and guide the group through the conversation by following the Focus Group Moderator Guide.
- VII. At the end of the 90 minutes, the moderator will, in following the Focus Group Moderator Guide, thank participants for their time in participating in the study and remind them to get their incentive gift card from a member of the research team before leaving. The research team member will also hand out a fact sheet about the dangers of indoor tanning to each participant (2<sup>nd</sup> member of the research team will be ready to hand out fact sheets and incentives at the conclusion of the group).

## APPENDIX D: FOCUS GROUP CONSENT FORM

### Focus Group Consent

University of North Carolina-Chapel Hill  
Consent to Participate in a Research Study

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IRB Study # 15-0143

Consent Form Version Date: 1/20/14

**Title of Study: Young Womens' Responses to Narrative and Pictorial Messages about Indoor Tanning: A Qualitative Study**  
**Principal Investigator: Stephanie Schmitt (Lane)**  
**UNC-Chapel Hill Department: School of Journalism and Mass Communication Administration**

**Research Assistants: Jennah Sontag, Kyla Garrett**  
**Funding Source:**

**Study Contact:**

Stephanie Lane – ssschmit@live.unc.edu

#### **What are some general things you should know about research studies?**

You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study. You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

#### **What is the purpose of this study?**

The purpose of this research study is to understand better why young women go indoor tanning (use tanning beds), and what types of messages might be most effective in persuading young women to stop using indoor tanning devices.

#### **How many people will take part in this study?**

If you decide to be in this study, you will be one of approximately 24 people in this research study, which is being conducted at The University of North Carolina at Chapel Hill. All participants were recruited based on eligibility as having gone indoor tanning at some point in their life, and based on availability to participate at the chosen time.

**How long will your part in this study last?**

Your participation in this focus group will last approximately one hour and a half.

**What will happen if you take part in the study?**

The group will be asked to discuss the reasons women may go indoor tanning, the reasons women may not go indoor tanning, and will be asked to respond to the positive and negative aspects of different messages about indoor tanning, as well as being asked to provide suggestions about how these messages could be improved to be made more effective in persuading young women to stop indoor tanning. No questions will be directed to you individually, but instead will be posed to the group. You may choose to respond or not respond at any point during the discussion. The focus group discussion will be audiotaped so we can capture comments in a transcript for analysis.

**What are the possible benefits from being in this study?**

Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being in this research study.

**What are the possible risks or discomforts involved from being in this study?**

We do not anticipate any risks or discomfort to you from being in this study. Even though we will emphasize to all participants that comments made during the focus group session should be kept confidential, it is possible that participants may repeat comments outside of the group at some time in the future. Therefore, we encourage you to be as honest and open as you can, but remain aware of our limits in protecting confidentiality.

**How will information about you be protected?**

Every effort will be taken to protect your identity as a participant in this study. You will not be identified in any report or publication of this study or its results. Your name will not appear on any transcripts, nor will be retained in any way apart from your signature on your consent form after the study; instead, you will be given a code number. The list which matches names and code numbers will be kept in a locked file cabinet. After the focus group tape has been transcribed, the tape will be destroyed, and the list of names and numbers will also be destroyed.

**Will you receive anything for being in this study?**

You will receive a \$15 gift card for participating in this study, as well as food during the focus group.

**Will it cost you anything to be in this study?**

There will be no costs for being in the study

**What if you are a UNC employee?**

Taking part in this research is not a part of your University duties, and refusing to participate will not affect your job. You will not be offered or receive any special job-related consideration if you take part in this research.



**What if you have questions about this study?**

You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact the researchers listed on the first page of this form.

**What if you experience any emotional distress during or after this study?**

If you experience any emotional distress after participating in this focus group, you may contact the UNC counseling center at 919-966-3658.

**What if you have questions about your rights as a research participant?**

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB\_subjects@unc.edu.

**Participant's Agreement:**

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

\_\_\_\_\_  
Signature of Research Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Research Participant

\_\_\_\_\_  
Signature of Research Team Member Obtaining Consent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Research Team Member Obtaining Consent

## APPENDIX E: FOCUS GROUP PARTICIPANT QUESTIONNAIRE

### Focus Group Participant Questionnaire

Please fill out the following survey. The purpose of this survey is to better understand the makeup of today's group. The following information will be kept anonymous and will in no way be connected to your individual responses expressed during the focus group.

1. Age \_\_\_\_\_
2. Please select your year in school:
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Other \_\_\_\_\_
3. Please select your race:
  - a. White
  - b. Black or African American
  - c. American Indian or Alaskan Native
  - d. Asian
  - e. Native Hawaiian or other Pacific Islander
4. Please select your ethnicity:
  - a. Hispanic or Latino
  - b. Not Hispanic or Latino
5. How old were you when you first went indoor tanning? \_\_\_\_\_
6. Approximately how many times have you gone indoor tanning during each season of the past 12 months?

	Winter 2014/15	Fall 2014	Summer 2014	Spring 2014
Approximate # of times you went indoor tanning this season				

7. In the past 12 months, which statement best describes your indoor tanning?

- a. I tan indoors regularly all year round
  - b. I tan indoors regularly, but only during particular seasons
  - c. I tan indoors occasionally – only when I need it
  - d. I have not tanned indoors during the past 12 months
8. Think over the past 12 months. For what special events did you tan indoors or increase your frequency of tanning indoors? (Check all that apply)
- a. Sorority recruitment
  - b. Prom
  - c. Formal
  - d. Spring break
  - e. Vacation (other than spring break)
  - f. Homecoming
  - g. Cheerleading/dance
  - h. Other events (please specify) \_\_\_\_\_
  - i. None of the above

## APPENDIX F: FOCUS GROUP MODERATOR GUIDE

### Focus Group Moderator Guide

#### ***Note for moderator***

*A key goal of the focus groups is to gather the language people use to describe tanning bed use and messages around deterring people from using tanning beds. If it seems like indoor tanners think that we are trying to get them to stop, please clarify that this is not the purpose of the focus group and that we just want to know what they think about messages about indoor tanning.*

#### **Introduction (10 minutes)**

#### ***Greeting***

Welcome and thank you for being here today. We really appreciate you taking the time to participate in this discussion. My name is \_\_\_\_\_ and I will be the moderator for our discussion. Before we begin, is there anyone who has not yet filled out the consent form? (*Get indication that all have filled it out*). Great.

#### ***Role***

My role today will be to ask some specific questions and to keep the conversation going. We have a lot to cover, so I may need to change the subject or move ahead with the discussion. But, please stop me if you want to add anything or if you have any questions. Our discussion today will last about an hour and a half.

The note taker for today is \_\_\_\_\_. His/her job will be to take notes during the discussion. We want to be sure to get all of the important things you say.

#### ***Purpose***

I think everybody who is here knows why we are here, but let me go over it just in case. We are part of a research team at UNC. The main thing we are interested in today is hearing from you, the experts, about your ideas, opinions, and concerns as they relate to indoor tanning, and your reactions to some messages about indoor tanning. Your participation in today's focus group will help us gain valuable insights about indoor tanning, including ways to develop better messages about indoor tanning.

I would like to let you know that our conversation is being audio-taped to help us remember what is said. Everything said here today will be confidential – and once I have adequately listened to the audio tape – it will be destroyed. What you say will be used only to help us develop messages about indoor tanning. Nothing you say will be connected with your name. We would also like everyone in this group to keep things confidential, so whatever you say and whatever you hear someone say, we hope that it will not go out of this room. I hope you will feel free to speak openly but also be aware of our limits in protecting your confidentiality. Additionally, while you are welcome to share personal experiences, we are more interested in your opinions and thoughts on the issue and the messages that will be brought up – what you

think and what you think others would think. Please do not feel pressured in any way to discuss experiences that might be emotionally difficult for you to think and talk about.

### ***How to Participate***

Today you will be participating in a focus group. This will be a group discussion. It's not an interview where I ask a question and each person answers the question and we move on to the next one. Instead, we'll be putting topics on the table and the idea is for everyone to participate in the discussion with each other. It's particularly helpful if somebody says something and you're sitting here thinking, "Yeah, that's sort of the way I think about it or feel about it" and you share that. We also want to hear from you if you are thinking, "NO, that's not the way I do it. That's not how I think about it." We want to hear both similarities and differences within the group. There are no right or wrong answers to these questions. Does anyone have any questions before we get started?

### **Qualitative Questions:**

#### ***I. Icebreaker (5 minutes)***

We're going to start with a little bit of an icebreaker question. Can we go around the room and share what you think it means to be beautiful, or how would you define beauty?

#### ***II. Setting the Context (10 minutes)***

Great. Now I want to take a minute to describe what I mean when I say "indoor tanning." Indoor tanning is the use of a sunlamp, tanning bed or tanning booth to get a tan. I am NOT talking about the use of tanning lotions or sprays of any kind.

#### ***II. Discussing Initial Indoor Tanning Experiences (10 minutes)***

All of you were invited into this group because you have, at some point, gone indoor tanning. So let's start with some common ground. Can we go around the room and have you share the story of the first time you went indoor tanning.

#### ***III. Discuss why women choose to indoor tan (30 minutes)***

Now let's talk about some of the reasons why women go indoor tanning - what are the good things or benefits about indoor tanning [or why you used to go indoor tanning].

(Probes: To look more attractive? Have you heard about getting vitamin D? What about relaxation, or mood)

Great. Now let's talk about the other side of things. What do you see as some of the bad things about indoor tanning, and why women might NOT want to go indoor tanning. (5 minutes).

(Probes – What about skin cancer? What about wrinkles? Burns?)

**Message Testing – (45 minutes)**

Great. There is now very strong evidence that indoor tanning is very risky when it comes to health, and has short-term and long-term consequences for both health and appearance. Given this evidence, there is a lot of interest in what kinds of messages and health campaigns might deter young women from indoor tanning. I am going to show you several message examples about indoor tanning, and talk about what you think about each one. I am going to show you 2 messages for each of 3 different conditions, so you will see 6 total messages. I will show you a message and ask you to respond to questions about each one, before moving onto the next message. We are trying to find out what types of messages might be most effective in persuading people to stop indoor tanning. Do you have any questions before we continue?

**Condition #1:**

***Display Non-narrative message (Message #1) and ask:***

Here is the first message we created:

1. What do you think about this message? (open ended)
  - a. *Probes:*
    - i. What is the first thing you noticed?
    - ii. What do you think about the text? The images?
    - iii. How does this message make you feel?

2. What about this message is effective in getting young women to NOT tan indoors?

3. What is ineffective about this message?

4. How could this message be improved?

***Display Narrative message (Message #2) and ask:***

Here is the second message we created:

1. What do you think about this message? (open ended)
  - a. *Probes:*
    - i. What is the first thing you noticed?
    - ii. What do you think about the text? The images?
    - iii. How does this message make you feel?

2. What about this message is effective in getting young women to NOT tan indoors?
3. What is ineffective about this message?
4. How could this message be improved?

*Final question:* Which of the two messages do you think would be more effective in convincing a friend who currently indoor tans to stop going indoor tanning?

Probe: Why do you think that?

***(Repeat above for Conditions #2 and #3, Messages 3-6)***

***Closing question (5 minutes)***

Is there anything else we have not yet discussed that you would like to mention related to what we've been talking about?

Thank you all for your participation in this study and for taking the time to be here today. We appreciate your help in contributing to this research. If you have any questions or concerns before leaving today, please come see me before leaving, or feel free to contact me via email. My colleague will now be passing out a fact sheet about the risks of indoor tanning to each of you. Also, please make sure to pick up your gift card before you leave.


## APPENDIX G: TEST MESSAGES

### Test messages



Indoor tanning causes deadly skin cancer (melanoma).

**PROTECT YOURSELF: RETHINK INDOOR TANNING**



Indoor tanning seemed like the best way to get that glow for formal, so we all went. It was quick and felt great, so I kept going. Until I found out I had melanoma, a deadly skin cancer. Now there are more important things to worry about than formal.

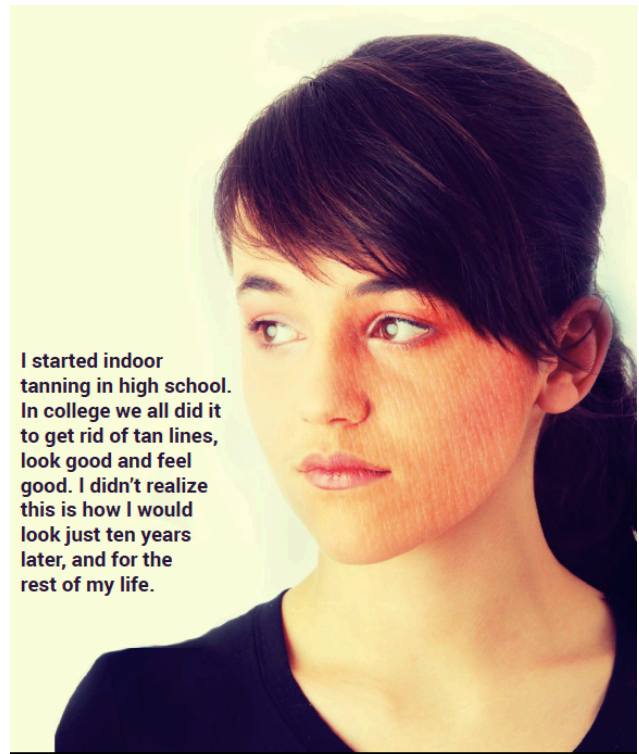
**PROTECT YOURSELF: RETHINK INDOOR TANNING**





Indoor tanning causes premature aging and wrinkled skin.

**IT ISN'T PRETTY: LEARN THE TRUTH ABOUT INDOOR TANNING**



I started indoor tanning in high school. In college we all did it to get rid of tan lines, look good and feel good. I didn't realize this is how I would look just ten years later, and for the rest of my life.

**IT ISN'T PRETTY: LEARN THE TRUTH ABOUT INDOOR TANNING**



Indoor tanning causes painful burns.

**DON'T GET BURNED BY INDOOR TANNING**



I didn't tan indoors until I started college. My friends and I go on occasion - it's fun and relaxing, and gives me a nice glow before an event. Last spring I went indoor tanning and got a really bad burn and had to go to the emergency room to get treated. It wasn't exactly the relaxing experience I had in mind.

**DON'T GET BURNED BY INDOOR TANNING**

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