



8-2006

Magazine Messages and Teenage Perception of Skin Cancer, Tanning, and Sun Safety

Anna Marlene Greene
University of Tennessee - Knoxville

Follow this and additional works at: https://trace.tennessee.edu/utk_gradthes



Part of the [Communication Commons](#)

Recommended Citation

Greene, Anna Marlene, "Magazine Messages and Teenage Perception of Skin Cancer, Tanning, and Sun Safety." Master's Thesis, University of Tennessee, 2006.
https://trace.tennessee.edu/utk_gradthes/1562

This Thesis is brought to you for free and open access by the Graduate School at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Masters Theses by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a thesis written by Anna Marlene Greene entitled "Magazine Messages and Teenage Perception of Skin Cancer, Tanning, and Sun Safety." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communication and Information.

Carolyn R. Lepre, Major Professor

We have read this thesis and recommend its acceptance:

Naeemah Clark, Mark Littmann

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a thesis written by Anna Marlene Greene entitled "Magazine messages and teenage perception of skin cancer, tanning, and sun safety." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communication and Information.

Carolyn R. Lepre
Major Professor

We have read this thesis
and recommend its acceptance:

Naeemah Clark

Mark Littmann

Accepted for the Council:

Anne Mayhew
Vice Chancellor and
Dean of Graduate Studies

(Original signatures are on file with official student records.)

MAGAZINE MESSAGES AND TEENAGE PERCEPTION OF SKIN CANCER,
TANNING, AND SUN SAFETY

A Thesis

Presented for the

Master of Science Degree

The University of Tennessee, Knoxville

Anna Marlene Greene

August 2006

Acknowledgement

First, I would like to thank my advisor, Dr. Lepre for her support, kind ear, and comfortable couch. I would like to thank Dr. Littmann for his constant guidance and patience. Also, I would like to thank Dr. Clark for always watching the coolest shows on television.

I would also like to thank a number of people who have taught me everything I need to know in life: my mom for teaching me how to hem my own pants, my dad for teaching me how to execute an upper cut, Audrie for teaching me where the Leaning Tower of Pisa is located, Alexandra for teaching me the periodical table and how to spell tomorrow, and Brandon for teaching me how to laugh through troubled times and that “it’ll be alright.”

Lastly, I would like to thank Willis, the only being who was literally by my side for every written word.

Abstract

Increasing skin cancer rates and a developing trend of tanning has emphasized the importance of sun safety, especially among youth. The purpose of this study is fourfold: (1) to explore the sun safety content of magazines with high teen readership, (2) to discover teenagers' tanning behaviors, (3) to find their thoughts and feelings on magazine coverage of this issue, and (4) to learn their knowledge of the risks associated with sun exposure. Focus groups were held with 23 high-school-age students in eastern Tennessee. Understanding the barriers to changing this group's behavior could be beneficial in developing effective persuasive messages.

Table of Contents

<i>Chapter</i>	<i>Page</i>
Chapter 1: Introduction.....	1
Chapter 2: Literature Review.....	6
Chapter 3: Research Questions.....	18
Chapter 4: Methodology.....	20
Chapter 5: Results.....	28
Chapter 6: Discussion and Conclusions.....	47
References.....	60
Appendix.....	69
Vita.....	71

Chapter 1: Introduction

According to the American Cancer Society (2005), skin cancer is the most common of all cancers. Three times as many people suffer from skin cancer in comparison to lung cancer, the second most common of cancers (Peattie, Peattie, & Clarke, 2001). One distinctive aspects of skin cancer is the relative ease by which it is preventable. The American Cancer Society (2005) advocates lowering the risk of skin cancer by avoiding long exposure to sunlight, seeking shade, wearing protective clothing, utilizing sunscreen with an SPF rating of 15 or higher, and wearing sunglasses. It is thought that by following these simple behavioral changes, skin cancer could be prevented in up to 90 percent of cases (American Cancer Society, 2005). However, skin cancer is the only type of preventable cancer that is not declining (Schofield, Tripodi, Girgis, & Sanson-Fisher, 1991; Saraiya, et al., 2004). According to Dr. Carol Reed Ash, an American Cancer Society professor of oncology nursing, skin cancer rates are rising due, in part, to increased sunbathing (Franz, 2001). Sunbathing is referred to as exposure to UV radiation from sunlight, sunlamps, or tanning beds (Franz, 2001).

It seems as though the majority of Americans are not only ignoring the methods by which they could lessen their likelihood of getting skin cancer, but they are consistently engaging in behavior that will increase their chances. The American Cancer Society recommends all individuals over the age of 40 receive an annual skin cancer exam, however it has been found that less than 15 percent of all Americans are utilizing skin cancer examinations (Canto, Drury, & Horowitz, 1998). “To increase detection of these cancers at early stages, extensive education and media campaigns for the public and

providers identifying risk factors and the availability of and the need for these examinations are required” (Canto, Drury, & Horowitz, 1998, p. 278).

Teenagers are a particularly large demographic group that seems to ignore many of the risks involved in tanning. The American Academy of Dermatology has found that young people are most likely to disregard the health risks and continue to expose themselves most often to the sun (Ad Council: AAD, 2006). Teenagers are also especially vulnerable to increasing their risk of skin cancer because damaging the skin with over exposure to the sun at an early age can increase future skin cancer risks. It has been found that sun exposure during childhood and adolescence accounts for at least 25 percent of a person’s lifetime UV exposure (Saraiya et al., 2004). For these reasons, recent efforts at educating the public about sun safety have been aimed at children, teenagers, and parents.

One tactic used to combat children and teenagers harmfully exposing themselves to the sun, is educational campaigns. These campaigns are generally designed to educate the youth (and often their parents) about the dangers of sun exposure and what can be done to protect themselves. So far, the majority of these educational initiatives have been applied through the school system to relatively small populations. These campaigns have been studied and analyzed for their effectiveness to disseminate information. Thus far the effect they are having on changing behavior appears to be relatively inconclusive (Hall, McDavid, Jorgensen, & Kraft 2001; Saraiya et al., 2004).

One study has found these educational campaigns to be positive influences on educating children and parents but not necessarily effective in changing behavior. This study found effective skin cancer prevention behavior increased when educational

programs were implemented in elementary schools (Saraiya et al., 2004). However, persuading adolescence to maintain this changed behavior seems to be troublesome. This study reported that these children remained knowledgeable about the effects of sun exposure from their transition from childhood to adolescence, but their sun safety behavior did not remain consistent (Saraiya et al., 2004). The primary school children were more likely to follow the advice, but only until they transitioned to secondary schools (Saraiya et al., 2004). A second study found similar results in relation to children and how likely they are to experience sunburns. Hall, McDavid, Jorgensen, and Kraft (2001) discovered that older children tend to protect themselves from the sun less than younger children, therefore experiencing more sunburns. Hall, Jorgensen, McDavid, and Kraft (2001) also state that, “interventions are needed that target older children and their parents to reduce sunburn among this group” (p. 11).

The media has also gotten involved with educating teenagers to reduce their exposure to the sun. The Ad Council has teamed up with organizations such as the Skin Cancer Foundation, the American Cancer Society, and the American Academy of Dermatology to produce public service announcements in hopes of educating and changing behavior (Ad Council: AAD, 2006; Ad Council: SCF, 2006). In 2004, the Ad Council worked with the American Academy of Dermatology to create a campaign that targeted teens. These messages were sent through television, radio, and print (magazine) media. This campaign had the objective of persuading teens to stop tanning and to become aware of the risks and consequences associated with this behavior. They encouraged teenagers to take proactive steps to live a life free of skin cancer (Ad Council: AAD, 2006).

The magazine industry has also begun to address the issue of skin cancer. Magazines appear to be an ideal medium for sun safety information since it has been found that teenagers consider magazines a highly valued source of advice about their personal lives and health care (Le Ferle, Edwards, & Lee, 2000; Labre & Walsh-Childers, 2003; Taylor Research and Consulting Group, 2003). Hearst Magazines' *Cosmopolitan* began a "Practice Safe Sun" campaign in May of 2006 in hopes of educating their readers of the dangers associated with tanning and sun exposure (Smith, 2006). *Cosmopolitan* has also taken the issue of sun safety to Congress by lobbying for the passing of a "safe sun" bill. They have also worked with congressional representatives to create the "Tan Act."

The aforementioned factors are further explored in this study. The medium this study focused on was magazines. Media messages within magazines with high teen readership were the source of discussions. Data was collected through five focus groups with high-school-age teenagers (ages 14-18) to determine their preventative health care behavior specific to skin cancer prevention. Open-ended focus groups were used to fully gather the unscripted opinions and feelings of those being studied.

Understanding these teens' prior exposure to such information and current understanding of the risks involved with sun exposure is imperative to creating effective preventative health care campaigns. This study aimed to determine this age group's:

- current thoughts and feelings towards preventative health care (specific to skin cancer)
- whether basic information via magazines about skin cancer prevention is reaching this age group

- whether such information in these magazines articles is affecting opinions, thought, or behavior among the teenagers
- what focus group participants felt would motivate them to change their sun safety behavior.

The findings of the present research could help future skin cancer prevention campaigns be more effective in targeting this youth generation.

Chapter 2: Literature Review

The study of skin cancer has become an issue in a multitude of research areas. It is not only studied by dermatologists and geneticists, but by mass communication and public policy scholars as well. Health education campaigns have been formed, particularly ones aimed at children and adolescents. However, the majority of studies that have examined such health campaigns have found disappointing results (Peattie, Peattie, & Clarke, 2001; Kamin, O'Neill, & Ahearn, 1993; Jernigan & Katz, 1991; Mermelstein & Riesenber, 1992). The majority of studies examining children's health education campaigns about skin cancer have found that they raise public awareness, but are largely ineffective in actually changing behavior (Peattie, Peattie, & Clarke, 2001). Peattie, Peattie, and Clarke, (2001) reported that this lack of behavioral change indicates that there are significant barriers that these campaigns have yet to overcome. These barriers include a need for a more holistic approach, a "two-pronged" approach, to perceive child sun safety as a safety issue rather than a disease prevention issue, and to adopt a social marketing approach.

The inadequacies in educational programs directly correspond to sun safety behavior and sun bathing habits of Americans. A national survey of white adults found that the majority of respondents (59%) reported that they have sunbathed at least once in the past year. Of all respondents, a quarter reported that they sunbathe frequently (11 or more days spent sunbathing in the past year). Less than half of these frequent sunbathers used sunscreen routinely. Of those surveyed who did report using sunscreen frequently, only half used sunscreen that had a SPF (solar protection factor) of 15 or higher. "Hence,

only about a quarter of respondents overall used sunscreen with recommended levels of protection during maximal recreational sun exposure.” (Koh et al.,1997, p.1216)

Sun Safety Awareness Campaigns and Educational Programs

Governmental and educational agencies have recognized the need for sun safety education and awareness across the globe. Numerous studies have analyzed past and present programs and campaigns in an effort to determine if these campaigns are informative and effective in conveying sun safety information or changing behavior (Buller et al., 2000; Buller & Borland, 1999; Kamin, O’Neill, & Ahearn, 1994; Parrott & Duggan, 1999; Peattie, Peattie, & Clarke, 2001).

One study used focus groups in Australia and the United Kingdom to try to determine what these barriers to behavior changes are. This study focused on sun safety campaigns aimed at children. The focus group participants were grouped into five categories: children (ages 6-16), parents of children, school stakeholders (teachers, Parent-Teacher Association, or Parents and Friends representatives, and governors), doctors and other health professionals, and coaches and supervisors of children’s outdoor activities. The focus groups were held to understand the participants’ beliefs and knowledge levels of sun safety and skin cancer prevention (Peattie, Peattie, & Clarke, 2001).

This study found that the participants in the children’s focus groups were aware of the risks of overexposure to the sun. These young participants understood that sunburns were linked to an increase in the risk of skin cancer. They were also aware of preventative methods that could be taken in order to avoid sunburns (wearing sunscreen,

a hat, finding shade, etc.) The children demonstrated that the health education campaigns were effective in raising awareness, but ineffective in changing behavior. This same concept was echoed in the adult focus group sessions. The majority of the adult participants found sun safety education to be important, but thought that current techniques were ineffective, particularly with teenagers (Peattie, Peattie, & Clarke, 2001).

The focus groups in this study also provided insight to the effectiveness of sun safety campaigns in Australia and the United Kingdom. Participants could recall specific sun safety campaigns. However, these same participants questioned if the campaigns had overemphasized awareness of sun safety, which then caused a gap in the campaign aimed at actually creating change. “This was demonstrated explicitly by participants who expressed a wish for more factual information about risks and protection strategies and implicitly by the widespread gaps in knowledge and by persistent myths (such as the ‘safe tan’)” (Peattie, Peattie, & Clarke, 2001, p.272).

This study found that from the focus group discussions there are four key themes public policymakers should be aware of in order to increase sun safety behavior and lower skin cancer rates. The first theme is the need for a more holistic approach to child sun safety. The study argues that the variety of different public policy campaigns, issues, and educational goals need to better coordinate.

The second theme is the need for a “two-pronged” approach. The first “prong” is family-focused sun safety education and promotion. The second “prong” is the need for public policy to create an environment that makes it easier for families and individuals to practice safe sun behavior.

The third theme is the need to perceive child sun safety as a safety issue rather than a disease prevention issue. (Peattie, Peattie, & Clarke, 2001).

The fourth theme is the need to adopt a social marketing approach to child sun safety (Peattie, Peattie, & Clarke, 2001). Social marketing generally deals with health issues such as smoking, drinking, drugs, diet, and exercise. Sun safety is a natural fit into this type of marketing. Social marketing typically focuses on changing behavior rather than just providing information. The need for a social marketing approach is supported by findings that suggest many of the current approaches ineffectively rely solely on the belief that by giving people knowledge about risk and prevention, it will lead to change.

Rochester (1999) has also noted that social marketing techniques are ideal for sun safety campaigns because they recognize subpopulations and behavioral influences of individuals. By recognizing these subpopulations and influences, sun safety campaigns can be formed with the knowledge of each individual's barriers and abilities in reference to their acceptance of sun safe behaviors (Rochester, 1999). Peattie, Peattie, and Clarke (2001) suggest that certain elements of social marketing, such as the Health Belief Model, could also help to achieve further sun safety behavior.

The Health Belief Model suggests that peoples' willingness to change behavior is a function of the strength of their belief in the personal relevance of the risk; the seriousness of the consequences; and the efficacy, costs, and benefits of the preventive measures. These were all issues on which respondents typically expressed concerns and uncertainties rather than clear beliefs. There was even resentment among some parents that sun safety campaigns had made them aware of the risks and their responsibilities for child sun safety without resolving their doubts and uncertainties (p.271).

A similar educational program was started in the United States and was analyzed by Kamin, O'Neil, and Ahearn (1994). This study found somewhat more encouraging

results than the Peattie, Peattie, and Clarke study (2001). This educational program was conducted in high school biology classes in Texas and consisted of three teaching programs that revolved around common themes, visuals, and treatment styles (Kamin, O'Neil, & Ahearn, 1994).

After students completed these three teaching programs, the majority of them, 64 percent contemplated a change in their sun safety behavior. Only 2.5 percent of the students studied found no need in changing their behavior. Eighteen percent of the students were actively engaged and ready to change their behavior. Sixteen percent reported that they intended to not only change their behavior, but they were going to maintain healthier sun safety practices. Kamin, O'Neil, and Ahearn (1994) also recognized the importance of consistency and the need for behavior to not only be changed, but also maintained in order to effectively reduce the risk of skin cancer.

While Peattie, Peattie, and Clarke (2001) and Kamin, O'Neil, and Ahearn (1994) concentrated their studies on educational programs in a classroom setting, others have focused their attention on campaigns and programs that seek to educate youth through their daily activities. The state of Georgia implemented an educational program, "Got Youth Covered," where coaches educated youth on their soccer teams. The project's objective was to properly inform soccer coaches of various methods to protect their players from exposure to the damaging UV rays at practices and games (Parrott & Duggan, 1999).

The findings in the analysis of this program differed from the Peattie, Peattie, and Clarke study (2001). This program was found to be effective in both educating the coaches and youth as well as changing their behavior. Parrott and Duggan (1999) found

that coaches who attended the sun safety training session were more likely to promote sun safety practices while on the soccer field. This promotion led the young players to change their behavior to “healthier” sun exposure decisions. It was also found that, “the more coaches promoted sun protection to youth, the more coaches practiced sun protection themselves” (Parrott & Duggan, 1999, p. 114). They concluded that the children considered their coaches to be role models. By having a role model suggest a change in behavior, the youth were more likely to actually change their behavior to copy their role model’s behavior.

Why Teenagers Are at Risk

The teen years are often critical in the formation of personal identity and behavior. Teenagers are creating behaviors for themselves that will sustain them through life (James, Rienzo, & Frazee, 1997). Their eating and exercise behaviors are often the same behaviors that are carried on into adulthood (James, Rienzo, & Frazee, 1997). The teen years are especially critical to health awareness and behavioral change issues surrounding skin cancer for a variety of reasons. One such reason is tanning behaviors by many American teenagers. According to 2002 survey, 72 percent of the surveyed teenagers (ages 11 to 18) reported having at least one sunburn in the last summer (Cokkinides et al., 2002). The same study also found that 30 percent of those children reported having at least three sunburns in the past summer (Cokkinides et al., 2002). One year later, The American Academy of Dermatology (April 29, 2003) found that 83 percent of the teenagers they surveyed (ages 12 to 18) reported having at least one sunburn in the previous year. Of that 83 percent, 36 percent said they had experienced

three or more sunburns in that year. While this is a comparison of two studies with two sample populations, there was still an increase that is worth noting in the number of teenagers that experienced sunburns. The American Academy of Dermatology (April 29, 2003) have also found that the majority of these teenagers are not utilizing preventative sun safety behavior. It was found that only 34.4 percent of these teenagers used sunscreen.

In the past 10 years, skin cancer rates have risen 20 percent among women ages 15 to 34 (Jeffrey et al., 2005). One factor contributing to this rise is thought to be an increase in tanning, especially tanning beds. The American Academy of Dermatology (April 29, 2003) 26 percent of Americans under the age of 25 have used a tanning bed, and over half of these tanning bed users were females. The American Academy of Dermatology (April 29, 2003) also looked specifically at tanning bed usage by teenage females. They found that the use of tanning beds appears to increase with age during adolescence. It was found that 7 percent of 14-year-old females had used a tanning bed in the past year, in comparison to 35 percent of 17-year-olds. In order to combat the trend, many state lawmakers have taken this health issue into their own hands. Laws that limit teen access to tanning salons have been implemented in 22 states (Jeffrey et al., 2005).

The use of indoor tanning beds is just as dangerous as exposure to natural sunlight. Natural sunlight consists of UVA and UVB rays, both of which play a role in harming the skin. The UVB rays cause the outer skin to burn, and the UVA rays cause skin damage by penetrating deeper into the skin. It has been found that the UVB levels are similar, and equally dangerous, in both tanning beds and natural sunlight. However,

the UVA levels were found to be 10 to 15 times higher in tanning beds. This increase in UVA levels give tanning beds a UV index (a combination of both UVA and UVB rays) of 13. During an average summer day, the natural sunlight UV index is 8.5. (American Academy of Dermatology, April 29, 2003).

Along with visiting tanning salons, experiencing sunburns and tans from natural sunlight is still a trendy activity for youth. Teens appear to be spending more time outside than adults, exposing their skin to dangerous UV rays without using proper protection. One of the possible reasons for the large percentage of children experiencing sunburns is youth have more opportunities and time to be exposed to the sun than adults. Buller and Borland (1999) found that North American children spend approximately 2.5 to three hours outside daily.

These incidences of sunburns only increase the risk of children and teenagers developing skin cancer (Saraiya et al., 2004). A history of one or more sunburns in childhood are strongly related to an increase in the risk of developing melanoma and an increase in the risk of basal cell carcinoma (Ingvar, Olsson, & Westerdahl, 1994). Melanoma and basal cell carcinoma are two of the three types of skin cancer, with basal squamous cell carcinoma being the third. Basal squamous cell carcinoma is skin cancer in the outer layer of the skin. Basal cell carcinoma is cancer located in the middle layer of the skin. Melanoma is cancer that develops from melanocytes, located in the deepest layer of the skin (National Cancer Institute, 2005).

Skin cancer prevention is especially important to children because damaging the skin due to sunburns at an early age can increase future skin cancer risks (Peattie, Peattie & Clarke, 2001). Melanoma risks increase when an individual is under the age of 20 and

is over-exposed to the sun (Weinstock, Willett, Bronstein, & Speizer, 1989). One of the problems associated with communicating the risks of tanning is that individuals often do not see or experience the consequences until later in life.

Magazines as a Medium

According to the Kaiser Family Foundation (2004), “15 to 18-year-olds spend an average of 13 minutes a day reading magazines. In any given day, nearly 6 in 10 teens this age will read a magazine.” Teenagers have been shown to hold magazine content as a highly valued source of advice about their personal lives (Taylor Research & Consulting Group, 2003). A study by the Taylor Research & Consulting Group (2003) found that teenaged females (ages 12 to 15) rely on magazine content 42 percent of the time for the “coolest trends” to follow. These same teens rely on their friends only slightly more (45 percent) than these magazines when determining what the current trends are (Taylor Research & Consulting Group, 2003).

Since teenagers are utilizing this medium frequently, scholars have begun to see the importance in analyzing these magazines’ content, especially for related to health issues. A content analysis study conducted by Singorelli (1997) found that of the leading teen magazines at that time, *Seventeen*, *Sassy*, and *Teen*, only three percent of the articles related to health issues. However, teens are consistently turning to magazines for health advice. La Ferle, Edwards, and Lee (2000) found that health education was ranked second (42 percent) among teenage females when asked why they read magazines (ranked first was shopping at 47.6 percent).

Teens have been shown to turn to magazines for not only health advice, but specifically to gain information about wearing sunscreen. Andsager (2006) found that teenage males listed magazines second (television was mentioned the most frequently) when asked from which medium did they hear or read information about wearing sunscreen. However, females equally mentioned magazines and television as the most frequent medium that they heard or read about sunscreen advice. Andsager (2006) reported that, “respondents said they gathered the information from news, mostly on television, and specific magazines such as *Seventeen*, *Cosmopolitan*, and *People*” (p. 12).

Cosmopolitan has made a conscientious effort to recognize a need to educate and promote behavioral change among their readers. *Cosmopolitan* began a Practice Safe Sun campaign in their May 2006 issue and plan take initiative in educating teenage females on sun safety and skin cancer. Future plans include providing readers with a “Practice Safe Sun” box, visiting beaches promoting their educational material, and publishing stories about how to reverse sun damage. The magazine’s editor, Kate White, explained that the new health campaign seemed logical to implement since skin cancer is drastically affecting the same age group and gender as *Cosmopolitan*’s demographics. (Smith, 2006).

Cosmopolitan has taken its concern to the Capitol, working to pass two different congressional bills. With the aid from two congressional representatives, the magazine helped to create The Tan Act. This Act would help protect tanning bed users by requiring the Federal Drug Administration to reevaluate the current warning labels on tanning beds to determine if they informed the users of the health concerns associated with the product. (Smith, 2006).

Theoretical Foundation

In order to properly understand how these preventive health care messages are being interpreted and their effects, a theoretical principle used to help guide these campaign messages must be discussed. The theoretical principle that will be applied to this study is the Health Belief Model (HBM). It was first developed by social psychologists, Godfrey Hochman, Stephen Kegels, and Irwin Rosentock in the early 1950s. The HBM concentrates on persuasive health messages and behavior change. It offers an explanation as to why, or why not, individuals take health-related action after being presented with a health message. Peattie, Peattie, and Clarke (2001) further explain that the HBM, “concentrates on the actions, beliefs, intentions, and motivation of individuals” (p.269) The HBM is appropriate since communicating behavior change seems to be the one lacking step in the effectiveness of sun safety messages.

The HBM argues that in order for action to take place, multiple factors must simultaneously occur (McKenzie, Neiger, & Smeltzer, 2005; Becker, Drachman, & Kirscht, 1974) (see Appendix A). The first factor is that a sufficient health concern must exist to make the health issue relevant. This factor is often called “perceived severity.” In addition, an individual must also believe that they are at risk and susceptible to this health issue (“perceived threat” or “perceived seriousness”). The next factor is the individual must understand that they are susceptible to this relevant health issue, referred to as the “perceived threat.” Next, the individual must recognize and overcome “perceived barriers” such as financial costs, physical work, time, etc. The next factor involves the individual believing that by following the recommendations of the original message, their perceived threat would be lessened, often referred to as “perceived

benefit”. In addition, the individual must also feel competent they can overcome these perceived barriers in order to follow the recommended health action designated to them in the original message. This concept is called “self-efficacy.” Cues to action must also occur in order for behavior to be changed. These “cues to action” are informational messages suggesting a change in behavior such as, media campaigns, magazine articles, personal experience, or advice from others. (McKenzie, Neiger, & Smeltzer, 2005; Becker, Drachman, & Kirscht, 1974).

Janz, Champion, and Stretcher (2002) summarize these steps to explain behavior change and the HBM:

For behavior change to succeed, people must (as the original HBM theorizes) feel threatened by their current behavioral patterns (perceived susceptibility and severity) and believe that change of a specific kind will result in a valued outcome at acceptable cost. They must also feel themselves competent (self-efficacious) to overcome perceived barriers to taking action. (p. 51).

Chapter 3: Research Questions

It has been found that skin cancer rates are rising, due mostly to an increase in sunbathing (Franz, 2001). In the last decade, skin cancer rates have risen 20 percent among women aged 15 to 34 (Jeffrey et al, 2005). Therefore, the most generalized objective of this study is to determine why teenagers seem to ignore all warnings and advice not to tan and continue to seek a bronzed appearance. A gap between providing accurate information and persuading behavior change could be expected due to previous studies and findings (Kamin, O'Neill, & Ahearn, 1993; Peattie, Peattie, & Clarke, 2001; Jernigan & Katz, 1991; Mermelstein & Riesenber, 1992.) This study will look at teen magazines to see if this trend will be repeated. To investigate magazine coverage on the issue of sun safety and skin cancer, the following research questions were asked:

RQ1: Do the selected magazine articles tend to encourage readers to tan?

RQ2: Do magazines with high teen readership provide accurate and complete information about the risks of sun exposure and tanning?

According to the Health Belief Model, not all health messages are received, interpreted and acted upon accordingly. A message is sent out with the intention of changing behavior, and when this message is received the individual may or may not change his or her behavior (McKenzie, Neiger, & Smeltzer, 2005; Becker, Drachman, Kirscht, & 1974). To determine if required factors were present in order to increase the possibility of behavior change these questions were asked:

RQ3: Overall, what are the participants' feelings and beliefs on sun exposure, tanning, and skin cancer?

RQ4: What are the participants' perceptions of how magazines address the issue of tanning and sun safety?

RQ5: Are teenagers aware of the risks of tanning and what methods can be done to protect themselves from the sun?

Chapter 4: Methodology

Preventive skin cancer messages in magazines are especially important due to the expected lack of coverage on the issue. A content analysis study conducted by Singorelli (1997) found that of the leading teen magazines at that time (*Seventeen*, *Sassy*, and *Teen*), only three percent of the articles related to health issues. Due to the fact that this study was done prior to the boom of teenage magazines and those magazines that were studied were predominately female-focused publications, a contextual analysis was conducted prior to holding the teen focus groups. The contextual analysis will be used to analyze and better comprehend the focus group participants' feelings toward and interpretations of magazine coverage. The contextual analysis focused on a variety of both female and male targeted magazines.

With the introduction of *Teen People* in 1998, several teen spin-off magazines have emerged from popular women's magazines. These teen spin-offs, specifically *CosmoGirl!*, *Elle Girl*, *Teen People*, and *Teen Vogue*, forced *Teen* to fold (Tyre, 19 April 2004). The introduction of these new magazines also caused *YM* and *Seventeen* to target older teenagers ages 17 and up (Tyre, 19 April 2004). Since the focus group participants were under the age of 17, the female teen magazines under analysis were: *Teen People*, *Teen Vogue*, *Elle Girl*, and *CosmoGirl!*. These magazines were chosen for having high circulation among teenage females. The circulation numbers 2005 for the selected female magazines in 2005 are: *Teen People* 1,450,000, *CosmoGirl!* 1,238,325, *Teen Vogue* 1,200,000, and *Elle Girl* 500,000 (Bacon's 2005).

Adult-to-teen crossover magazines have been unsuccessful among teen males, and the majority of male teens who read magazines read men's magazines (Harvey, 2000; Magazine Publishers Association, 2001). It is for this reason that the selection of the male targeted magazines used to analyze were magazines that have high teen readership. Based on the findings of Magazine Publishers of America's "Teen Market Profile" (2004) and the circulation statistics given, the magazines that were selected were: *Sports Illustrated*, *Men's Health*, *Men's Fitness*, and *Esquire*.

The basic contextual analysis counted and examined the number of articles that discussed the subject of skin cancer prevention in the selected magazines. The purpose of the contextual analysis was to investigate the exact information and articles that the teenagers participating in the focus groups were reading. Recruited teenagers were asked if they considered themselves to be regular readers of at least one of the magazines being studied. If they said they were then they were considered eligible to participate. The contextual analysis could then be used to compare what the teenagers interpreted in the articles to what the articles generally said. The contextual analysis looked at all articles from January 2005 to December 2005. Articles were analyzed during the previous year in an attempt for participants to be able to accurately recall the information pertaining to sun safety, tanning, and skin cancer.

The articles under examination were obtained from a keyword search in the Academic Search Premier and Info Trac electronic database. The words and phrasing that were used in the search were: "skin cancer," "sun safety," "sun awareness," "sun protection," "sunscreen," "sun," "solar," "SPF," "tan," and "tanning." The same keyword searches were conducted in the database for each of the magazines chosen for

this content analysis. All duplicated articles were removed, and the selected articles were coded, and then categorized for common themes.

Participants

Focus groups were used for the second portion of the data collection. Before the focus groups were conducted appropriate permission was granted. First, Mike Winstead, coordinator of Research and Evaluation for Knox County School Systems granted permission to contact the principals of local high school. Second, Sallee H. Reynolds, principal of West High School, allowed me to contact teachers working in her high school to discuss student involvement in this study. Third, Debby Jones, Wellness teacher at West High School, gave me permission to recruit participants through her classes. The Institutional Review Board in the University of Tennessee's Office of Research reviewed and approved this study before participants were recruited.

Participants were recruited through their Wellness class at West High School. West High School is located in Knoxville, Tennessee, and has a total enrollment of 1,427 students in grades nine through 12 (West High School, 2004-2005). West High School describes itself as, "a city school with a diverse student body population consisting of students from all socioeconomic classes and races. Many international students attend West because of its proximity to the University of Tennessee" (West High School, 2004-2005). This school is composed of 76 percent Caucasians, 20 percent African-American, two percent Asian, and two percent Hispanic (West High School, 2004-2005).

The principal investigator and focus group moderator personally visited the classroom to recruit participants. Prior to beginning the focus group, the researcher

explained the objectives of the study and what would be required of them through their participation. Students were informed that they would be eligible to participate if they were under the age of 18 and considered themselves to be regular readers of at least one of the selected magazines used in the content analysis.

From the total population of recruited students, 23 students volunteered to participate in the study. All participants were in either the ninth or tenth grade, and their ages ranged from 14 to 16. Of the 23 participants, 14 were female and 9 were male. The population studied consisted of 15 Caucasian participants and eight non-Caucasian participants. Participants were split up into focus groups based on their gender. There were three separate focus groups of females; two of the groups had five and one had four. There were two separate focus groups of males; one group had four and the other had five participants. All participants were required to obtain appropriate permission by having a parent or guardian read and sign a parental informed consent form prior to their participation in the focus group. These participants were then asked to read and sign an informed consent form.

For participating in the study, individuals received a coupon for free food at Taco Bell restaurants. The free coupon for Taco Bell was good for any two items, a value ranging from \$2.18 to \$10.38. Participants also received extra credit in the class from which they were recruited.

Focus Group Data Collection

The study conducted by Peattie, Peattie, and Clarke (2001) was the basis for this portion of the study on teenagers' sun safety awareness, and the role magazines have on

their sun safety behavior. The typical issues covered and discussed in the focus groups conducted by Peattie, Peattie, and Clarke (2001) were the same topics used in the present focus groups. Those issues included:

- Factors creating awareness of skin cancer
- Perceptions of the level of risk and factors influencing risk
- Peoples' understanding of the links between sun exposure and skin cancer risks
- Peoples' awareness and understanding of strategies to reduce sun exposure
- Perceptions of barriers to practicing or promoting sun safety
- Perceptions of the effectiveness of health promotion and education campaigns aimed at promoting sun safety and methods by which they could be improved

Additional issues were covered that were not initially a major topic of discussion in the first sun safety awareness study. These factors included:

- Perception of preventative health care
- Perceptions of the individuals' own sun safety and tanning behavior
- Perceptions of other peers' sun safety and tanning behavior
- Perceptions of the effectiveness of health promotion and educational health articles in teen magazines aimed at promoting sun safety
- Participants' opinions on how the issue of sun safety should be discussed and presented to them in a more effective manner.

Open-ended focus groups were used to fully gather the unscripted opinions of those being studied. This format of information gathering allowed the opinions of the participants to be phrased in their own wording and allowed for the facilitator to probe for details relevant to the study without interfering with the participants' opinion

(Krueger, 1994). Focus groups are also beneficial in that they allow participants to share their opinions, experiences, and attitudes on or toward the issue being discussed

(Krueger, 1994; Morgan, 1988).

Coding Using Constant Comparative Method

The magazine articles and transcriptions from the focus groups were coded using a qualitative approach with the objective of finding the frames or themes of the articles as a whole. Three trained research coders were used to read all articles and focus group transcripts used in this analysis. The coders read the articles following a technique that has been previously used in constant comparative methods of research (Lepre, Walsh-Childers, and Chance, 2003; Goodman & Walsh-Childers, 2004.).

The constant comparative method is begun with a, “line-by-line analysis to identify first-level codes. Second-level codes are used to identify significant portions of text and to compile these excerpts into categories” (Morse, 1994, p. 39). The coders achieve the first step by conducting an individual examination and analysis of each transcription. The second level is completed by having research coders create categories as commonalities, differences, and themes begin to emerge (Glaser & Strauss, 1967; Morse, 1994). According to Glaser and Strauss (1967), as categories emerge, each finding is put into as many of the existing categories as possible.

Glaser and Strauss (1967) then explain, “to this procedure we add the basic, defining rule for the constant comparative method: while coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category.” Larger themes will then arise from combining the related and

relevant categories first found into fewer, more generalized categories (Lepre, Walsh-Childers, & Chance, 2003). The final product will be a relatively few, very broad categories that show the overarching themes to the majority of the transcriptions under examination.

In a quantitative approach, coders are given themes or categories in advance and are instructed to read the transcriptions, make note of, and count the number of occurrences of these predetermined themes. This qualitative approach asks the coders to read the transcriptions and let the different themes and categories emerge from the data. The benefit of not having predetermined categories is to fully determine all themes that may occur in the transcriptions that the researcher may not have been able to predict as a possible theme prior to conducting the research. Morse (1994) also states that by using a qualitative approach, research results tend to disregard cultural descriptions that are often found to limit and hinder the findings in quantitative methods.

Glaser and Strauss (1967) state that by using the constant comparative method, a coding sheet is not required. Instead, “coding need consist only of noting categories on margins, but can be done more elaborately (e.g., on cards). It should keep track of the comparison group in which the incident occurs” (Glaser & Straus, 1967). Morse (1994) also found that writing memos is a sufficient form of recording insight. Rather than the coders turning in their findings on a coding sheet, the coders will meet to discuss the themes and categories found in transcriptions. The meeting will determine the overall themes that cover the entire population of transcriptions. Lepre, Walsh-Childers, and Chance (2003) conducted the same type of research and explain in their study on newspaper coverage of managed care that, “the themes or categories were fine-tuned

until a consensus was reached regarding the primary patterns and themes found and a coherent set of frames emerged” (p. 10).

All coders individually agreed on each and every overarching theme before it was accepted. Multiple coders were used to avoid biased research and to confirm that the themes and categories found were correct and were an adequate analysis of the entire population of articles.

Chapter 5: Results

The first results that are discussed are those from the contextual analysis on magazines with high teen readership. A total of 27 articles were pulled from the magazines intended for a female audience (*Teen People*, *Teen Vogue*, *Cosmo Girl*, and *Elle Girl*). A total of 24 articles were analyzed from the magazines intended for a male audience (*Sports Illustrated*, *Men's Health*, *Men's Fitness*, and *Esquire*). (See Table 1).

Inconsistencies: Female vs. Male Magazine Coverage

After examining the 51 total articles that covered the issues of skin cancer, sun safety, or tanning there was a single main theme that repeatedly occurred and could be applied to all of the articles. This large, overarching theme was the differences in coverage between the female magazines and male magazines. The male and female magazines used vastly different approaches to inform their readers of these issues. The female magazines focused on tanning, skin cancer, or sun safety in terms of how it related to skin care, physical appearance, and product recommendations. The male magazines addressed these same issues through the coverage of what preventative products actually do, information about new health findings, and information on sunscreen.

Female Magazines

The first major topic found in the female magazines was a focus on skin care. Many of the articles discussed the subject of sun safety, tanning, or skin cancer in terms

Table 1. Articles Analyzed in Contextual Analysis

Magazine Title	Article Title	Issue	Word Count
Teen Vogue	"Model Citizens"	November	786
CosmoGirl!	"Give 'em some lip"	February	188
CosmoGirl!	"Packin' heat"	April	339
CosmoGirl!	"Rays awareness"	May	1354
CosmoGirl!	"Summer hours"	May	544
CosmoGirl!	"Look steamy in your bikini"	June/July	257
CosmoGirl!	"Bronzing beauties"	June/July	282
CosmoGirl!	"At-home spa facials"	October	464
CosmoGirl!	"Hair A to Z"	November	2656
CosmoGirl!	"In the clear skin sins"	November	1299
CosmoGirl!	"Hollywood hot stuff"	November	272
Ellegirl	"Pretty girl"	May	226
Ellegirl	"Bronzed beauty"	August	235
Ellegirl	"Burnt Blonde"	September	184
Ellegirl	"Pretty girl"	December	223
Teen People	"Get ready for summer"	May	797
Teen People	"Fresh face"	May	212
Teen People	"Beauty & the beat awards"	June	672
Teen People	"Golden girl"	June	222
Teen People	"Feminine charm"	September	490
Teen People	"How-to: Perfect glossy lips"	September	136
Teen People	"Reese's high school homecoming"	October	1622
Teen People	"Beauty blog"	November	623
Teen People	"Better skin ASAP"	December	2108
Teen People	"Celebrity beauty questions answered"	December	645
Teen People	"The 10 Most Beautiful Stars"	December	1720
Teen People	"Hardest-working beauty buys"	December	358
Men's Health	"It's da balm"	Jan./Feb.	374
Men's Health	"The ticker"	Jan./Feb.	240
Men's Health	"Chip off the old sunblock"	March	208
Men's Health	"Groom for improvement"	May	4445
Men's Health	"More news briefs"	May	139
Men's Health	"Six health threats you can't ignore"	July/Aug.	1831
Men's Health	"Health bulletin"	July/Aug.	686

Table 1. Continued

Magazine Title	Article Title	Issue	Word Count
Men's Health	"Research alert"	September	343
Men's Health	"Routine maintenance"	September	1864
Men's Health	"Expiration dates"	October	585
Men's Health	"Health bulletin"	October	1072
Men's Health	"Skin care, down there"	October	401
Men's Fitness	"Eat like a God"	April	424
Men's Fitness	"Silver screens"	June/July	261
Men's Fitness	"MF starter kit"	August	125
Men's Fitness	"Play hard, look great"	September	247
Men's Fitness	"Money shots"	November	315
Sports Illustrated	"My shot"	February	530
Sports Illustrated	"03.14.05 SI Adventure"	March	151
Sports Illustrated	"Game plan"	April	2148
Sports Illustrated	"The beat"	April	581
Esquire	"Ask Dr. Oz"	June	225
Esquire	"The paleman"	November	272
Esquire	"Your dilemma"	November	468

of how it would affect the readers' skin. If an article mentioned reasons why one should not tan, there were often comments on how the sun or tanning beds could damage the appearance of skin. These comments were almost always specific to the appearance of the skin on the face. It was found that the prospect of skin cancer was an afterthought to the reasons why one should avoid tanning or sun exposure. An example of this was found in an article in *CosmoGirl!*. The article recommended using a specific lip balm. The author mentioned the reasons for the product recommendation as, "this fat lip balm (it'll last you a good while!) not only helps protect your lips from the sun (SPF 8) and leaves them with a perfect cherry-tinted gloss, it also tastes like sugar (yummy!)"

(Packin' heat, April 2005). While the article did mention that the product contains SPF, the main appeal of the product is described as the taste.

The second topic found was that female magazines typically defined risk in terms of physical appearance and beauty. While these magazines generally took a “don't do it” approach to tanning, they seemed to only recommend this because of the possible cosmetic effects. They advised readers to avoid tanning and often informed their readers of the health risks involved, but only after they mentioned and emphasized the effect it can have on their physical appearance. Articles often mentioned wrinkles, sun spots, or a “leathery” appearance of the skin due to sun exposure. They also gave readers suggestions and information on what they should do to protect their skin from the sun. However, the benefits of using these preventative measures were often cosmetic ones as well. One example of this reoccurrence was found in an article about skin care in an issue of *CosmoGirl!*. The article says, “the sun darkens spots, so try using an SPF powder (try CoverGirl TruBlend Powder Foundation, \$9, at drugstores) every day. Just swipe your face before going outside, and reapply it every hour. Bonus: SPF powder will cover the spots and matte out shine!” (Warren, November 2005).

The focus of this article is on benefits of having an even skin tone, with SPF listed as a bonus feature in the product. It appears that the focus of this article is attempting to change behavior, but only the reader's powder purchasing behavior. It seems as though the only benefit of using a powder with SPF in it is that it covers dark spots caused by not using an SPF product in the sun. No consequences are listed if the reader chooses not to use a product containing SPF.

It should also be noted that this article categorizes the importance of using powder on the same level of importance protecting the skin from the sun.

The third topic found was that sun safety tips were generally given in the form of product recommendations. There were multiple pieces of information that advised readers to use products, such as moisturizers and lip balm, which contained an SPF already in them. These magazines also tended to advise readers to use sunless tanners if they desired a bronzed appearance. They typically would not only recommend using a sunless tanner but would also recommend a specific brand or specific product. They would often include the price of the merchandise and where the reader could find the product. An example of this is in an article in *Teen People* that recommends:

M.A.C. Tinted Lip Conditioner SPF 15 (\$14; maccosmetics.com)
Wouldn't you like to find a lip product so versatile that it's perfect for class, cheering at a football game and rocking out at a party? These wear-'em'anywhere tinted lip balms are packed with soothing shea butter and vitamin E for incredibly soft lips. Plus, the formula has SPF 15 for protection from the sun- so key no matter what time of year (How-To, September 2005).

Male Magazines

The first topic found in the male magazines was the discussion of preventative behaviors and what the product actually does. These articles recommended that men use products with SPF in them. They suggested using moisturizers, sun block, sunglasses, and sunless tanners to name a few. Unlike the female magazines, the majority of these recommendations focused on what the product actually does and less on what brand name or specific company the readers should use. For example, in an article in *Men's*

Health on grooming techniques, they tell their male readers to consider using facial products. They explain to the reader that:

Skin experts...recommend that you apply six products each morning- cleanser (regular soap can irritate your face), pre-shave oil (to bring your follicles to attention), shaving gel, aftershave, face serum (to moisturize and rejuvenate), and a lotion-sunscreen combination...when in doubt, you can't go wrong with just the bookends: cleanser and sunscreen (Bean, Boye, & Daily, May 2005).

The second topic found in the male magazines was information about new health findings specific to preventing skin cancer. There were many articles that discussed recent health discoveries in the fields of dermatology and cancer prevention. One article in *Men's Health* mentioned a recent study that found a link between the likelihood of mice developing melanoma and the mice's likelihood of developing graying hair (Hobday, September 2005). The study had claimed to have found that mice that lacked a specific gene were more likely to be protected against melanoma (Hobday, September 2005). This same missing gene also caused premature graying (Hobday, September 2005).

These articles also discussed findings that may not be new discoveries to the medical community, but is something that the average male reader may not be aware of. For example, an article in *Men's Fitness* informed readers that "the same lime juice that is on the meat and in the salad protects your biggest organ, your skin, by providing d-limonene, a potent antioxidant shown to lower skin-cancer risk" (Cora, April 2005)/

The third commonality in these magazines is that they all strongly recommend using sunscreen and give information about the product. These magazines contain several articles that advised readers to use sunscreen, mentioned why they should use it,

and even gave statistics and information explaining how sunscreen works. They explain that the skin can be permanently damaged from overexposure to the sun, what SPF levels they should wear, and that they should apply sunscreen to their entire body (including using a sun blocking product on their lips). An example of this type of coverage is an article in *Men's Fitness* that advises readers to use sunscreen with an SPF of 15 or higher, and then explains what SPF actually is:

All sunscreens contain the acronym SPF, which stands for “sun protection factor.” And it’s just that: a factor. “Say it takes 20 minutes for your skin to get red. With an SPF 15 on, it’ll take you 15 times longer,” explains Howard Sobel, M.D., a dermatologist and the founder of the skin-care-product line DDF (Keily, June/July 2005).

It is also worth noting that these male magazines not only provide information about preventative methods, but they fully explain the process of how the skin is better protected by following these methods. It is clear to the reader not only what needs to be done to protect their skin, but also what the health consequences (not just cosmetic consequences) are if they do not follow the advice. These articles also refer to health professionals and authority figures in the health and dermatology industries to support the suggestions and information given.

Focus Group Results

The chosen methodology of focus groups provided intriguing findings about their knowledge and behavior regarding sun safety, tanning, and skin cancer. Some individuals and some focus groups were more willing to openly discuss and talk about the given topics than others. Overall, the female groups were much more talkative and were more willing to elaborate and explain their answers. The male groups often gave one-word

answers and probing follow up questions had to be utilized. Even though the male groups were less talkative, they still provide the study with valuable insight to their beliefs and behaviors.

The focus group participants' tanning behavior and sun safety knowledge was also discussed. Participants were asked to address and comment on their knowledge of what, if any, the dangers and risks of tanning are. The females addressed utilizing tanning beds. The females all mentioned the possibility of skin cancer as a danger of using tanning beds. Participants then addressed the dangers and risks of tanning from natural sunlight. All of the female participants said the same dangers that were mentioned about tanning beds, namely skin cancer, also applied to exposure to the natural sun. One participant mentioned the risk of sun poisoning. They were then asked if they were aware of what could be done to protect themselves from these dangers and risks of sun exposure and tanning. All participants mentioned protective measures such as wearing a hat, protective clothing, sunscreen, sunglasses, and staying out of the sun.

The males were asked these same questions and conversed on these same specific topics. When asked what the dangers are from tanning in a tanning bed, they mentioned skin cancer, burning, pain, peeling, and UV light. When asked what the dangers are from tanning in natural sunlight, they said the same risks applied, but the majority of them felt tanning beds were more dangerous. These participants were then asked if they were aware of what they could do to protect themselves from the sun. They mentioned many of the same methods as the females, such as applying sunscreen, wearing a hat, wearing protective clothing, staying in the shade, and not spending too much time in the sun.

This understanding of the risks involved in sun exposure as well as an understanding of the preventative methods did not translate to changed behavior for all of the participants. This was discovered when participants were asked a series of questions that pertained to their own personal tanning and sun safety behavior.

Of the 14 female participants, nine reported that they had never used a tanning bed and five reported that they have used a tanning bed at least once. The frequency of their tanning bed usage ranged from “just once before prom” to “three times a week” during some months. When asked if they usually got a tan from natural sunlight, 13 responded that they usually got tan from the sun and only one responded that she did not. The girls were then asked if they received their tan from natural sunlight because they were intentionally trying to get a tan (specifically laying out for the principal purpose of getting a tan) or if they were simply outside more during warmer months and, therefore, unintentionally got tan. Seven female respondents reported that when they got tan it was typically on purpose and intentional. The remaining six females that reported getting a tan from the sun said that it was simply because they were outside doing other activities and got a tan unintentionally. The girls were then asked if they had ever used sunless tanning lotions or sprays. The results were split, with seven girls reporting that they have used sunless tanning lotions or sprays at least once and seven reporting that they had not. Next, the girls were asked if they desired to look or be tan. Of the 14 female participants, 11 said yes and three said they did not.

Of the nine male participants, eight reported that they had never used a tanning bed and only one said he had “tried it once.” When asked if they usually got a tan from natural sunlight, eight responded that they usually got tan from the sun and only one

respondent said, “No, I stay the same color.” They were then asked if they received their tan intentionally or if they were simply outside doing other activities when they got tan. All eight participants that said they did get tan from natural sunlight said that they got their tans from natural sunlight unintentionally. The boys were then asked if they had ever used sunless tanning lotions or sprays. Both male focus groups said they did not know what sunless tanning lotions were and had to have an explanation. After the explanation, all nine participants said they had never used sunless tanners.

In addition to tanning behaviors and sun safety knowledge, several commonalities and themes were found after the research coders analyzed the transcriptions of the focus groups. The three major themes that were found were: contradictions, information is targeted ineffectively, and misinformation.

Contradictions

The participants were asked questions that related to their magazine reading habits and comprehension levels. They were asked why they read magazines, if they turned to magazines for advice (specifically health advice), if they followed this advice, and what they thought magazines were telling them about tanning and sun safety. For the most part, the females responded quite differently from the males. Where the contradictions were reported was in the female participants’ opinions and actions on advice given in magazines. The female participants said that they typically follow advice even though they did not think the advice was effective. Contradictions were also found in the females’ responses to magazine coverage versus the images in magazines.

Respondents then gave statements that showed evidence of contradictions between what they are told is safe behavior versus their role models' actual behavior.

Following advice that “does not work”

The first case of contradictions was found in the female participants' opinions of the content in magazines versus their behavior. When asked specifically if they read magazines for advice, the majority of females responded that they did. They then went on to comment that they did follow the advice the majority of the time, even though they felt that most of the advice they read in magazines did not actually work.

These respondents were asked why they continued to follow advice if it repeatedly did not work. Several respondents gave statements indicating that they felt the articles were giving “quick fixes” to issues that are not capable to producing fast results. When asked what type of advice they were referring to, many of them mentioned fitness, skin care, dieting, and relationship advice. They said many articles would promise impractical results such as a flatter stomach by simply following an at-home exercise program. They said they continued to try the suggestions in hopes that one of these suggestions given in the magazines would produce these “magical” fast results. Respondents also admitted that they often did not try the suggestions for a long enough time or would “cheat” on some of the more strenuous or strict suggestions (such as a diet program).

Words versus images

The participants were then asked what type of advice or recommendations they felt magazines gave on skin cancer, tanning, and sun safety. All three focus groups of females mentioned that magazines were contradictory when it came to the written advice they read and the images they saw. One participant said that the magazines she reads advised her that “it’s [tanning] bad because of skin cancer, but then you turn the other page and you see a really tan, pretty girl.” The remaining three females in her focus group all agreed on her comment. Another female in a separate focus group gave a similar comment when she said, “there’s articles that give warnings on skin cancer and things like that, but then you flip the page and the model looks like she’s black and she’s really white.” The other participants in her focus group also agreed on her comment.

The models and celebrities that appear in these magazines seem to be sending messages to these teenagers implying that since they are tan, it is acceptable and desirable for others to be tan. Since the articles do not cover how the model or celebrity received his or her tan and the models and celebrities are not verbalizing the possibility that they use sunless tanners to get their bronzed appearance, the participants commented that they assumed their tans were either from natural sunlight or tanning beds.

Mothers as role models

Another group of people who has the potential to be a role model and influence the behavior of these female teenagers are their mothers. Many of the females that said that they had either used a tanning bed or tanned intentionally also said that their mothers did not approve of their tanning behavior. These females said that their mothers had

either told them that they did not want them to tan anymore or they warned them of the risks associated with this behavior. These participants only mentioned their mother's disapproval, and none of them mentioned their father. The majority of these participants said that even though their mothers had expressed disapproval, they still often went to the tanning beds with their mothers. They commented that they would go to the tanning beds with their mothers, both the daughter and mother would tan, and they would often buy tanning packages together. One participant recalled a conversation she recently had with her mother on the issue of tanning bed usage:

We were talking the other day and I was like, "Mom, I really need to start going to the tanning bed again." Because we have to get a new package, or whatever, and I was like, "Are you going to start going again?" And then she was like, "Yeah, I'll probably go with you." And then she was like, "You know it's not that good." And I was like, "I know." But she'll still go with me though. It's like she knows about it, but...I mean I don't want to say that she doesn't care, but it's just not...not her top priority.

Female participants also expressed contradictions in their own assessment of their opinions on tanning. When the females were asked if they felt tanning or having a tan is healthy, many responded that they did think it was healthy. The majority of the females explained their responses with beauty and appearance as supporting evidence. They said that they believe a tan person looks healthy, while a pale person looks "sickly." However, the contradictions in their statements began when majority of the females also commented that being "too tan" also looked unhealthy. One participant explained, "It depends like on the intensity of the tan, like people walking around that are really dark, and like crispy that's not good. But then there's people that are walking around that are ghostly pale and that doesn't look healthy either." They gave responses that indicate that

having little to no change in skin color is unhealthy as well as plenty of change in skin color.

There were also numerous contradictory comments linked to age, tanning, and beauty. Many of the participants said that younger women look healthy and beautiful with a tan. However, this same tanned appearance was considered to appear unhealthy and undesirable in older women. They often used words such as “leathery” and “wrinkles” to describe older women who tanned when they were younger. Their assessment of tanned skin being equated with beauty is contradicted by their acknowledgement of the effects and consequences from tanning. These females gave statements that indicate they are aware of the consequences of tanning, however they contradict this awareness by not understanding that exposure to sun during adolescence (a desired behavior and an appearance benefit) can lead to wrinkles and a leathery appearance (a undesired behavior and an appearance flaw). They commented that they want the appearance of tanned skin now as adolescents. Later in the focus group these same females commented that later in life they would desire to have skin that gives the appearance they properly protected their skin from the sun as youth.

Information targeted ineffectively

Another commonality that was found from the focus group participants’ comments was an implication that the content in magazines is targeted ineffectively. This was predominantly evident from the fact that knowledge did not equate to behavior. Since all of the participants previously stated that they read these magazines and cited information specifically given in these articles, this information seems to have been

targeted ineffectively because rather than creating behavior change, these articles only translated to further knowledge and awareness of the problem.

While the majority of the male participants stated that they did not visit tanning beds or tan intentionally, the majority of them also mentioned that they did not regularly engage in preventative sun safety methods when spending time outdoors. Many of them only referred to sunscreen use when visiting the pool or beach. They did not indicate that they practiced any of the preventative methods when they were spending time outdoors doing daily activities, even when these daily activities required prolonged sun exposure such as playing outdoor sports. It is intriguing that male participants stated that they did not consistently use sunscreen when one of the topics most commonly addressed in the male based magazines was sunscreen use. These articles discussed how sunscreen actually works and recommended that sunscreen be used at all times, not just when at the beach. The male participants said that they read these magazines. They also discussed certain articles in some of the magazines. However, these teenagers did not seem to follow the advice and recommendations given in these articles.

The majority of the female participants could list the same preventative methods given by the American Cancer Society on how to protect their skin from damaging UV rays. They were also aware of the risks involved with sun exposure. These same teenagers stated that they were regular readers of the teen magazines analyzed. They further supported this statement when they began to discuss or cite specific information found in articles in these magazines. These magazine articles advised readers to avoid prolonged sun exposure and to not visit a tanning bed. However, many of these teens continued to use tanning beds or tan in the natural sunlight.

A second example was found to support the theme that information in magazines is targeted ineffectively. This theme's relevance reappeared when participants were asked for their opinions on what magazines could do or say to better inform readers and to persuade them to change their behavior. The female participants gave suggestions such as "show gross pictures of skin cancer" and "have models that look like their natural skin color." These female participants all gave suggestions that expressed a need for visual images communicating the risks of sun exposure or consequences to their actions. They also desired to see images and pictures that indicated social acceptance of individuals who are not tan.

Participants also indicated that they thought giving statistics and in depth explanations of what actually happens to a person with skin cancer would help to persuade them not to tan. This suggestion of approaching the issue with a scientific appeal is the opposite of what was found in current female magazine coverage. The current approach tends to use an emotional appeal. Rather than giving statistics and in depth scientific explanations, the female magazines explained risk in terms of emotional concepts such as social acceptance and maintaining a desirable appearance.

Misinformation

The last commonality among both the female and male groups was misinformation. The respondents gave answers that indicated they had either been misinformed on an issue or misunderstood facts about tanning, sun safety or skin cancer. The female groups were asked what they thought the dangers of tanning beds are. The first comments that suggested participants may have been misinformed or have the wrong

information were statements that indicated that tanning is only bad for you if you do it every day or for “too long.” They also mentioned that sunscreen was only necessary when you were going to be at the beach or lake and would be out in the sun all day long. These statements indicate that these teenaged girls are not fully aware of the dangers of sun exposure.

A second area where misinformation appeared to guide both the male and female participants was tanning bed myths. One of the male participants said he felt tanning from natural sunlight was worse for you because “it has more unknown factors. They probably have all of the factors figured out in the tanning bed, like what the exact risks are.”

The majority of the females also turned to myths and fabricated wives tales on the dangers of tanning beds. While the risks and dangers of tanning beds are real, some of the reasons they gave are thought to be myths. One participant responded that she thought tanning beds “cooked your insides.” Other participants mentioned that users’ could get locked or trapped inside a tanning bed while the tanning bed is turned on, causing sever burns or even death.

Several participants overestimated one of their perceived benefits from sun exposure. One participant said that getting a tan from natural sunlight could be healthy because, “when you’re outside in the actual sun you’re getting like vitamin D and you’re staying active.” Other participants in that focus group agreed that tanning in natural sunlight was beneficial because of vitamin D absorption. She was correct that the body can form vitamin D through the skin absorbing sunlight.

There was also some confusion as to who is at risk for developing skin cancer. These confusions were in the form of certain participants implying tanning, sun safety, or skin cancer did not apply to them because of their natural skin color. Participants who reported not tanning at all gave nonverbal indications that the reason they did not tan or seek a tan was because their skin was naturally darker. When the non-Caucasian participants were asked questions that related to their tanning behavior they often rolled their eyes, pointed to the skin on their arm, or sighed in indication that there was no need for them to tan or that because they had dark skin they could not tan. These participants would only verbally answer the questions “no,” but their nonverbal behavior definitely indicated that tanning did not apply to them. Other Caucasian participants would often comment on the non-Caucasian participants’ lack of desire to tan or comment that they do not “need” to tan. One Caucasian participant said, “Well there’s no need for you to use the tanning bed, you have beautiful color.”

These small verbal remarks and large nonverbal behavior also appeared during specific points in the conversation, indicating that they felt skin cancer and sun safety was a subject that did not necessarily affect them because of their darker skin. One male participant was asked if he used sunscreen on a regular basis. The participant gave a blank stare and then pointed to the skin on his arm and said, “No.” It was concluded that by pointing to his skin and answering no, he felt as though he did not need to wear sunscreen. This is particularly interesting because although people with certain physical characteristics are more at risk, anyone can get skin cancer. In fact, Devesa, Gail, and Pennello (2000) found, “Although darkly pigmented people develop skin cancer on sun-

exposed sites at lower rates than lightly pigmented people, incremental UV exposure does increase their risk of developing skin cancer.”

Chapter 6: Discussion and Conclusions

The previously mentioned results and themes seem to indicate that there is a need for a better way to persuade teenagers not to tan or to protect themselves from the sun. As indicated in previous research studies, knowledge and awareness of the dangers of sun exposure did not, and does not, necessarily mean individuals will modify their behavior. While the overall themes have been mentioned in the previous chapter, each category gave results that need to be further developed and discussed.

Contradictions

Multiple instances of contradictions were found between knowledge and behavior. The participants' saying that advice in magazines does not work versus their actual behavior strongly correlates to contradictions in their tanning knowledge versus behavior. Their reasons for continuing to follow advice that did not previously work are the same reasons they gave for continuing to tan despite knowledge of risks. The basis for these two contradictions is that these teens expect, or desire to see, immediate results. When participants were asked why they continued to tan if they knew the dangers of tanning and were aware of what they can do to protect themselves, many comments that the reason was because they do not see immediate consequences. One female participant related tanning behavior to nutritional behavior and the need for immediate consequences to be present in order for her to be willing to change her behavior:

Like people tell me all the time that I eat junk all the time and that I don't really eat real food and that it's going to catch up when I get older. And I don't believe that. I don't change because it doesn't affect me now. I don't gain any weight from what I eat, so why change it?

One possible explanation for these contradictions is that these teenagers could be mirroring the contradictory messages they have found in both magazines and in their role models' behavior. If these girls are not receiving consistent messages from the media and their role models on the dangers of tanning and the benefits of natural skin color, it is possible that their actions could be a result of these contradictions and confusions. This suggestion is supported by findings that suggest a more "two-pronged" approach is needed for youth's sun safety behavior (Peattie, Peattie, & Clarke 2001). Peattie, Peattie, and Clarke (2001) argue that children need a holistic approach that can be achieved by having family-focused sun safety education as well as public policy-focused sun safety education. These teenagers need for all messages (whether through the media or role models) to work together to create one common and consistent message.

Information Targeted Ineffectively

The results of the participants' suggestions for what magazines could do or say to better persuade them not to tan was interesting in that it contradicted current methods of persuasion. Females said that the content they found in magazines on the dangers and risks of tanning and preventative methods was only in the form of words and not pictures. In fact the pictures suggested behavior that articles warned against. Many of the female participants gave suggestions for magazines to use visual indicators to persuade readers. They have been told why sun safety is important; now they need to be *shown* that sun safety is acceptable.

The contextual analysis of female youth magazines showed that the majority of articles covering sun safety, skin cancer, or tanning emphasize beauty and cosmetics. They focused on emotional appeals to communicate sun safety behavior. These articles lacked the scientific explanations, new research findings, and statistics found in the male magazines. In addition to the females expressing a desire for more visual communication, they also indicated an interest in reading or seeing more scientific and statistical explanations as to the dangers of tanning. They mentioned the use of numbers and statistics as a possible persuasive technique that could persuade them to change their behavior.

This is particularly interesting when the male and female behavior is compared. Male-oriented magazines had more explanations to how sun safety products worked and gave scientific or health reasons (not cosmetic) on why tanning and sun exposure is bad. The majority of male participants did not visit tanning beds, tan intentionally, or even have a desire to be tan. While they still were not using preventative methods (such as sunscreen and protective clothing) at all times, their sun safety behavior could still be considered less risky than that of the females'. Female magazines gave cosmetic reasons on why tanning and sun exposure is bad. The majority of these female participants either did visit tanning beds, tanned intentionally, or desired to be tan. The contextual analysis would support the suggestion that exposing females to the same type of sun safety messages as found in male magazines could possibly lead to less risky sun exposure behavior.

Misinformation

The main area in which these teenagers seem to be misinformed is their underestimate of the severity of tanning and sun exposure. As previously mentioned, several participants made comments that indicated an underestimate in the importance of sunscreen. The majority of both the female and male participants seemed to assume that sunscreen was only needed when they were either sunbathing or could be used when they were not engaging in any other sun safety behaviors. Specifically, the male participants mentioned that the only time they typically used sunscreen was when they were not being protected by their clothing, such as when they visited the beach and pool.

Any type of prolonged sun exposure can increase an individual's likelihood of developing skin cancer (Saraiya et al., 2004). In fact, just one sunburn in childhood or adolescence can increase the risk of developing skin cancer (Ingvar, Olsson, & Westerdahl, 1994). The American Cancer Society (2005) and the American Academy of Dermatology (1987) recommend that individuals consistently use a waterproof sunscreen with a SPF of at least 15 for those areas of the skin that will be exposed to the sun. While sunscreen does prevent sunburns, it should not be used as the only means of protection. According to Bianchini and Vainio (2000) and Weinstock (1999) the power of sunscreen is over overestimated and relied on too heavily:

Recent research suggests that sunscreen, by itself, is not an adequate strategy for UV protection. Many people use sunscreens if they intend to stay out in the sun for a long period of time, and they reduce the use of other forms of sun protections (e.g., clothing or hats). They thereby receive the same or even a higher amount of UV exposure than they would have obtained during a shorter stay with no sunscreen.

Participants also overestimated the benefits of tanning in natural sunlight, particular to the absorption of vitamin D. There is no need to experience prolonged sun exposure, or even enough sun exposure to get a tan, in order to create a normal amount of vitamin D. The American Academy of Dermatology states that sufficient amounts of vitamin D can be obtained through normal, daily outdoor activities. The American Academy of Dermatology also stresses that vitamin D will still be absorbed even when wearing sunscreen. The AAD state that, “there is no such thing as a total (or even near total) UV block. Even the most effective sunscreens currently on the market let through enough UV to allow for adequate vitamin D formation” (American Academy of Dermatology, May 3, 2004, p. 2).

The participants also seemed to believe that myths and wives tales are factual information and stories. One participant believed tanning from natural sunlight was worse for you because more is known about the dangers of tanning beds. He was correct in that most of the risks of tanning in a tanning bed are known and have been studied. However, he was misinformed when he said that the sun was more dangerous than tanning beds. In fact, tanning beds emit up to five times as much UVA rays as the sun (Young, 2004).

Another wives tale that participants mentioned was that tanning beds can fry or cook users’ intestines and users’ can get locked or trapped inside. There has been no such literature found that suggests tanning beds are capable of “cooking your insides.” There was also a big-screen horror film, *I Know What You Did Last Summer*, which used tanning beds in a scene (IMDB.com). This movie depicted a character getting trapped and locked in a tanning bed by the villain. This movie could be the source for some of

the female participants to mention that the risks of using tanning beds included “getting trapped in them and getting severely burned.” There has been no literature found that would suggest these stories could or have actually occurred. In fact, tanning beds do not have a locking mechanism on them and operate on a hinge so users can open and close the tanning beds on their own. Tanning beds also operate on a timing system so the bulbs in the tanning beds automatically turn off after the set time. There has been no literature found that would suggest a tanning bed could malfunction and therefore stay on for the mentioned three-hour tanning session.

Research Questions Answered

This section will specifically address the research questions as well as the answers and offer a discussion of the answers.

RQ1: Do the selected magazine articles tend to encourage readers to tan?

These magazine articles were found to encourage readers to protect their skin from the sun. All articles either gave information as to why tanning was risky, what the possible consequences to these actions are, and what they could do to protect their skin. These magazines even go so far as to recognize the cosmetic appeal of tanning and offer readers alternative practices, such as sunless tanners, to achieve this desired tanned appearance. However, that textual information is contradicted as the students in the focus groups pointed out, by the photographs accompanying those articles.

RQ2: Do magazines with high teen readership provide accurate and complete information about the risks of sun exposure and preventative methods?

A discrepancy between female and male magazines was found. Male magazines were found to provide both accurate and complete information about the risks of sun exposure and tanning. However, the female magazines were found to provide accurate information, but were sometimes incomplete or only presented partial information.

Both the male and female magazines gave accurate information in the form advice of preventative methods. These magazine articles recommended that readers avoid exposing themselves to the sun whenever possible. The American Cancer Society (2005) also recognizes avoiding sunlight as a preventative method. These articles also often mentioned that using sunscreen on a daily basis, and using skin care products that have at least an SPF of 15, are helpful in reducing their risk of skin cancer. The American Academy of Dermatology (May 3, 2004) also recommends using sunscreen daily that has at least an SPF of 15 or higher.

However, the partial or incomplete information is in the discussion of why readers should follow these preventative methods. Female magazines were found to have mentioned cosmetic reasons, such as wrinkles, age spots, or the appearance of aged skin, as the main reason to avoid sun exposure. While the American Academy of Dermatology (2005) recognizes premature aging of the skin, wrinkles, and sunspots to be an effect of exposure to the sun, they also explain that an increase in the risk of developing skin cancer is the most threatening and prominent consequence.

RQ3: Overall, what are the participants' opinions and feelings on sun exposure, tanning, and skin cancer?

The majority of female respondents reported that they desired to be, or appear to be tan (whether this desire translated into behavior, or not). They gave cosmetic benefits

and appearance enhancement as the benefits of tanning. They specifically listed reasons tanned skin was desired, such as: having to wear less makeup, clearing up acne or pimples, feeling better about themselves, looking better, looking pretty, not looking sickly and pale. They all agreed that skin cancer is a serious issue and they seemed to understand the increased risk of developing skin cancer if they engage in behavior that exposes their skin to the sun. However, many of them said the risks were worth the benefits.

Overall, the majority of male respondents reported that they did not desire to have a tan. They also expressed confusion on why others strongly desired to be tan. One male participant attempted to explain what he thought the benefits others received from tanning by simply saying, “I guess it’s considered attractive.” The majority of the males were also found to believe that tanning was not healthy (in comparison to the majority of females who said they thought having a tan was healthy). Many of them pointed to the actual physical pain associated with burning from being in the sun for long periods of time. They commented on issues such as burning, pain, and peeling that they associated with sun exposure.

RQ4: What are the participants’ perceptions of how magazines address the issue of tanning and sun safety?

As previously discussed in the results sections, female participants perceived the content in magazines on sun safety, skin cancer, or tanning to be contradictory. They stated that they felt the articles were communicating that tanning was risky, harmful, and should not be done, while the images of models and celebrities led them to believe that tanned skin was desirable, healthy, and beautiful.

Male participants perceived the content in the male magazines they read on sun safety, skin cancer, and tanning to be informative on the risks involved. These participants perceived the articles as pertaining specifically, and only, to skin cancer as a result of sun exposure.

RQ5: Are teenagers aware of the risks of tanning and what methods can be done to protect themselves from the sun?

When participants were asked if they were aware of some of the risks associated with tanning, all respondents were able to list the risks. They named health consequences such as skin cancer, sunburns, skin damage, sun poisoning, melanoma, wrinkling of the skin, and sunspots. When they were asked if they were aware of some of the preventative methods surrounding the issue of skin cancer, all participants were able to list the same suggestions given by the American Cancer Society: avoid the sun, wear protective clothing, use sunscreen, wear a hat, and wear sunglasses (American Cancer Society, 2005).

Theoretical Application

The results from the focus groups can be better explained through the application of the Health Belief Model. The HBM offers some explanations as to why some of the participants did, or did not, model their behavior after the health-related message or advice. In order for individuals to take action, multiple factors must occur simultaneously. These factors were applied to the focus group participant's sun safety behavior.

All factors are present for the focus group participants who do not use tanning beds or desire to be tan. It is believed that only three of the factors are present for those female participants and one male participant who intentionally tan and desire to be tan. The three factors that are present for this group of participants are cues to action, perceived severity, and perceived seriousness or threat.

Cues to action were present because the individuals commented that they receive, listen to, and are aware of multiple messages about the dangers of sun exposure and why they should stop tanning. Participants said they received this information and advice from multiple sources such as magazine articles, conversations with their doctors, school, and conversations with their parents. The second factor that was present was the perceived severity. Skin cancer and sun safety is unquestionably a sufficient health concern, and these participants stated that they were aware of the health concern. Participants were able to give possible consequences to tanning and sun exposure. The third factor was perceived seriousness or perceived threat. These participants stated that they understood that by tanning or exposing themselves to the sun they were at risk for developing skin cancer or damaging their skin.

The factors that did not occur among these individuals were perceived barriers, perceived benefits, and self-efficacy. The perceived barriers affecting these participants were perceptions of attractiveness, beauty, and social acceptance. Participants indicated that they could not or desired not to overcome these issues. They would rather increase a health risk to be considered attractive, beautiful, and socially accepted. Perceived benefits were not present because these individuals do not appear to feel that by following the recommendations given in the magazines, their chances of developing skin

cancer would be lessened. They made comments that indicated risk was a part of life, and not following the health advice on sun safety was no worse than taking simple everyday risks. One participant associated the risks involved with basketball to the risks involved in skin cancer. She said, “You go play basketball and you might break your ankle you know. That’s just a risk you take.” These participants also demonstrated a lack of self-efficacy when they made statements that indicated incompetence to overcoming perceived barriers in order to follow the health advice. They made comments that support this finding such as, “I’ll continue to tan no matter what because I want to feel better about myself, and being pale makes me feel bad.”

It is also believed that one of the factors in the HBM was missing for the participants who gave non-verbal clues as to their personal risk of developing skin cancer. Skin cancer and the risk of sun exposure is still a sufficient health concern for this group of participants. However, these individuals did not indicate that they understood that they are susceptible to skin cancer or skin damage.

Limitations and Conclusions

One of the limitations of this study is that focus group participants were chosen based on convenience. These participants do not represent a true random sampling of the total population of teenage magazine readers. Therefore, these results cannot be applied to all teenagers across the globe. Also, due to the qualitative nature inherent in focus groups, these findings do not prove causality. It can not be determined that magazine coverage would “cause” a teenager to behave a certain way. It can only be suggested that

magazine coverage could possibly have an effect on the behavior of teenagers at West High School.

Another limitation of this study is the overall lack of male magazines intended for a teenage audience. Therefore, adult focused male magazines had to be compared to teenage focused female magazines. While the male magazines chosen have high teen readership rates, the intended audience is still adults. The intended audience for the male magazines is more mature than the intended audience for the female magazines, and this could have influenced the coverage, and the methods of coverage, of the issue of sun safety and skin cancer. The adult audience intended for the male magazines studied could be reflective of the more sophisticated content.

This methodology also relied on participants to give honest and truthful answers. A participant may have not answered honestly because he or she did not want to go against what other members in the group may have said. It is also possible that participants were persuaded to answer in a particular manner, giving what they thought would be considered the “correct” answers because the focus groups were led by an authority figure. While the focus group moderator and note taker were not teachers or authority figures in the environment in which the focus groups took place (their high school), they were both older adults and could be perceived as an authority figure.

After reviewing the results, it would have been beneficial to have focus group participants commenting not only on their tanning behavior, but also how often they experienced sunburns.

Future studies could further discuss parental involvement and analyze how the parents’ tanning behavior could or could not affect their child’s behavior. Other role

model could be examined as an influence in the teenagers' tanning and sun safety behavior. Considering *Cosmopolitan* magazine's recent health initiative to provide readers with more sun safety knowledge, it could be beneficial to conduct a study that would include current issues of these teen magazines. It could also be beneficial to apply a theory such as the Elaboration Likelihood Model to the specific messages in these magazines. By examining these articles in context of the ELM, researchers could help to determine why messages are not being processed correctly.

References

Ad Council: AAD. (2005). Endorsed Campaign: American Academy of Dermatology.

Retrieved January 31, 2005, from:

http://www.adcouncil.org/campaigns/american_academy_dermatology/index.html

Ad Council: SCF. (2005). Skin Cancer Prevention. Retrieved January 31, 2005, from:

http://www.adcouncil.org/campaigns/skin_cancer_prevention/index.html

Allan, S.J.R., Doherty, V.R. (1995). Naevophobia. *Clinical and Experimental*

Dermatology, 20(6), 499-501

American Cancer Society. (2005). Prevention and early detection- skin cancer facts.

Retrieved March 28, 2006, from:

http://cancer.org/docroot/PED/content/ped_7_1_What_You_Need_To_Know_About_Skin_Cancer.htm

American Academy of Dermatology (2006). Darker side of tanning. Retrieved

March 28, 2006, from:

<http://www.aad.org/NR/exeres/37674AB6-9A2E-41C4-A7B5-74F263CC08A1.htm?NRMODE=Published>

American Academy of Dermatology (May 3, 2004). American Academy of

Dermatology challenges validity of recent claims promoting health benefits of

intentional sun exposure. Retrieved March 28, 2006, from:

<http://www.aad.org/aad/Newsroom/Myths+and+Facts+About+Vitamin+D+and+Sun+Exposure.htm>

American Academy of Dermatology (April 29, 2003). New research suggests sun

protection message not heard by young people. Retrieved March 28, 2006, from:

<http://www.aad.org/public/News/NewsReleases/Press+Release+Archives/Skin+>

Cancer+and+Sun+Safety/TeensTanning.htm

American Academy of Dermatology (1987). *The Sun and Your Skin*. Evanston, IL:

American Academy of Dermatology.

Andsager, J.L. (2006, June). *Examining adolescents' sources of information about sun exposure: Media and parents*. Paper presented at the annual conference of the International Communication Association, Health Communication Division, Dresden.

Bacon's Magazine Directory (2005). 53rd ed., Chicago, IL: Bacon's Information Inc.

Bean, M., Boye, B., & Daily, K. (May 2005), "Groom for Improvement." 20.4: 184.

Becker, M.H., Kirscht, J.P., & Drachman, R.H. (1974). A new approach to explaining sick-role behavior in low income populations. *American Journal of Public Health*, 64, 205-216.

Bianchini, F., & Vainio H. (2000) Cancer-preventive effects of sunscreens are uncertain. *Scandinavian Journal of Work Environment, & Health* 26, 529-31.

Buller, D.B., & Borland, R. (1999). Skin cancer prevention for children: a critical review. *Health Education and Behavior*, 26, 317-43.

Buller, D.B., Burgoon, M., Hall, J.R., Levine, N., Taylor, A.M., Beach, B., Buller, M.K., & Melcher, C., (2000) Long-term effects of language intensity in preventive messages on planned family solar protection. *Health Communication*, 12(3), 261-75.

Cacioppo, J.T., & Petty, R.E. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.

Canto, M.T., Drury, T.F., & Horowitz, A.M. (2003). Use of skin and oral cancer

- examinations in the United States, 1998. *Preventive Medicine*, 37(3), 278-82.
- Cokkinides V.E., Davis, K.J., O'Connell, M.C., Weinstock, M.A., & Wingo, P.A. (2002). Summer sunburn and sun exposure among US youths ages 11 to 18: National prevalence and associated factors. *Pediatrics*, 110, 27-35.
- Cora, C. (April 2005) "Eat like a God: the perfect fuel for building the perfect body." *Men's Fitness*, 21.3: 36.
- Devesa, S., Gail, M., Pennello, G. (2000). Association of surface ultraviolet B radiation levels with melanoma and nonmelanoma skin cancer in the United States blacks. *Cancer Epidemiology Biomarkers Prevention*, 9, 291-7.
- Donohew, L., Duncan, J., & Palmgreen, P. (1980). An activation model of information exposure. *Communication Monographs*, 47, 295-303.
- Donohew, L., Lorch, E.P., & Palmgreen, P. (1998). Applications of theoretic model of information exposure to health interventions. *Human Communication Research*, 24(3), 454-468.
- Foehr, U., & Roberts, D. (2004). *Kids and Media in America*. New York: Cambridge University Press.
- Franz, R. (2001). Nurse-Let Skin Cancer Prevention Project Wins Award. *Dermatology Nursing*, 13(2), 142-3
- Glaser, B., & Strauss, A. 1967. *The Discover of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine De Gruyter.
- Goodman, R., & Walsh-Childers, K. (2004). Sculpting the female breast: How college women negotiate the media's ideal breast image." *Journalism and Mass Communication Quarterly*, 81(3), 657-74.

- Hall, H.I., McDavid, K., Jorgensen, C., & Kraft, J. (2001). Factors associated with sunburn in white children aged 6 months to 11 years. *American Journal of Preventative Medicine*, 20(1), 9-14.
- Harrington, N.G., Lane, D.R., Donohew, L., Zimmerman, R.S. Norling, G.R., An, J.H., Cheah, W.H., McClure, L., Buckingham, T., Garofalo, E., & Bevins, C.C., (2003). Persuasive strategies for effective anti-drug messages. *Communication Monographs*, 70(1), 16-38.
- Harvey, M. (2000). Magazines: Let's hear it for the boys. *American Demographics*, 20(8), 30.
- Hobday, E. "Research alert," (September 2005) *Men's Health*, 20.7: 44.
- "How-To: Perfect glossy lips: Tired of clumpy, goopy gloss that dulls within minutes? Follow these simple steps for the smoothest, shiniest lips ever." (September 2005) *Teen People*, 8.7: 136.
- IMDB.com, "I know what you did last summer." Retrieved July 26, 2006 from: www.imdb.com/title/tt0130018/
- Ingvar, C., Olsson, H., & Westerdahl, J. (1994). At what age do sunburn episodes play a crucial role for the development of malignant melanoma? *European Journal of Cancer* 30, 1647-54.
- James, D.C.S., Riezo, B.A., & Frazee, C. (1997). Using focus groups to develop a nutrition education video for high school students. *Journal of School Health*, 67(9), 376-82.
- Janz, NK., & Becker, M.H. (1984). The health belief model: A decade later. *Health Education Quarterly* 11(1), 1-47.

- Jeffrey, N., Shapiro, E., Picard, A., Grout, P., & Curry, S.R. (2005). Are tanning beds unsafe for teens? *People* 63(19), 153-54.
- Jernigan, S., & Katz, R.C. (1991). Brief report: An empirically derived educational program for detecting and preventing skin cancer." *Journal of Behavioral Medicine*, 14(4), 421-28.
- Kamin, C.S., O'Neil, P.N., & Ahearn, M.J. (1993). Developing and evaluating a cancer prevention teaching module for secondary education: Project SAFETY (Sun Awareness for Educating Today's Youth)," *Journal of Cancer Education*, 8(4), 313-18.
- Kaiser Family Foundation (2004). Tweens, teens, and magazines. Retrieved March 28, 2006, from: <http://www.kff.org/entmedia/upload/Tweens-Teens-and-Magazines-Fact-Sheet.pdf>.
- Keily, K. (June/July 2005), "Silver screens: choose the best sunblock for your lifestyle." *Men's Fitness*, 21.5: 52.
- Koh, H.K., Bak, S.M., Geller, A., Mangione, T.W., Hingson, R.W., Levenson, S.M., Miller, D.R., Lew,R.A., & Howland, J. (1997). Sunbathing habits and sunscreen use among white adults: Results of a national survey. *American Journal of Public Health*, 87(7), 1214-17.
- Krueger, R.A. (1994). *Focus Groups: A Practical Guide for Applied Research*. 2nd ed. Thousand Oaks, California: Sage Publications.
- Labre, M.P., & Walsh-Childers K. (2003). Friendly advice? Beauty messages in web sites of teen magazines." *Mass Communication and Society*, 6(4), 379-96.
- La Ferle, C., Edwards, S.M., & Lee, W. (2000). Teens' use of traditional

- media and the internet. *Journal of Advertising Research*, 40(3), 55-67
- Lepre, C., Walsh-Childers, K., & Chance, J.C. (2003). Newspaper coverage portrays managed care negatively. *Newspaper Research Journal* 24(2), 9-11.
- Magazine Publishers of America. (2004). Teen Market Profile. Retrieved February 12, 2006, from: <http://www.magazine.org/content/files/teenprofile04.pdf>
- Magazine Publishers Association. (2004). Fact Sheet Industry News and Resources: Defunct or Suspended Magazines, January-December 2001. Retrieved February 12, 2006, from: <http://www.kff.org/entmedia/upload/Tweens-Teens-and-Magazines-Fact-Sheet.pdf>.
- McKenzie, J., Neiger, B., & Smeltzer, J. (2005). *Planning, Implementing and Evaluating Health Promotion Programs*. San Francisco, CA: Pearson Education, Inc.
- Mermelstein, R.J., & Riesenberg, L.A. (1992). Changing knowledge and attitudes about skin cancer risk factors in adolescents. *Health Psychology*, 11(6) 371-76.
- Morgan, D.L. (1988). *Focus Groups as Qualitative Research*. Newbury Park, California: Sage Publications.
- Morse, J.M. (1994) "Emerging from the data: The cognitive process of analysis in qualitative inquiry," in Morse, J.M. (eds), *Critical Issues in Qualitative Research Methods*, Sage Publications, Thousand Oaks, CA.
- National cancer Institute. (2005). Prevention of Skin Cancer. Retrieved February 12, 2006, from: <http://www.webmd.com/hw/melanoma/ncicdr0000062802-skin-cancer-prevention.asp>.
- "Packin' heat: these spring break goodies cut primping time in half- so there's more time to party, my dear!" (April 2005). *CosmoGirl!* 7.3: 100.

- Parrott, R., & Duggan, A. (1999). Using coaches as role models of sun protection for youth: Georgia's "Got Youth Covered" project. *Journal of Applied Communication Research*, 27, 107-19.
- Peattie, K., Peattie, S., & Clarke, P. (2001). Skin cancer prevention: Reevaluating the public policy implications. *Journal of Public Policy & Marketing*, 20(2), 268.
- Rochester, P. (1999). State-level planning for skin cancer using social marketing techniques-practice and potential. *Social Marketing Quarterly*, 5(4), 112-4.
- Saraiya, M., Glanz, K., Briss P.A., Nichols, P., White, C., Das, D., Smith, S.J., Tannor, B., Hutchinson, A.B., Wilson, K.M., Gandhi, N., Lee, N.C., Rimer, B., Coates, R.C., Kerner, J.F., Hiatt, R.A., Buffler, P., & Rochester, P., &(2004). Interventions to prevent skin cancer by reducing exposure to ultraviolet radiation. *American Journal of Preventive Medicine*, 27(5), 422-66.
- Schofield, M.J., Tripodi, D.A., Girgis, A., & Sanson-Fisher, R.W. (1991). "Solar Protection Issues for Schools: Policy, Practice, and Recommendations," *Australian Journal of Public Health*, 15(2), 135-41.
- Severin, W.J., & Tankard, J. (2001). *Communication Theories*. New York: Addison Wesley Longman, Inc.
- Singnorelli, N. (1997). A content analysis: Reflections of girls in the media. *The Kaiser Family Foundation and Children Now*, April 1997.
- Smith, S.D. (2006). More than skin-deep. *Media Week*, 16(15), 74.
- Sports Illustrated (2005). Sales and Marketing Information Center. Retrieved July 20, 2006, from: <http://sportsillustrated.cnn.com/adinfo/si/mriNationalFall2005.html>.
- Taylor Research & Consulting Group (2003). *Taylor Kids Pulse: Where the Wired*

Things Are as cited in *Teen Media Monitor: Teen Girls, The Kaiser Family Foundation*, 2(1).

Tyre, Peg. "No longer most likely to succeed: In an overcrowded market, teen magazines fight for their lives," *Newsweek*, 19 April 2004.

Warren, E.K (November 2005). In the clear skin sins: fed up with pimples? Join the club! CG! Knows it stinks to have bad skin, so we put together this simple guide to ix-nay your its-zay. *CosmoGirl!*, 7.9: 118.

Weinstock, M.A. (1999). Do sunscreens increase or decrease melanoma risk: an epidemiologic evaluation. *Journal of Investigative Dermatology Symptom* 4, 97-100.

Weinstock, M.A., & Rossi, J.S. (1998). The Rhode Island sun smart project: A scientific approach to skin cancer prevention. *Clinics in Dermatology* 16, 411-13.

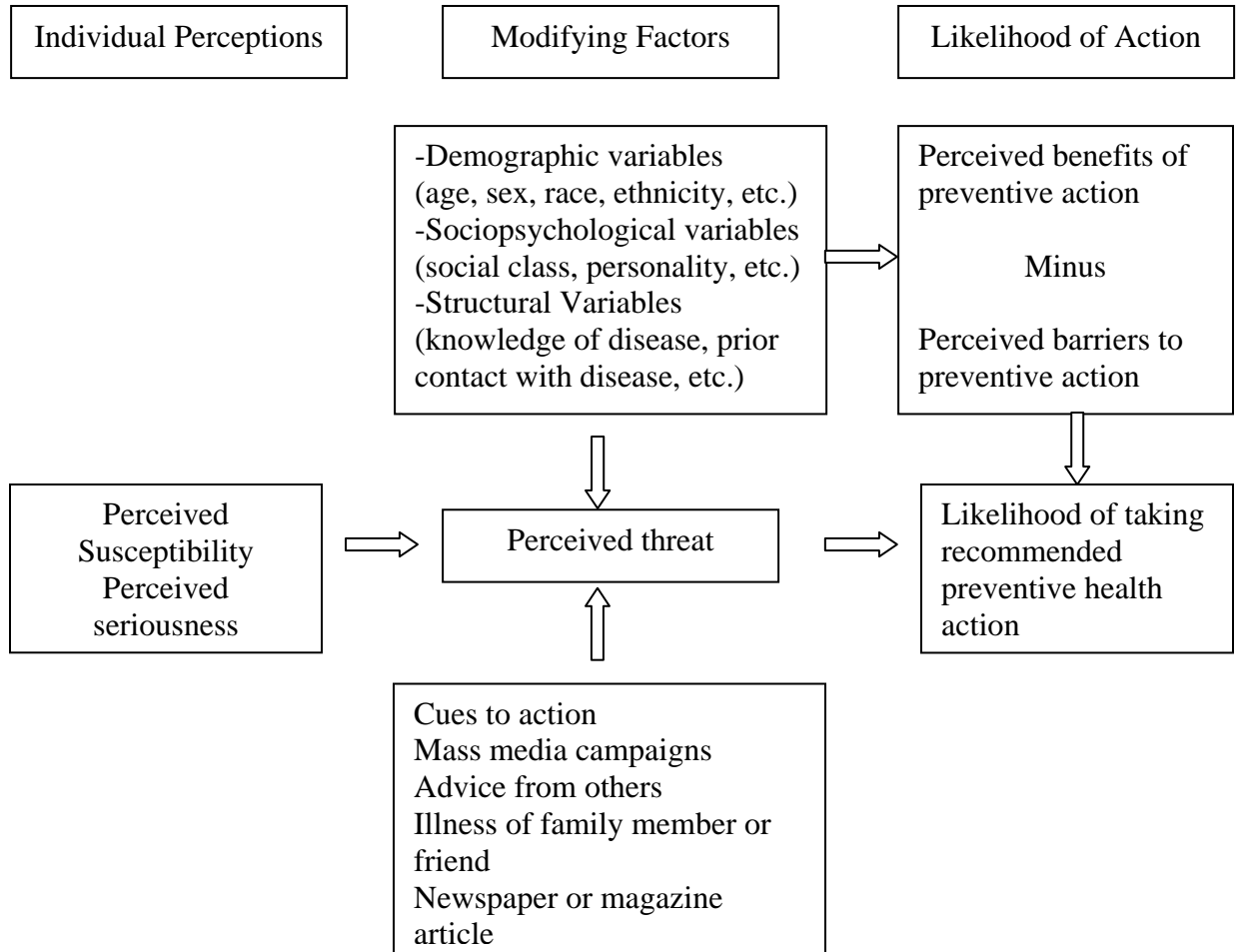
Weinstock, M.A., Willett, W.C., Bronstein, B.R., & Speizer F.E., (1989). Non-familial cutaneous melanoma incidence in women associated with sun exposure before 20 years of age," *Pediatrics*, 84(2), 199-204.

West High School (2004-2005). School Profile. Retrieved July 25, 2006, from: <http://west.knox.k12tn.net/support/guidance/schoolprofile.html>.

Young, A.R. (2004), Tanning devises- fast track to skin cancer? *Pigment Cell Research* 17, 2-9.

Appendix

Appendix A



Vita

Anna Greene graduated from George Mason University with a bachelor's degree in communication, concentration in public relations. Anna moved from Virginia to Knoxville, Tennessee to pursue a master's degree in communication at The University of Tennessee. She enrolled in the School of Journalism and Electronic Media and took classes under the science communication concentration.