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Exploring Attitudes, Subjective Norms, and Perceived Behavioral Control of Sun-Protective Behaviors in Intercollegiate Student Athletes

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2010

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Abstract

Exploring Attitudes, Subjective Norms, and Perceived Behavioral Control of Sun-Protective Behaviors in Intercollegiate Student Athletes By Kari Ann Bannon

The purpose of this mixed methods study was to explore how attitudes, subjective norms, and perceived behavioral control of sun-protective behaviors (SPB) affected intention to practice SPB in an intercollegiate student athlete population. Guided by the Theory of Planned Behavior (TPB), it examined these factors in depth to understand why intercollegiate student athletes currently report high levels of sun exposure but low levels of sun protection compared to non-athlete peers. A paper and pencil survey and two gender-specific focus groups with male and female tennis players (n=11) were conducted at a private university in Georgia. Data were collected and analyzed for deductive and inductive codes based on the TPB constructs. Overall, women reported higher average intention and subjective norm scores, indicating stronger intention to practice SPB and more supportive norms for practicing SPB by coaches and teammates. However, men indicated higher instrumental attitude scores, indicating the men had more favorable attitudes toward using SPB than the women. Men also indicated more control over and less difficulty with practicing SPB on average than the women, all though women indicated that SPB was less time consuming than men indicated. These findings were supported within the focus groups, with intention relating to burns athletes' or their teammates had experienced or would experience in the coming season. Attitudes toward SPB related to appearance, convenience, SPB and the athletes' ability to play, and avoiding pain from sunburns. Subjective norms were influenced by future health concerns, the normative health behaviors of others, and support from family, coaches and peers concerning SPB. Perceived behavioral control concerned individual control versus institutional control, and what behaviors were possible to practice according to the participants. The idea of context surrounding SPB emerged, specifically related the physical location where sun exposure occurred, the intensity of the sun exposure, and what other behaviors were prioritized over SPB. The results of this study add to the literature for qualitative studies of young adult athletes and intention to practice SPB. Public health practitioners can use the findings here to inform future research and to create more targeted interventions to increase SPB in college athletes.

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Chapter One

Introduction

Statement of the Problem

Skin cancer is a major public health concern, reaching epidemic proportions as the most common form of cancer diagnosed in the United States. Skin cancer incidence rates have been steadily increasing over the past 30 years; since 2004, rates among Caucasians have increased by almost three percent per year in both men and women (American Cancer Society, 2012). More than 1,000,000 new cases of nonmelanoma cancer were diagnosed in 2010, and an estimated 76,250 cases of melanoma (the most deadly form of skin cancer) are expected in 2012, leading to an estimated 9,180 deaths (National Cancer Institute, 2011).

It is estimated that 90 percent of nonmelanoma skin cancers and more than 60 percent of melanoma skin cancers are caused by excessive sun exposure (Cohen, Tsai, & Puffer, 2006). While skin cancer incidence is growing, it is also considered one of the most preventable forms of cancer. As UV radiation from sun exposure is a major environmental risk factor, reducing sun exposure and practicing sun-protective behaviors (SPB), like protective clothing and sunscreen, are the main recommendations for prevention (*Healthy People 2010*; Armstrong, 2004). Young adult populations, ages 18-25 years old, are at an increased risk for skin cancers due to a lack of sun-protective behaviors. Within this population, athletes are at an increased risk versus non-athletes, due to increased sun exposure at peak times during the day and varying attitudes toward sun-protective behaviors (Berndt et al., 2011; Moehrle, 2008; Cohen et al., 2006; Hamant & Adams, 2005) .

At this point, studies indicate that previously surveyed college athletes experience more sun exposure than their non-athlete counterparts, and do not have effective sun-protective behaviors during most of the sun exposure they experience. Cohen et al. (2006) found that high school athletes in the sample averaged 14.3 hours/week of sun exposure compared to 11.4 hours/week for non-athlete controls. College athletes had an even larger disparity, recording 16.1 hour/week on average compared to 10.1 hours/week for non-athlete controls. Berndt et al. (2011) found in Australia that more than 75 percent of the athletes surveyed reported nonuse or inadequate use of sunscreen during the most recent season. Of those athletes, more than half reported a sunburn during the most recent season. Even as multiple sources indicate this difference in behaviors, the beliefs underlying these behaviors are not as well understood (Abroms, Jorgensen, Southwell, Geller, & Emmons, 2003).

While many sun protection interventions are informational in nature, increasing knowledge or perceptions of risk for skin cancer has also been shown to be ineffective in changing SPB. This may be due to the inconsistencies seen between reported attitudes and observed behavior for participants (Hawkes, Hamilton, White, & Young, 2012). Previous studies concerning skin cancer and behavior have used the TPB to inform their interventions. The TPB is a validated model hypothesized to account for the variety of factors behind decision-making in health behaviors, as well as showing high predictive levels of SPB (Abroms et al., 2003; Cohen et al., 2006). Consistently, subjective norms related to significant others (friends, family, etc) have emerged as the weakest constructs for predicting intention to perform SPB (Hawkes et al., 2012). However, further research has indicated that examining subjective norms through salient reference groups may

show a greater effect on intention and behavior, due to their specific expectations and actions (Hillhouse, Adler, Drinnon, & Turrisi, 1997; Terry & Hogg, 1996; White, Hogg, & Terry, 2002).

Study Purpose

The proposed research seeks to explore the relationship concerning sun-protective behaviors among intercollegiate, undergraduate student athletes during outdoor practices or games. Sun-protective behaviors for this study are defined as using sunscreen of at least SPF 15 or higher while outdoors, avoiding the sun between 10:00am and 3:00pm, wearing protective clothing, and seeking shade during extended sun exposure. These factors will be measured by looking at intention, behavior, attitudes, subjective norms, and perceived behavioral control, using the Theory of Planned Behavior. Attitudes surrounding sun-protective behaviors in student athletes include their feelings about sun-protective behaviors, the advantages and disadvantages of using sun-protection, and their values associated with sun-protection in an athletic context. Subjective norms include who would or would not support sun-protection before and during practices or games. Perceived behavioral control includes direct assessment of the amount of control they believe they have over their own sun-protection, as well as how those behaviors are easy or difficult.

Ultimately, better understanding the specific reasons why student athletes may or may not practice sun-protective behaviors of any kind, and what behaviors may be more or less feasible, can provide valuable information to inform future interventions for this population. As skin cancer rates rise, student athletes are a population that need targeted

interventions to improve sun-protection, so understanding the barriers to uptake for certain behaviors, or any behaviors, is important to inform skin prevention interventions.

Significance of the Study

Previous studies concerning sun exposure and protection in athletes have focused on sunscreen as the sole sun-protective behavior, or introduced different theoretical frameworks for understanding the behaviors of athletes concerning sun protection. In doing so, these studies have missed a set of sun-protective behaviors that are available to athletes besides sunscreen. With the numerous quantitative studies done reporting that athletes do not practice appropriate sun-protective behaviors for the amount of time they spend outdoors, few studies have explored the reasons why athletes make these choices. This qualitative study fills this gap, by using focus groups of student athletes to provide reasons why attitudes, subjective norms, and perceived behavioral control may differ for this specific group. By allowing athletes to openly discuss their intentions and behaviors rather than filling out an answer on a survey, many data about facilitators and barriers to SPB can be gleaned and subsequently, more targeted interventions may be possible with this population.

The Community Preventative Services Task Force (CPSTF) have labeled sun protection interventions for college students as having insufficient evidence to determine their effectiveness, based on current available research (Saraiya, Glanz, Briss et al., 2004). Many of the interventions examined by the CPSTF used constructs from the Theory of Planned Behavior, the same theoretical framework that this study employs. By introducing qualitative data, already lacking for college-age student athletes about sun protection, this study provides further research to assist in building more targeted

interventions. According to the CPSTF, more research is needed concerning the behaviors of young adults in order to determine what intervention approaches might work best for this population (Saraiya et al., 2004). As previous evidence indicates that young adult athletes have higher sun exposure rates than their non-athlete counterparts, this population would benefit from more in-depth study of their current behaviors.

Theoretical Framework

The Theory of Planned Behavior (TPB) asserts that intention is the most important predictor of a behavior, with attitudes, subjective norms, and perceived behavioral control acting as direct determinants of behavioral intention (see Figure 1, Ajzen, 1991). Intention is defined as the motivational factors that may influence a behavior. The theory hypothesizes that stronger intention indicates a more likely performance of the behavior. Attitude is defined as the amount of favorable or unfavorable impression a person has toward the behavior in question. Subjective norms are the pressures people feel to perform or not perform the behavior by society. However, TPB hypothesizes that some factors influencing a behavior are not under volitional control, introducing the construct of perceived behavioral control to TPB and asserting that behavior is influenced by motivation and ability. Perceived behavioral control is the perceived ease or difficulty of doing the behavior, based on both past experiences and assumed obstacles. This theory is hypothesized as meaningful for behaviors under the person's volitional control, and therefore can be effective in studying sun-protective behaviors for student athletes (Ajzen, 1991). The correct method for using TPB is to complete qualitative research early on, in order to fully understand the varying attitudes, subjective norms, and perceived behavioral control factors for the study population.

Previous research has shown the utility of TPB concerning sun-protective behaviors and adolescents or young adults. TPB serves as the theoretical framework of this study, and is useful when examining barriers and facilitators of a health behavior.

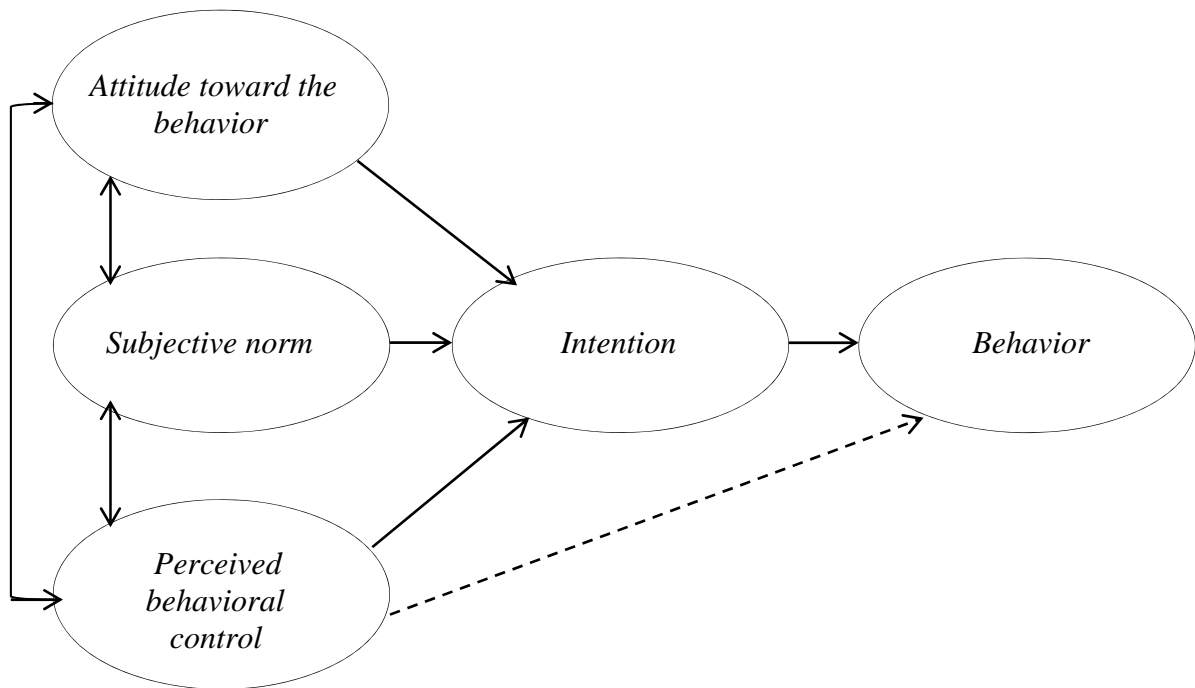


Figure 1: The Theory of Planned Behavior

Definition of Terms

Sun-protective behaviors are multi-faceted, involving a multitude of possible behaviors. For the purpose of this study, sun-protective behaviors will be defined as:

- (1) Sun-screen use of at least SPF 15 or higher outdoors
- (2) Avoiding peak hours of sun exposure, defined as between 10:00am-3:00pm
- (3) Wearing protective clothing, defined as long sleeves, long pants, and wearing a hat
- (4) Seeking shade during long bouts of sun exposure

Chapter Two

Literature Review

Introduction

As stated previously, this study aims to explore the beliefs intercollegiate student athletes have concerning sun-protective behaviors (SPB). Study recruitment and data collection occurred at a small, private university in the Southeast. Previous literature has determined that athletes are at an increased risk for sun exposure, but few studies have delved more deeply into the reasons why with an intercollegiate student athlete population. This review will discuss the rising incidence rates of skin cancer in the United States, and how adolescent and young adult populations are affected. This chapter will also explore the issues facing adolescent and young adult athletes specifically, how gender and appearance motivators have been determined to play a role in sun protection, international research available, and the theoretical framework this study uses.

Incidence Rates for Skin Cancer in the United States

Skin cancer incidence rates have been steadily increasing over the past 30 years; since 2004, incidence rates among whites have increased by almost three percent per year in both men and women (American Cancer Society, 2012). Melanomas of the skin are diagnosed more often in women the under 40 age group, but over 40 diagnoses rates are almost twice as high in men. Ultraviolet radiation (UVR) is the leading behavioral cause of skin cancer, with the major genetic cause being a family history of skin cancer (Buller et al., 2011). Concerning nonmelanoma skin cancers (NMSC), numbers are more difficult to estimate as reports to cancer registries concerning NMSC's are not required. One report estimated that 3.5 million new cases of skin cancer were diagnosed in 2006, with

most forms considered highly curable if found early enough (American Cancer Society, 2012). The survival rates for melanoma are promising in the early stages, with a large majority of cases diagnosed as localized melanoma that has a 98 percent five-year survival rate. However, survival declines to 62 percent for the regional stage, and the survival rate is only 15 percent for cancers that are diagnosed in the distant stage¹. This rate is a lower five-year survival rate than breast (female), ovarian, and prostate cancers (American Cancer Society, 2012). Overall, one in 50 men and women will be diagnosed with melanoma in their lifetime, indicating the serious public health concern this cancer has become (Howlander, Noone, Krapcho ... & Cronin (Eds) 2012).

Adolescents and Young Adults

Early detection of skin cancer is important, as is early childhood prevention. Studies have focused on different age groups, with an enormous amount of literature surrounding childhood interventions to create effective SPB. Blistering sunburns in youth are known to be a factor in adult skin cancer development (Mahe et al., 2011). In the United States, adolescents and young adults (ages 15-39 years old) are at very high risk for sun exposure that could later lead to skin cancer diagnoses. In fact, invasive melanoma is the third most common cancer diagnosed among that age group (Weir et al., 2011). Only 48.3 percent of young adults aged 18 to 24 reported usually or always protecting themselves from the sun, whereas 62.3 percent of those 25 years of age and older reported usually or always protecting themselves (National Cancer Institute, 2012).

¹**Local:** an invasive malignant cancer confined entirely to the organ of origin. **Regional:** a malignant cancer that 1) has extended beyond the limits of the organ of origin directly into surrounding organs or tissues; 2) involves regional lymph nodes by way of lymphatic system; or 3) has both regional extension and involvement of regional lymph nodes. **Distant:** a malignant cancer that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis to distant organs, tissues, or via the lymphatic system to distant lymph nodes.

Concerning athletes, previous studies show that there is a higher rate of sun exposure coupled with a lower rate of sun protection, indicating they are a group in need of further study (Cohen et al, 2006; Berndt et al., 2011).

Factors Influencing Sun-Protective Behaviors

Studies have focused on adolescent and young adult populations with emphasis on gender differences, appearance motivations, and perceived susceptibilities to skin cancer surrounding SPB. While prevalence in older populations is higher than in young adults, this is an important age to begin or continue proper sun-avoidance or protective behaviors to prevent those future diagnoses (Kasparian, McLoone, & Meiser, 2009). Spradlin et al (2010) found that oftentimes young adults knew that sun exposure increased risk for skin cancer, but only 29 percent could correctly identify SPB to reduce sun exposure. As the population ages in the United States, cancer incidence will continue to rise as well, leaving the public health practitioner to create interventions to prevent today's youth from following that trend (American Cancer Society, 2012). Barriers concerning SPB in this population can be extensive, including forgetfulness, inconvenience, thoughts that protective clothing is uncomfortable, and positive opinions surrounding tanning (Cohen et al., 2006).

Gender Differences

Some studies have indicated there may be gender difference in SPB between males and females. Abrams et al. (2003) explored gender differences in sunscreen use in 18-25 year olds through focus groups at different facilities in Orlando, FL, Baltimore, MD, and Denver, CO. The researchers hypothesized, based on literature, that early adulthood is a point when considerable damage is done to skin due to more exposure to

the sun, higher determination to suntan, and lower likelihood of using sunscreen compared to other age groups. By using both mixed and same gender focus groups, the researchers were able to get an in-depth perspective into the sunscreen use differences that had previously been well established. Findings indicated that salient beliefs concerning sunscreen use differed among males and females, with females having a more preventative style of use and males having a more reactive style. However, this study introduces another aspect to the issues surrounding use of SPB in young adults; SPB have to compete with appearance motives of tanning.

Knowing about these gender differences can further inform interventions that target adolescent populations. When considering appearance motivators behind a lack of SPB, a paradox is increasingly seen. While women report more worry over sun exposure and skin cancer, they are also more likely to deliberately tan. However, research indicates that while men may not deliberately tan outdoors or use tanning beds as often as women, they still value a tanned appearance if the group norms call for one. In turn, this may cause a deliberate avoidance of sun protection when outdoors, as masculine roles require that a suntan is achieved incidentally, through outdoor activities, versus deliberately through tanning (Lorenc, Jamal, & Cooper, 2012).

Tanning and Appearance Motivators

Tanning and appearance motivators often relate to gender differences as well. However, body image and appearance motivators are an increasingly important focus for sun protection interventions, especially in adolescents and young adults. Buller et al (2011) delve into this issue concerning sunburns, sun protection and indoor tanning for a variety of age groups. The researchers found that older adults and women took the most

precautions, but that indoor tanning was extremely prevalent among young adults and women in general. Their results indicate that 60 percent of parents were found to apply sunscreen to their children, and a quarter also reported seeking shade while outdoors; this is further indication that older adults and children are not populations that need as much immediate focus as adolescents and young adults. Buller et al. (2011) found that only about 3 out of 10 adults regularly practiced SPB, and 34.4 percent reported sunburns in the past year, indicating that work with this group is not entirely complete.

While adolescents often still live at home, meaning their parents often have at least some control over their SPB, this is often not the case for ages 18-25. As college students are a population that is usually leaving home for the first time, they are at risk of lapsing in protective behaviors without parental influence, or may not have that base of knowledge to begin with. Cafri et al (2008) had similar findings when looking at college students specifically, with female students indicating they were affected by socio-cultural influences (friends, family, media influences) and appearance motives both for and against tanning (body image vs. aging).

This idea of appearance motives behind tanning and body image concerns can be a major factor for college athletes as well as general student body. However, young athletes have been found to have lower rates of self-protective behaviors than their peers (Cohen et al., 2006). Young athletes as a population had not been studied in the United States until recent years, and most of those studies focus on knowledge and attitudes surrounding SPB, rather than intention to use SPB. Grunfeld (2004) examined behavioral intention through the Protection Motivation Theory, but his sample was from British universities and did not focus on athletes in particular. Lawler et al (2007) surveyed

young Australian athletes competing in field hockey, soccer, tennis and surf sports, finding that SPB's varied depending on sport type as well as gender differences. Hamant & Adams (2005) anonymously surveyed NCAA soccer and cross-country teams in four universities for proportion of sunscreen use, but did not look into the underlying attitudes or norms surrounding use.

The previous research has laid the groundwork for a more in-depth study of the reasons behind sun protection, or lack thereof, in young athletes. Studies continue to show that athletes do not practice sun-protective behaviors like they should, even as prevention messages and interventions permeate the United States. As the call goes out for more targeted interventions, research needs to delve deeply into why athletes have the knowledge of the dangers of sun exposure but do not follow through on protection. Giving athletes their own voice in the research may enlighten previous research, and provide information for a useful, targeted intervention.

International Research

The United States provides a large portion of the literature available on sun protection; however, there are a number of international studies available concerning adolescents and young adults, with many from Australia and the United Kingdom, as well as other parts of Europe. Considering Australia's prevalence of outdoor sports and their incidence of skin cancer, the highest rate in the world (Prium, Wright, & Green, 1999), this is not surprising. In Potente, Coppa, Williams & Engels (2011), SPB of Australian youth ages 12-20 were examined using the TPB. Positive attitudes toward the sun and tanning played a major role in the lack of SPB practiced by the participants. However, while the study implemented ethnographic methods for an in-depth

understanding, the context of Australian youth may be substantially different from youth in the United States. This study also did not focus on athletes specifically, although it did indicate that the surveyed athletes' behaviors were affected further by factors like subjective norms and perceived behavioral control (Potente et al., 2011). In Lorenc et al.'s (2012) systematic review of qualitative literature, only six of the 23 included studies were done in the United States, with only Abrams et al. (2003) focused solely on young adults.

Theoretical Framework

Swimmers and lifeguards are the most often studied athletic populations for sun exposure and protection in the United States, understandable concerning the excessive sun exposure they receive, especially in peak months of the year. The Pool Cool Diffusion Trials in 2004 and 2005 were examples of this, with an intervention created to be implemented by the lifeguards for the pool visitors. Individual-level and setting-level factors affected the implementation of the intervention, which included the lifeguard's sun-protection related attitudes and behaviors (Rabin et al., 2010). Missing from the literature are studies that focus on college athletes, as they are a high-risk population. Health behaviors in this age-group are also affected by underlying attitudes, perceived behavioral control, and subjective norms, shaping their intentions to complete SPB. Many of the pieces are there, but they have not been put into a theoretical framework to guide the questions. The Theory of Reasoned Action and the Theory of Planned Behavior have been used with SPB and skin cancer research in the past. Abrams et al. (2003) used behavior, behavioral beliefs and normative beliefs as constructs to measure gender differences concerning intention. These constructs opened and shaped themes that

emerged in the focus groups conducted. This study may function as a template for examining SPB in an intercollegiate student athlete population as well.

Cohen et al. (2006) examined athlete knowledge and attitudes compared to a control of non-athletes at the university and high school level, using the Sun-Protection Questionnaire (SPQ). The SPQ asked about norms surrounding sunscreen use and SPB as well, indicating that these constructs have an important influence on student athletes, and shift as they get older. Results indicated that those athletes reported higher levels of UVR exposure, higher rates of sunburn and lower rates of SPB than their control counterparts; however, the underlying reasons why were not examined in this quantitative study. Interventions for this high-risk population were recommended in the studies that looked at athletes; qualitative research concerning the underlying norms and attitudes could help to inform more effective interventions (Hamant & Adams, 2005; Rabin et al., 2010).

From the gaps identified in the literature, more detailed information is needed concerning athletic populations due to their high-risk for poor SPB, related specifically to their attitudes, subjective norms, and perceived behavioral control around intention or behavioral action for SPB. Kasparian et al. (2009) published a review of literature related to skin cancer prevention with various populations, finding 91 studies that met the inclusion criteria for the review. The strongest statement the researchers could make after 91 studies was that even those may not provide a clear picture of the prevalence and barriers surrounding sun protection for any age group. Given this, qualitative research with a small, at-risk subset of a population, young adults, may help identify their most pressing barriers to sun protection. There is a need to more fully understand the underlying determinants of intention to use SPB for these athletes.

Summary

As discussed previously, melanoma is the third most common cancer in adolescents and young adults at this time (Weir et al., 2011). Currently, the CPSTF have found sun protection interventions for college students have insufficient evidence to determine their effectiveness, based on current available research (Saraiya, Glanz, Briss et al., 2004). Interventions examining the specific factors affecting athletic populations are also lacking in current research. Some studies have employed qualitative methods in examining attitudes, subjective norms, and perceived behavioral control for adolescents and young adults. However, these studies were often performed in other countries with higher rates of skin cancer, like Australia, meaning that the context discussed may be different for adolescents or young adults in the United States.

Focusing on intercollegiate student athletes and the specific contextual pressures they face will allow for the interventions called for throughout the literature (Kasparian et al, 2009). While many researchers have produced survey measures to examine athletes' behaviors previously, the underlying factors for those choices are still not well understood in the college setting. Qualitative research with young adults has often been gender or appearance-based, or completed in another country (Abroms et al., 2003; Cafri et al., 2008; Potente et al., 2011), with little done on intercollegiate student athletes in the United States. Considering the risk for heavy sun exposure in this population, more in-depth research is needed to examine sun-protective intentions and behavior. This study will allow athletes to expand on what they feel are barriers to sun protection, with aspects other than solely sunscreen use, and the focus group setting will help to encourage active participation in the discussions.

Chapter Three

Methodology

Introduction

The purpose of this study was to explore the beliefs that intercollegiate student athletes have concerning sun-protective behaviors (SPB). The research design for the present study was a cross-sectional qualitative study, consisting of semi-structured focus group interviews, taking no more than two hours, and a short paper and pencil survey. The survey collected demographic information and supported the information collected in the focus groups concerning behavior, intention, attitudes, subjective norms, and perceived behavioral control. This study (IRB00063123) received Exempt approval from Emory University's Institutional Review Board (IRB), as well as Expedited approval from the student athletes' university's IRB.

Participants

This study was conducted from January 2013 to March 2013 with intercollegiate student athletes from a private university in the Southeast. The eligibility requirements for the study included being a member of at least one intercollegiate athletic team with practices and/or games held outside at least twice a week during the season, having both male and female team options, and being between the ages of 18-25. Athletes were excluded if they had not been a member of the team for at least three months prior to data collection. The sample of students included athletes who responded to recruitment flyers or meetings and agreed to participate in the focus groups. Overall, 11 intercollegiate student athletes participated in two focus groups.

Procedure

Individuals that met the inclusion criteria for the study were identified through passive and active recruiting techniques on the participating university's campus. Passive recruitment techniques included sending emails to coaches with the flyer and a description of the project to forward to their team, as well as posting flyers around campus and the athletic center (Appendices A and B). Active recruitment techniques included attending practices of appropriate teams, with the coach's approval, to discuss the project with the athletes, passing out handouts with contact information and further details (Appendix C). Students who responded to the flyers or indicated interest in person were screened by the researcher to determine eligibility then given a series of dates to set up focus group discussions.

The researcher sought a target sample size between 10-40 respondents across two to three focus groups; however the exact number was dependent on the response rate and number of participants who came to focus groups, the content of completed focus groups, and when the researcher felt saturation had been reached. Focus groups took place in a private room in the university's athletic center on campus and participants were provided snacks for their time. Written informed consent was obtained from all participants prior to their completion of the survey and participation in the focus group interviews (Appendix D). Verbal consent was also recorded for all participants.

Qualitative Measures

A semi-structured focus group guide directed both of the focus group interviews (Appendix E). Questions were informed by constructs of the Theory of Planned Behavior (Ajzen, 1991).

Introductory Questions. The first sets of questions were general introductory questions, so the focus group participants could introduce themselves to the group and become comfortable speaking in the group atmosphere. Those questions were “As an introduction, let’s go around so that you can introduce yourselves, and tell us about what your favorite sport was growing up and why” as well as “What are some reasons why you became involved in sports?”

Sun-Protective Behaviors (SPB). Following the introduction, the next set of questions in the focus group guide focused on reasons why someone practices sun protection as well as when they should practice. An example question is “What are some reasons why someone may attempt to practice SPB routinely during the day but don’t/can’t” with probes like time constraints or alternate priorities.

Intentions to practice SPB. Those questions dealt with intentions athletes had toward sun protection during practices and games. The Theory of Planned Behavior (TPB) indicates that intention to perform a behavior is often the most important predictor, with attitudes, subjective norms, and perceived behavioral control affecting the outcome. It was important to determine the athletes’ intentions in an in-depth perspective. An example question from this section included “How likely are you to practice SPB during practices or games?”

Attitudes about SPB. These questions in the guide focused on athletes’ attitudes surrounding SPB, broken into experiential attitudes and instrumental attitudes. Questions included specific feelings of the athletes concerning SPB, advantages and disadvantages of using SPB, and also focused on values athletes associated with SPB. Some example questions included “What are some advantages of athletes using SPB during

practices/games?” and “What are some values associated with SPB for athletes?” Probes in this section included what benefits or negative effects may result from SPB, and what may be good or bad about SPB in the context of practices or games.

Subjective Norms of SPB. The next topic covered were the subjective norms of SPB as related by the athletes. These questions discussed how most athletes felt about SPB, as well as the normative influence of others on their own SPB as athletes. Some example questions included “How do most athletes feel about SPB?” and “Who would support your practicing SPB in the context of practices or games?” Probes for this section included whether teammates, coaches, or family would support SPB and whether SPB was useful or problematic in athletic settings.

Perceived Behavioral Control of SPB. The final topic area on the guide explored perceived behavioral control concerning SPB in athletic settings. Example questions included “How much control do athletes feel they have over their own SPB in athletic settings?” and “What makes practicing SPB easy/difficult for an athlete?” Probes in this section included whether this depends on the specific type of SPB and whether they have the time, resources, and support system to practice SPB.

Quantitative Survey Measures

Additionally, a sun-protective behavior survey was provided to focus groups participants prior to the interviews (Appendix F). Demographics were measured first, asking about age and gender. Ethnicity was recorded with the question “Which ethnicity do you most identify with?” with six answer options: White (Non-Hispanic), Black/African American (Non-Hispanic), Hispanic, Asian/Pacific Islander, Native American/Alaskan Native, or Other. To determine a personal or family history of skin

cancer, the question was asked “Is there a history of skin cancer for you or in your family?” with five answer choices: Yes, a personal history; Yes, a first degree relative (mother, father, sister, brother); Yes, extended family (grandparents, aunts, uncles); No, no personal or family history; and I don’t know. To determine their sport, “What school-sponsored sports team are you currently on?” was asked, with a fill-in-the-blank answer area. Years playing the sport were assessed with the question, “How many years have you played this sport?” and recorded as a continuous variable. And to ensure they met the outdoor eligibility criteria, “Do you have practices or games outside at least twice a week during the season?” was asked, with Yes or No response options.

Intention to practice SPB was measured using a scale adapted from measures in Glanz, Rimer, & Viswanath (Eds) (2002). This was a six-item scale with answer options ranging from 1-Very Unlikely to 5-Very Likely. Sample items include “How likely are you to wear sunscreen during practices or games?” and “How likely are you to wear sunscreen anytime you are outdoors for more than one hour?” No recodes were needed, all items were worded positively. A total intention score was computed by summing across all the items. Scores could range from 6 to 30, with higher scores indicating higher intention to complete the behavior. Cronbach’s alpha reliability for this scale was .774, indicating an adequate internal consistency of scale items.

Two items measured instrumental attitudes toward sun-protective behaviors on the survey: “I believe SPB will protect me from sunburns” and “I believe SPB will protect me from skin cancer.” Response options ranged from 1-Strongly disagree to 5-Strongly agree. Scores ranged from 5 to 10, with higher scores indicating more positive

attitudes toward SPB use. The Cronbach's alpha reliability for these items was .908, indicating high internal consistency for these items.

Subjective norms, specifically normative beliefs, were measured using items adapted from Glanz et al (2002). These four items had answer options ranging from 1-Strongly disagree to 5-Strongly agree. Sample items include "My coach would not approve of using sunscreen during practices or games" and "My teammates would approve of my using sunscreen during practices or games." Two items were recoded so that all items were worded positively. Scores ranged from 4 to 20, with higher scores indicating more supportive norms surrounding SPB. Cronbach's alpha reliability for these items was .711, indicating adequate internal consistency between the items.

Perceived behavioral control was measured using three semantic differential items adapted from Glanz et al (2002). Items included "Sun-protective behaviors during practices and/or games are 1-under my control to 5-not under my control" and "Sun-protective behaviors during practices and/or games are 1-not time consuming to 5-time consuming." Each item was scored separately from 1 to 5, and an average score for each was computed.

Behavioral practices and perceptions were measured throughout, with sample items including "When you are outside for more than one hour, how often do you wear sunscreen with an SPF of 15 or higher?" and "When you are outside for more than one hour, how often do you seek shade?" Multiple answer options existed depending on the question asked. The above examples had options ranging from 1-Never to 5-Always. For items like "Did you use at least one (1) of the sun-protective behaviors defined previously in your most recent outdoor game?" answer options were split dichotomously between

Yes and No. And for items like “During the past 12 months, how many times have you gotten a sunburn during an outdoor practice or game?” answer options ranged from one (1)-0 times to six (6)-40 or more times.

Data Collection

This study used mixed methods, primarily with focus group interviews for data collection. IRB approval was received by both Emory University and the university where the student athletes attended. Qualitative methods were used as the purpose of the study was to discover the underlying factors affecting sun-protective behaviors in intercollegiate student athletes. All focus groups were moderated by the researcher, and digitally recorded to allow for verbatim transcription. In addition to digital recording, notes were taken by a CITI certified research assistant and the researcher throughout, including non-verbal cues, body language, reactions, and any other context not picked up by the recordings. Each focus group lasted between 45 minutes to one hour and 30 minutes. No incentives were given after the focus groups, but snacks were provided to participants during group implementation. At the conclusion of the interview, the research assistant and researcher reflected on the focus groups and documented concerning any salient themes or ideas presented during the time.

Qualitative Analysis

Data analysis was conducted using MAXQDA qualitative software. Recordings from each focus group were transcribed verbatim and augmented by notes. One transcript was coded separately by the researcher and research assistant, reaching a consensus about each of the key themes identified. A codebook was then created, codes were re-examined, and collapsed into larger theoretical categories if possible. Following finalization of the

codebook, the researcher coded the second transcript. Transcripts and detailed notes were reviewed using deductive codes based off of the initial research question and theoretical framework. This was followed by a secondary analysis of key inductive themes that emerged, or concepts the focus group participants identified as important.

Quantitative Analysis

The data from the surveys were analyzed using SPSS 20.0. All electronic data was de-identified and password protected. First a codebook was created to ensure accurate entry of the survey data. Next, data from the surveys were entered into a Microsoft Word document by the researcher and research assistant using double data entry. A program was run to find any discrepancies, and once they both agreed, one dataset was imported into SPSS. Data was split into cases by gender, and descriptive statistics were generated for the demographic characteristics of the participants, as well as current sun-protective behaviors. Composite scores for intention, instrumental attitude, and perceived behavioral control were calculated and split by gender.

Chapter Four

Results

Study Population

A total of 11 intercollegiate student athletes completed questionnaires and participated in two gender-specific focus groups. There were seven women in the first group and four men in the second (Table 1). The participants were similar in demographic variables of age and race/ethnicity. Overall, the average age for men and women was 18.64 (SD=.51). Only one man identified as multiethnic (White & Native American/Alaskan Native) while the rest of the participants identified as White/Non-Hispanic, 90.9% overall. All participants were members of the tennis team, and had slight variations in the number of years they had been playing tennis. For men, the average number of years playing was 9.50 years, while for women it was slightly lower, an average of 7.14 years. None of the participants identified having a personal history of skin cancer. No men indicated having a first degree relative with a history of skin cancer, while one woman indicated a first degree relative with a history (14.3%). Both groups had one participant indicate a member of their extended family with a history of skin cancer. Finally, three women indicated having both first degree relatives and extended family with a history of skin cancer (42.9%). Two men did not know if they had a family history of skin cancer (50%), compared to one woman who did not know if she had a family history (14.3%).

Table 1
Focus Group Participants Demographics

	Male(n=4)	Female(n=7)
Age	18.50 (.58)	18.71 (.49)
Race/Ethnicity		
White (Non-Hispanic)	3 (75%)	7 (100%)
Multiethnic	1 (25%)	--
History of Skin Cancer		
Yes, first degree relative (mother, father, sister, brother)	--	1 (14.3%)
Yes, extended family (grandparents, aunts, uncles)	1 (25%)	1 (14.3%)
No, no personal or family history	1 (25%)	1 (14.3%)
Both first degree relatives and extended family	--	3 (42.9%)
I don't know	2 (50%)	1 (14.3%)
Sport		
Tennis	4 (100%)	7 (100%)
Number of Years Playing Sport		
	9.50 (4.20)	7.14 (3.13)

Sun-protective behaviors (SPB) currently practiced by the participants were measured throughout the questionnaire (Table 2). Only one of the four men (25%) indicated using some form of SPB at least once at the previous outdoor practice, and none of the men indicated using some form of SPB at least once at the previous outdoor game.

This is echoed in the focus groups, with one of the men sharing:

“I never even think about it for practice, it never even crosses my mind for practice, and the times that it crossed my mind for a match is if I know it’s going to be a really hot day outside and I know I’m going to be out there for a while.”

Similarly, only one of the seven women (14.3%) indicated using SPB at the previous outdoor practice, while three of the seven women (42.9%) indicated using SPB at least once at their previous outdoor game. Overall, it seems that both men and women reported not frequently practicing multiple forms of SPB. This is seen not only in the reporting of behaviors, but also from the number of sunburns experienced in the past 12 months, especially for the women, with the majority experiencing between 3-9 sunburns (57.1%).

Table 2

Current Participant Sun-Protective Behaviors		
	Male(n=4)	Female(n=7)
Did you use at least one (1) of the sun-protective behaviors defined previously in your most recent outdoor practice?		
Yes	1 (25%)	1 (14.3%)
No	3 (75%)	6 (85.7%)
Did you use at least one (1) of the sun-protective behaviors defined previously in your most recent outdoor game?		
Yes	--	3 (42.9%)
No	4 (100%)	4 (57.1%)
When you are outside for more than one hour, how often do you wear sunscreen with an SPF of 15 or higher?		
Never	1 (25%)	1 (14.3%)
Rarely	1 (25%)	2 (28.6%)
Sometimes	2 (50%)	4 (57.1%)
When you are outside for more than one hour, how often do wear protective clothing (long sleeves, hat, etc)?		
Rarely	1 (25%)	3 (42.9%)
Sometimes	--	3 (42.9%)
Most of the time	2 (50%)	1 (14.3)
Always	1 (25%)	--
When you are outside for more than one hour, how often do seek out shade?		
Rarely	1 (25%)	1 (14.3%)
Sometimes	1 (25%)	5 (71.4%)
Most of the time	1 (25%)	1 (14.3%)
Always	1 (25%)	--
How often do you avoid being outside between 10:00am and 3:00pm?		
Never	2 (50%)	4 (57.1%)
Rarely	2 (50%)	3 (42.9%)
During the past 12 months, how many times did you use an indoor tanning device such as a sunlamp, sunbed, or tanning booth? (Do not count getting a spray-on tan)		
0 times	4 (100%)	5 (71.4%)
1 or 2 times	--	2 (28.6%)
During the past 12 months, how many times have you gotten a sunburn during an outdoor practice or game?		
0 times	1 (25%)	--
1 or 2 times	2 (50%)	2 (28.6%)
3 to 9 times	--	4 (57.1%)
10 to 19 times	1 (25%)	--
20 to 39 times	--	1 (14.3%)

Note. Only chosen answer choices listed

Based on the Theory of Planned Behavior, the questionnaire measured intention to practice sun-protective behaviors (SPB), subjective norms surrounding SPB, instrumental attitudes toward SPB, and perceived behavioral control of SPB in the participating intercollegiate student athletes (Table 3). Intention was assessed using a six-item scale based on Glanz et al. (2002) with scores ranging from six to 30, with higher scores indicating stronger intention. The women in the group indicated stronger intention to practice SPB than their male counterparts, with the women's average score being 17.86 (SD=3.579). Subjective norms were measured with items adapted from Glanz et al. (2002) as well, with scores ranging from four to 20. Higher scores indicated more supportive subjective norms toward SPB by coaches and teammates. Women reported more supportive subjective norms for practicing SPB, with an average score of 18.14 (SD=1.07).

Instrumental attitudes were assessed with two-items, with scores ranging from two to 10. Higher scores indicate a more positive attitude toward using SPB during practices and/or games. The men indicated a higher instrumental attitude average score than their female counterparts, at 8.75 (SD=1.50) versus 7.86 (SD=1.46), indicating that the men hold more positive attitudes toward using SPB and its protectiveness against sunburns and skin cancer. Concerning perceived behavioral control, semantic differential scales were developed based off of Glanz et al. (2002), and were scored between 1 and 5 for each item. Lower scores indicated that SPB were more under the athlete's control, easier to do, and not as time consuming, respectively. The women participating indicated that SPB during practices and/or games were not under their control (mean=1.25, SD=.98) and more difficult (mean=2.86, SD=.90) compared to their male teammates.

However, the men participating felt that SPB during practices or games were more time consuming overall (mean=2.75, SD=1.71).

Table 3

Total Scores for Intention, Attitudes, Subjective Norms, and Perceived Behavioral Control scales

	Male(n=4)	Female(n=7)
Intention to practice SPB scale	14.75 (4.19)	17.86 (3.579)
Subjective Norms scale	16.75 (2.99)	18.14 (1.07)
Instrumental Attitude scale	8.75 (1.50)	7.86 (1.46)
Perceived Behavioral Control		
Sun-protective behaviors during practices and/or games are under my control	1.25 (.50)	1.57 (.98)
Sun-protective behaviors during practices and/or games are easy to use.	1.75 (.96)	2.86 (.90)
Sun-protective behaviors during practices and/or games are not time consuming.	2.75 (1.71)	2.00 (.58)

Sun-Protective Behaviors

The aim of this study was to determine how the attitude, subjective norms, and perceived behavioral control over SPB of these intercollegiate student athletes affect their practice of SPB. The first topic within the focus groups was to determine their current SPB during an average day as well as at practices or games. Discussions also focused on reasons why they may attempt to practice SPB but cannot or do not.

Overall, these athletes were very knowledgeable about when they should be using sunscreen, all though there was less discussion concerning other forms of SPB that were related to sun exposure. However, both groups made the distinction of when they ‘should’ versus when they ‘actually do’. The women introduced the idea of daily sun protection, with one participant stating, “I guess you probably should all the time... like at least use, like, moisturizer that has sun protection.” While one of the men talked about

daily use, the consensus in that group was that there were certain activities that needed sunscreen. One participant reported,

“We would practice sunscreen when we had, when we knew it was like field day, or when we knew we were going to the beach, or going to go to the creek, or something.”

These comments were seen consistently through both groups, with both men and women indicating what activities determined a need for SPB. Weather was often a factor in these decisions for both groups, with one male participant pointing out “I mean the hotter it gets outside, the less clothes you put on.” Outside of weather, setting also played a role. Both groups were adamant that SPB was necessary when in a beach or pool setting; one man pointed out that sunscreen was needed at the beach “so you don’t get absolutely destroyed when you go.”

As for reasons why someone may attempt SPB but do not or cannot, issues with certain types of SPB came up in both groups. A large factor for sunscreen use in both groups was how it felt, and for long sleeves or seeking shade, both groups agreed that the weather determined that as well. One of the women, discussing sunscreen use, stated, “I don’t like using it during matches cause it makes my hands greasy.” This was a thought echoed within the men’s group as well. Hats were considered less problematic as a whole by men and women; however the women indicated limited vision during matches as a reason why they may not be worn continuously. One woman stated, “...and sometimes hats do get distracting while you’re playing... but most of the time it’s ok...” The overall belief was that when athletes did not practice SPB, it was often due to personal factors.

Intention to Practice Sun-Protective Behaviors

For these athletes, intention to practice SPB was often awakened by the first burn of the new season, their own or someone else's. One of the men stated, "Yeah, pretty much after the first burn, like after you get burned the first time, then you're like 'ok'." All of the participants agreed that a major factor in how likely they were to practice SPB related to the burns they had gotten in the past. One of the women shared her experience with sun poisoning, and how that has made her more likely to use multiple forms of sun protection. As for the men, one participant stated,

"Oh yeah, like I messed up not during tennis, because tennis has kind of become a routine because I've gotten burned so bad."

The importance of that first burn experienced each season was highlighted by both groups. One man shared, "Yeah, pretty much after the first burn, like after you get burned the first time, then you're like 'ok'." Most of the participants agreed that while having a burn personally could affect intention, seeing someone else with a bad burn also brought SPB to the forefront of their memory. Some of the women felt that this was only helpful if they were present for the majority of the painful experience of a teammate; one woman shared, "I'd forget... actually I just heard about it I didn't see it... but I think I would forget." But even thinking about the bad burns occurring in the past, both the men and women shared that that usually is not enough to push them to use SPB consistently, as one woman stated:

"I've had some bad burns... I haven't quite gotten sun poisoning [p2: don't ever do it (laughter)]... and I don't ever want to, but I just... I try to be good about it, cause I am pretty fair, I'm not very dark, but I still just... 'ok, I'll put on sunscreen, yeah I'm going to do this...' and then don't."

Both groups discussed their own failed attempts to change intention into SPB routinely. The men as a whole indicated buying sunscreen and fully intending to begin using it for the season. However, the consensus was that it was often forgotten after purchase. As one man shared,

“I bought a thing of the Coppertone Spray, with the intent of doing that, but then it still lays unopened in the bottom of my closet in my room. Like I got it, I was like ‘you know, I should probably start doing this’ but then I just sort of forgot about it.”

The women had similar discussions; however they also discussed strategies they had tried to create to help connect their purchase of sunscreen and intention to use it more often with actually practicing sunscreen use. The women talked about having multiple bottles in their tennis bags, and suggested ideas for keeping sunscreen they all would use closer at hand. One woman suggested “I think our best bet as a team would be to keep it in the shed, with the balls, for matches.” These discussions surrounding strategies to remember sunscreen may indicate why the women had a higher intention score for practicing SPB on the survey. They discussed how often they buy sunscreen, the types of SPB they try to use, and strategies to practice SPB as a team in much more detail than the men.

The women also discussed the likelihood of athletes versus non-athletes practicing SPB. The majority of these women felt that athletes of any kind were more likely to use sunscreen, wear hats, and practice other types of sun protection comparatively. One participant stated,

“I think athletes more so than non-athletes, cause we’re more likely to have experienced a really bad burn, so even if we don’t think about it all the time if it’s super sunny outside we’re gonna go ‘oh, I remember that one time when I got burnt really badly’...”

The consensus among the group was that whether or not athletes did or did not practice more SPB, it depended on the routine that an individual has in place. At first, the women agreed that athletes use more SPB, but when told that surveys indicate athletes generally do not practice SPB as regularly as non-athletes, one woman stated, “that actually wouldn’t surprise me [I believe it] because they’re out more and it’s just regular everyday life...” relating back to this idea of building a routine for sun protection and its influence. Following intention, the researcher discussed attitudes toward sun protection with the focus group participants.

Attitudes

Overall, the participants’ attitudes, both favorable and unfavorable, concerning SPB revolved around convenience, appearance-related factors, and the values concerning specific issues, namely their ability to play and pain or avoidance of pain.

Convenience

Both groups of participants brought up the convenience throughout the focus groups, focusing mainly on the problems that sunscreen causes for them in practice or match settings. One woman mentioned,

“I just try to stay away from the sun if I can, just a little bit, because it’s such a hassle to put sunscreen on and like, the stickiness of it, and everything... so that’s it.”

When thinking about sun protection, these athletes’ attitudes toward specific types of sun protection would affect their intention and practice of SPB. One of the men shared, “I don’t really like it, it’s greasy, [if you] get it on your fingers you can’t get it off, it feels weird...” when talking about sunscreen in lotion form. However, the men

overwhelmingly supported sunscreen sprays, indicating that they were more convenient.

One man shared,

“It’s more convenient; especially right before, I guess a match or whatever too, if I’m there and I have to play I don’t want to take the time [p9: yeah] to do all of this and all of this (rubbing arms) and the spray I can just, just quickly [do].”

The women, however, were divided in their preferences concerning spray versus lotion sunscreen. While some of the women agreed that the spray was easier and faster, one participant explained her issues with the spray sunscreen having to do with confidence in its coverage. She explains:

“Yeah... I always use the lotion instead of the spray, which is probably why I don’t use it in matches, because I don’t like the spray sunscreen cause I don’t feel like I’m really getting anything...so if I’m gonna use it, I’m gonna use the lotion so I can see me getting everything, but then you can’t use it before matches cause then your hands are nasty.”

A majority of the conversation surrounding convenience and SPB related to sunscreen, but there was some discussion concerning other behaviors. Men were more apt to introduce different sun protection measures into their tennis routines besides sunscreen, specifically due to convenience. When discussing seeking shade with the women, they pointed out that breaks are short, and that shade is not readily available at the courts college students get.” When discussing seeking shade with the men, some men related ways that they created their own sun protection. One participant stated:

“And every odd game in tennis you get to sit down and take a break too... like in tournaments I have like a sponge wet towel thing... I have one of those that I put over my head and the back of my neck and I have a bigger towel that I lay over me.”

This proactive attitude was different from how the women discussed sun protection other than sunscreen in a match or practice setting. Where these men viewed it as an issue that

was easily avoided, the women felt that the setting overall was unfavorable for most sun protection options. Another aspect of attitudes toward SPB that the groups discussed centered on appearance motivators, and whether appearance affects intention for practicing SPB.

Appearance

Appearance was discussed by both groups, but in different contexts, and along gender divisions. For the women, appearance was both a motivator to avoid sunscreen, and to use sunscreen. One woman stated “I know for me, I don’t tan at all, I just burn, so the appearance of it, that’s not a factor for me at all.” While the men did not indicate that a tanned appearance was valued among them, the majority of the women within the group discussed their attempts to maintain tans while in and out of season. However, all the women agreed that avoiding “tennis tan” was a major motivator for using sunscreen while practicing or in a match. The men brought up “tennis tan” as well, but indicated that it was not a factor they worried about currently. One man stated:

“...from tennis, I’ll always wear the tall socks so I’ve just, it [tennis tan] doesn’t even bother me anymore, I mean I used to like, umm, I don’t know like 10th-11th grade, I’d try to make sure I practiced with the short socks and only do matches with the long socks, but I mean over the summer when I would play a lot it’d get right back where it was and I’d stop caring.”

Both groups indicate that SPB have changed from high school to now, with women indicating fewer tanning behaviors, and men indicating less concern over appearance factors. Continuing on the topic of tanning and appearance, many of the participants felt that tanning affected their SPB directly. In both groups, participants commented on a “certain amount of burn that I’ll accept if I know it’ll tan after.” While this was not the majority belief, participants in both groups agreed.

Another factor for the women that the men did not discuss involved sunscreen. A majority of the women only used specific types of sunscreen, indicating that complexion issues can occur if they use different brands. One participant captured how the group felt with the following statement:

“Yeah, that’s the one I use, cause I was the same way, I was like I don’t want to put sunscreen on my face cause I don’t want to make it oily and like break out, like I would have rather gotten burned than break out from my sunscreen...”

Some of the women also discussed using other SPB than sunscreen for appearance reasons rather than related to sun exposure, specifically hats. As one woman related:

“When I wear long sleeves, it’s not, like, to avoid the sun.... and if I wore a hat, it’s more so because I didn’t want to do my hair and less of protecting myself from the sun.”

This feeling was echoed with some of the other women in the group, indicating that while other SPB besides sunscreen may be practiced, it may not be for sun protection specifically.

For men, the only specific about sunscreen mentioned dealt with the lotion versus the spray, which was a convenience-based choice. Overall, the men agreed that the lotion was much less convenient than spray sunscreen. One man stated, “[the] spray’s so much easier, so much easier,” a sentiment echoed by the others. Another man indicated,

“Yeah, before I found, was it that Coppertone Sport, [p9: oh, the spray?] Yeah the spray, before I found that I would use it literally zero.”

The previous quotes indicate a more positive attitude toward the spray sunscreen specifically than the women had. However, some of the men also indicated at least some willingness to use lotion sunscreen if that was all that was available. The men indicating a more positive attitude toward using sunscreen is echoed in their composite instrumental

attitude score on the survey. It is possible that fewer appearance and convenience related concerns, compared to the women sampled, related to this score. The acceptance of sunburn as the lesser issue speaks to the attitudes surrounding sunscreen and sun protection overall for these athletes. Another aspect of the attitudes surrounding SPB for these athletes involved how they valued their ability to play effectively, and their attempts to avoid pain related to sunburns.

SPB and Ability to Play

Issues with SPB affecting their ability to play was discussed by both groups, with men indicating that sunscreen was the one SPB that could affect play if steps are not taken to prevent it. These steps were the same as those discussed by the women for sunscreen, mainly “getting it all off your hands, and you can’t reapply if you’re sweating.” These were reasons why the men chose spray on sunscreen, but some indicated that even if only lotion was available they would still use it on some parts of their body. One man stated:

“I mean if a teammate tossed me the cream I’d put it on my cheeks, my nose, maybe my forehead depending on how much hair I have, and then on the ears. And then like, I’d be like ‘alright’. But I wouldn’t even touch the neck cause then you have to glob it, and it’s like ‘eww’.”

For the women, there were more factors influencing the choice of SPB to prevent SPB from affecting play. Most of the women felt that hats can block eye sight, long sleeves can catch on the racquet, sunscreen can make their hands slick when holding the racquet, and sunscreen can drip into their eyes during play. Adding this to the already somewhat unfavorable attitudes held by some of these athletes can have a large effect on intention and behavior for sun protection.

Pain / Avoidance

Not only does ability to play have an effect, but pain and avoiding pain related to sunburn is also a factor. The link these athletes made between previous burns and intention was discussed previously, and the values these athletes place on avoiding pain relates directly to that intention. Both groups discussed how that first burn of the season, for themselves, or in some instances someone else, changes the value they place on SPB for the rest of the season. One woman commented “that was the only thing that ever made me care about [sunscreen].” Interestingly, this process seems to happen every season, so rather than developing habits that carry over into future seasons, these athletes wait until they see evidence of sun damage before taking steps to prevent it. One of the men described this thought process, stating:

“Yeah, pretty much after the first burn, like after you get burned the first time, then you’re like ‘ok’ [p8: yeah].”

However, experiencing a burn previously was not always enough for making the effort to use sunscreen. Another woman shared her values, saying,

“I accept a little bit of burn if I think it’s going to tan... but I mean, I had that really bad burn that one time, that was probably my sophomore year in high school, and then ever since then I’m hyper aware of if I feel like I’m about to get burnt, I’ll go find sunscreen, but even if, like, when I go out I don’t think about it, but as soon as I feel it, I’ll go look for sunscreen.”

This relates to intention as well, with many of the athletes sharing that the first burn they experience or they see someone else experience will be the indicator for starting to practice SPB. Setting played a role in this idea of pain and avoiding pain as well, which will be discussed again later in results. Overall, the men seemed to have an attitude that was more favorable concerning the necessity of sunscreen, but that does not necessarily affect intention. One man stated, “It’s necessary... but it doesn’t happen.” This thought

was shared by some female participants, but the necessity of SPB had more variation among them, with some indicating that they did not believe it was necessary all the time.

Subjective Norms

The social pressure to perform or not perform SPB for these athletes was influenced by three factors. These factors included future considerations (thinking about health problems in the future), health behaviors of their culture or family, peers, coaches, or others, and the support for SPB provided by family, coaches, and peers.

Future Considerations

Future considerations for these athletes related both to thoughts concerning their future health and skin cancer concerns as well as thoughts concerning future burns, and how that would affect themselves and their teammates. Within the groups, the discussion began with the athletes thinking about future health concerns. The men discussed struggles within themselves in thinking about the future effects of their current sun exposure. One participant said:

“But it’s also kind of hard to think about... getting skin cancer on your head when you have a full head of hair, and I guess it’s hard seeing that far down [ok, sure] like in the future too.”

The men and women both brought up that their coach was currently having skin issues that may be cancer related, citing his struggles as a possible influence on their behavior for the upcoming season. One of the women shared:

“Especially our coach, if he like passed out sunscreen and said ‘y’all need to put sunscreen on’ we’re going to listen to him, not just because he’s a great coach and we know that he really cares about all of us, but he’s had his own problems with skin cancer and other girls who that have had problems...”

For the men, the idea of anyone being against a teammate practicing SPB was unheard of, even for peers who did not use SPB themselves. As one man stated, “there’s nothing to be against” followed by another participant agreeing “yeah, there are real consequences for it.” The women also indicated that no one would be against their practicing SPB, but only if it did not affect their play.

The struggle of thinking about the future was mentioned by the women as well. The majority of the women reported that while they know that not practicing SPB routinely can lead to health issues, it did not increase SPB for most. However, the women discussed the change in norms for their team surrounding tanning beds, and how social pressure from a senior previously on the team who was diagnosed with skin cancer changed many of their behaviors. The women as a whole agreed that tanning beds were a norm in high school and early college for special events, to create a tanned appearance that they valued, with the men supporting that belief. One man shared:

“Cause I’m from _____ originally, and like, I remember when I was a freshman and sophomore, everybody would [go to the tanning bed] for prom or something. I mean everyone. It’s so rainy, and you know, my school it’s like 800 people, 400 girls, and, you know, 350 of them would go to the dance... So yeah, like 300 people would do it.”

However, with the introduction of health issues in a peer, for many, their acceptance of tanning beds started to shift toward less of a norm. One of the women commented, in reference to another team known for using tanning beds, “Horrible, tanning beds are really bad.” Even with this norm changing within this group of women, tanning remains an important type of sun exposure, especially for women. One woman, when discussing why some athletes on other teams may still use tanning beds said, “But like, do people not realize how bad they are for you?” The men also discussed tanning bed use, citing the dangers and the same former teammate the women did, but indicating that tanning beds

are more acceptable for women. One man stated, “Females... [p11: girls, yeah] it’s just weird if a guy does it.” Because of this norm, the men felt tanning beds are not a concern, as they do not use them.

Health Behaviors

Closely related to these future considerations for the majority of participants were the health behaviors of their family or culture, peers, coaches, and others, mainly athletes in other sports and professionals. Both men and women discussed the effects that parents can have on SPB, with one man indicating, “unless my mom really gets on my to use it I don’t, I just don’t...” Some participants indicated that their parents had not pushed SPB while they were living at home, with these participants also indicating struggles with remembering to use SPB. One woman who struggled with remembering sunscreen stated, “See my mom never woke me up and reminded me about sunscreen...” Both groups also indicated that peers who practice SPB influenced use of SPB, especially sunscreen. For the men, even participants with an unfavorable attitude toward sunscreen would apply if a peer provided them with the option. One man explained:

“Yeah if someone was like, if they have the spray and toss it to me like “there you go” I’d be like “alright,” it’s here, I already have it. I mean I’m not going to turn them down and say no, get this out of my face.”

For peers practicing SPB, the participants agreed that no one would be against others using SPB if they chose.

Health behaviors of coaches were also discussed by both groups, with participants indicating that the practices their coaches had often affected their own use. This usually had to do with both the head and assistant coach having sunscreen available at practices or matches; one woman explains, “If it’s like particularly sunny he’ll be like ‘uh, I have

sunscreen if anybody wants it’.” Having it available speaks to convenience again, but some of the women indicated a lower likelihood of using someone else’s sunscreen, discussing the stickiness or high intensity of some sunscreens. The men discussed this as well, and took it a step further to introduce health behaviors of others, i.e. other intercollegiate teams they play against. For the men, their norms included the majority of other athletes practicing SPB actively. As one man described:

“In tournaments I see a lot of people using it, they like, they’ll have their jump ropes and everything right here for the pre-game, and then I’ll always see it they always do the sunscreen.”

As for the women, they discussed the SPB practices of other athletes in their college, and whether they felt any other teams had cultures supporting SPB. While the women agreed that soccer and track were probably more likely to use SPB “just because they don’t have to use their hands”, there was some disagreement concerning other teams and their SPB use. Overall, the women seemed to think that while professional athletes do practice SPB, other athletes in an intercollegiate setting do not.

The overall belief of both groups, however, was that even seeing SPB use as a norm for others was not enough for them to use SPB personally. They all indicated that getting from knowledge or intention to use involved more of a push.

Support of Family, Coaches, and Peers

Both groups acknowledged that support from specific relationships can help with making SPB a more consistent practice. One of the women indicated that the assistant coach played a major role in her use of sunscreen, stating “Well, and the only reason I do is because our assistant coach has to remind me and tell me...” While both groups agreed

that no one can be forced to use any form of sun protection, they do discuss the role that others can play, especially coaches. As one man explained:

“I feel like as far as Coach could take it could be, like if before a match or practice if he had one of the spray ones out there and was like ‘alright, I’m not going to make you, but here it is right here, y’all pass it around and use it if you want’ and I feel like a lot more people would use it then.”

The men were not as supportive of peers pushing sun protection, indicating that it’s “not socially acceptable” and more of an individual choice. This was a different norm than that presented by the women, who discussed ways that they could implement group norms of SPB in practices or before matches. They agreed that “our team as a girls’ team, we can take care of each other and we can take care of ourselves.” The women also came up with solutions for supporting SPB for each other while considering issues with convenience or ability to play. Group suggestions included creating a specific time for putting on sunscreen, or having a player who was not due to play a match putting sunscreen on for the other women. While one of the men made a similar suggestion of helping others put on sunscreen, it was immediately disregarded as not socially acceptable among the men’s team.

Parents were called a “key driver” of sun protection by both men and women, but both groups agreed that it is more difficult for parents to have an effect while they are away at college. Even with the difficulty, one woman indicated the major role her mother still played for her. She states:

“I mean I don’t go home often, cause it’s a long drive, but my mom still, like, when I told her I was doing this she was like ‘oh good, this will remind you, when it starts getting warmer, how important it is’ and I know that before every single match I will be getting a phone call making sure that I have sunscreen, and if I can’t go out and buy it I’m sure she’ll send it to me, she’s like a little voice in my ear...”

For the majority of the athletes, however, the consensus was that while living away from home, peers and coaches began to take on a much larger role in determining norms and supporting SPB than parents actively can. The subjective norms questions used focused specifically on teammates and coaches approval of SPB, versus family norms. On the survey, the men overall rated subjective norms as less supportive of SPB than the women. This seems to echo the quotes featured here, that the men find it acceptable as an individual practice, but creating a group norm or routine would be unacceptable.

Perceived Behavioral Control

When considering the perceived ease or difficulty of SPB, subjective norms and attitudes played a role, but two main factors were indicated by participants. The overall consensus among participants was that any SPB is an individual concern, and that while others can support it, they cannot force the behavior to occur. However, that is not to say that coaches could not act as proponents of SPB. The athletes reached a consensus that the life experiences and advice of their coaches would not be ignored, as indicated when discussing support from coaches in relation to subjective norms.

When discussing creating a team routine for SPB, one man shared, “I don’t know, sunscreen’s a-, it’s an individual thing, it’s not really made to be a... it’s like take care of yourself.” On the other hand, the women felt that while SPB were individually controlled, that they were affected by institutional issues within the system and game. Most of the women felt that the uniforms, the types of courts, and the amount of time for breaks in between sets all factored into lower use of SPB at matches. One woman, while discussing integrating SPB into the time between matches or sets, explained:

“We do it between matches but we don’t have a lot of time really between sets... we, if you’re playing, I mean you can be on the court for 2.5 hours

straight, and then you don't really get breaks, you know, you can't leave the court while you're in a match, not in-between sets, nothing. So if you need sunscreen and you don't have it there.... Then you're not putting sunscreen on or else you're going to forfeit your match."

Compared to the women, the men did not list institutional concerns for SPB, pointing at a number of ways to create their own shade, as well as through using spray sunscreen. When probed for examples of SPB other than sunscreen they use in tournaments, one man discussed creating his own shade, stating:

"... like in tournaments I have like a sponge wet towel thing... I have one of those that I put over my head and the back of my neck and I have a bigger towel that I lay over me."

Following that, another player mentioned:

"Yeah, you can sit down... especially if your opponent takes too long, [when] there's one of those I'm going to sit down on the bench for a very long time, you go and you find the windscreen, there's shading, and you just go sit under that."

None of the women mentioned opportunities to circumvent the institutional issues like the men did, which may be why they indicated that overall SPB were less in their control and more difficult than the men indicated on the surveys.

Routines were linked to individual control, and how the changing weather can cause those routines not to develop right away. Both groups discussed how beginning the season in the fall affects their likelihood of creating and maintaining a routine into the summer months, when they felt sunburns were more possible. One man shared:

"I mean when we, for our sport, when we start practicing in the fall, it's not as bad, it's not as, it's not as hot outside, so we start, or for me at least, I think about it, I'm starting off playing I don't need it, and then when it gets to where I do need it, I'm already in the habit of not needing it, so it's just that trying to get it into my routine."

This idea of weather determining when SPB are used, rather than daily use, indicates that setting and context matter to these athletes. The women, in general, were less likely to have developed a routine related to sun protection. One woman stated,

“Umm.... I think just day to day... I don't, I don't use sunscreen day to day, but if we're out, like if we have a match, I use sunscreen, because I'm really, really pale [p5:yeah] and it's not good. [ok] But umm, just every day I don't really think about it.”

Linking routines to perceived behavioral control supports the idea most of the athletes had, that SPB of any kind is an individual choice, and will remain so no matter what factors are introduced. In fact, one of the women who indicated a definite dislike for SPB of any kind felt confident that athletes are in a better position to make a habit of SPB compared to non-athletes. She stated:

“I think athletes have more of an advantage of making it a habit than non-athletes for sure, just because we keep this a routine, it's our daily life, like she said, 6 to 7 days, non-athletes don't go out as much.”

Context

Finally, context was a major factor found throughout the constructs discussed previously, acting as a factor in almost every aspect of these athletes decisions about sun protection. Context was discussed in three ways: the physical location where sun exposure occurred and how that factors into SPB intention and practice, the way sun exposure was received and how intense that exposure is considered, and what other behaviors are prioritized over SPB. When considering attitudes surround SPB, the favorability of the behavior was often directly linked to the context it was set within, like tanning bed use decreasing among the female athletes. Once that cancer risk was made more immediate by a teammate being diagnosed, the context for the exposure changed, making it more intense than sun exposure from tanning at the beach or pool, or exposure

during practices or games. One woman explained this while discussing SPB habits of athletes who play indoors, and how they had different contexts:

“I think it’s because they’re inside, they don’t realize like, like how we realize you can get burned so easily and that the tanning bed is so bad for you but since they’re not outside in the sun they want to go to the tanning bed.”

For both groups, SPB were more acceptable at the beach or pool, also linked to the intensity of exposure there versus on the court. One male participant indicated that,

“the whole switching sides on the court versus literally just laying on, you know, the beach sunbathing for an hour, I feel like that would be worse for than like, an hour moving around...”

Sun exposure as a by-product of practicing or playing in a match was seen by both groups as the least intense way to be exposed to the sun, and hence more acceptable. Overall, attitudes for various SPB truly depended on the setting these behaviors needed to occur in, and the activities they were doing.

For the subjective norms built around sun protection, the context of physical location was a factor for SPB use versus non-use. Both groups indicated that tournaments in certain places, like Florida, were more likely to yield SPB than tournaments in other states. This context was built around the knowledge of that specific area, with one woman commenting,

“...because when I go to Florida, I think to put on sunscreen, but when I’m in Arkansas I have no idea... I mean, who goes to Arkansas?”

Both groups discussed the intensity of the sun in other places, and how it may differ from one place to another, and “you just don’t know what other places are like.” This idea of location may have created a subjective norm within the athletes concerning whether SPB was necessary in that place or not. Related to location was also concerns about weather

specifically, and this idea that sunny and hot means that SPB should be practiced. One woman stated:

“I’ve noticed that, umm, I usually get more sunburns when it’s cloudy outside, because the sun is still there, you just don’t think about it [sure], cause it’s cloudy and everything, but that’s another time when it’s hard for me to remember to reapply sunscreen, is when it’s not bright, sunny out...”

For perceived behavioral control, the context they viewed SPB from determined their ideas of the ease or difficulty. For the men, they viewed SPB through a context of necessity, and thereby reported more personal control and less institutional control having an effect on intention and behavior. For the women, however, they viewed SPB within the context of another part of the already intensive list of things needed to prepare for practices or matches. One participant explained:

“Yeah... and you’ll think about your water, and having a granola bar with you, or a banana on the court... but, the thing about having the sunscreen, it’s more so about putting the sunscreen on...”

The context surrounding these behaviors affected intention to practice SPB directly, with specific context leading to a higher intention, and others leading to lower intention. This factor may account for why both groups had athletes discussing buying sunscreen with the intent of using it every day, but not following through.

Chapter Five

Discussion

Introduction

The purpose of this study was to explore the attitudes, subjective norms, and perceived behavioral control of intercollegiate student athletes, and how that relates to their intention and practice of SPB. The following discussion will detail how the focus group themes identified previously relate to the constructs of the Theory of Planned Behavior. The discussion will also identify themes that relate or deviate from the literature surrounding SPB in young adults and athletes. The findings in this study overall support the findings in previous literature, indicating that more focused research and interventions are needed for SPB in young adult and college-age populations (Saraiya et al., 2004).

Sun-Protective Behaviors and Intention

Overall, intercollegiate student athletes participating in the focus groups had high levels of knowledge concerning SPB options, all though they were most likely to discuss sunscreen use, as well as when and why they should practice SPB. Adolescents and young adults often show high levels of knowledge and awareness, indicating that interventions targeting knowledge do not always translate into behavior change (Hawkes et al., 2012; Arthey & Clarke, 1995). In both focus groups, participants agreed that SPB are important, and that as a whole they should be practicing them more often than they currently do. For this sample, only 50% of the men and 57.1% of the women indicated sometimes using sunscreen of SPF 15 or higher when outside for more than one hour. The remaining participants indicated rarely or never practicing this behavior. This

sample's behaviors are similar to previous literature that maintains that athletes often practice inadequate use of sunscreen and sun protection in a variety of settings (Berndt et al., 2011; Hamant & Adams, 2005).

For both focus groups, there were a number of influences surrounding intention to perform SPB. Men were much less likely to indicate sun protection on a daily basis, all though one participant did mention his father's daily sunscreen use. The consensus for the men, however, was that SPB should be practiced during specific long-term outdoor activities, like a field day, spending time at the beach or pool, or being out on the lake. Women indicated that daily sun protection should be practiced, but the consensus was that they did not follow those recommendations. Forgetfulness was a barrier for practicing, with both men and women indicating they bought sunscreen but did not bring it to practices or games because they forgot. The literature shows that forgetfulness is often a barrier for young adult athletes (Cohen et al., 2006). However, the women had a higher average intention score than men in the survey, indicated a stronger intention to practice SPB. This could be related to the women discussing opportunities decrease their forgetting their sunscreen, something the men did not discuss. Another factor was setting and weather concerns, especially heat, which often determined if SPB were practiced. The idea of weather factoring into SPB intention is seen in Hamant & Adams (2005) as well. For the short response question of "Why didn't you use sunscreen every day?" 6% of the comments NCAA athletes provided indicated they felt the weather made it unnecessary.

Attitudes toward Sun-Protective Behaviors

Whether attitudes toward SPB were positive or negative differed depending on the type of SPB being discussed, as well as the gender of the group discussing each practice. Both groups considered convenience and appearance when discussing a favorable or unfavorable opinion of SPB. Appearance motivators, convenience, and positive opinions surrounding tanning have been found in studies with young adults and adolescents previously (Cohen et al., 2006; Abroms et al., 2003). Hamant & Adams (2005) found that barriers to sunscreen use of surveyed NCAA athletes focused around inconvenience and inaccessibility, with positive views of tanning and seeing sunscreen use as meant for other locations, like the beach, as other factors.

Men felt that sunscreen was convenient in spray form, but that even the lotion could be used in some small way if that was all that was available. Appearance was also less of a factor for them, with most indicating that tan lines were a fact of life in tennis, and that using or not using sunscreen for them made little difference. The sunscreen was seen as a protective factor against future health or playing issues, rather than an appearance help or hindrance. These factors may relate to why men had a higher average instrumental attitude score than the women, indicating a more positive attitude toward using SPB, as they had fewer factors that may shift them toward an unfavorable position on SPB. The women, on the other hand, indicated that a tanned appearance was still valued, and many of them discussed their attempts to remain tanned throughout the season, similar to findings from Cafri et al. (2008).

Many of the women indicated that most types of SPB were inconvenient depending on the setting, with sunscreen (lotion and spray) and long sleeves affecting

their ability to play in match settings. Appearance worked both for and against SPB for most of the women, with some indicating that they use sunscreen to avoid “tennis tan” while others did not use sunscreen in an attempt to tan. This was based around the context as well, with women reporting more sunscreen use in matches (three women used sunscreen in their most recent match) versus their most recent practice, where only one woman reported sunscreen use. Appearance as a major factor for SPB is seen in qualitative literature related to young adult women and SPB as well (Abroms et al., 2003). Ability to play was valued above sun protection for the women, usually relating to issues holding the racquet with sunscreen on their hands, or to long sleeves making play difficult. Previous literature found young adults did not wear protective clothing, like long sleeves, due to comfort (Cohen et al., 2006), but these women seemed to relate unfavorable attitudes more toward athletic ability versus comfort.

Interestingly, these athletes do not seem to follow the preventative and reactive gender differentiation found in Abroms et al. (2003). That study found that women were more preventative in their style of sunscreen use, while men were more reactive. For these focus groups, both discussed increasing SPB in reaction to the burns of themselves and others. However, these women seemed to favor a more reactive attitude toward sun protection, with the majority adopting SPB only after they had been sun burnt for that season. For the men who practiced SPB, they agreed that while getting or seeing a burn can jumpstart behavior, they usually followed a specific routine for sun protection prior to the burns, indicating a more preventative attitude. This finding fits with literature surrounding health behaviors of adolescents and young adults, and the difficulty they have in connecting current behavior with long-term consequences (Abroms et al., 2003).

This may indicate that interventions should seek to create teachable moments around sunburn, to connect that behavior with long-term health effects.

SPB were seen as favorable when considering them in the context of pain and avoiding future sunburns. Both men and women agreed that once a sunburn occurred, SPB were considered more positively compared to before the burn. This belief is seen in Grunfeld (2004) as well, with athletes who worried about burns indicating more sunscreen use overall. For the athletes in the current study, this process started every season, with a bad burn for the individual or a teammate indicating that SPB were now necessary to prevent future pain.

Subjective Norms of Sun-Protective Behaviors

Both groups felt similarly concerning the future concerns for skin cancer, indicating that they are a concern, especially with their knowledge of their coach and a former teammate's histories. However, the consensus between groups was that it is difficult to consider outcomes that occur so many years down the road, even with the knowledge that it can happen sooner, i.e. their teammate. Both teams felt that no one would be against their practicing SPB in any context, but the men cited a lack of social acceptability of SPB, and women discussed that teammates may feel differently if their play was affected by certain kinds of SPB. The men discussed the difficulties inherent in trying to create a team SPB routine, stating that SPB of any kind was an individual choice. These discussions are echoed in the subjective norms scores from the survey, with the men indicating a less supportive norm for SPB from teammates and coaches. However, more targeted interventions for increasing support for those norms could affect

this norm. Previous literature indicates that more research is needed to understand these specific norms and barriers, in order to create more targeted interventions (Wiggs, 2007).

The women provided an example of a shifting norm within their team culture, indicating that a shift is possible. Only a few participants had used tanning beds in the past, and those who had were no longer using them due to their former teammate's diagnosis. The consensus for these women is now that tanning beds provide a too intense exposure to sunlight, and that the tanned appearance in a shorter time is not worth the possible future health concerns. The literature indicates that tanning beds as a normative form of sun exposure for women is still widespread (Buller et al., 2011) similar to the descriptions the women provide from high school.

The health behaviors practiced by their family or culture, their peers and coaches, and others were discussed by the participants as related to their future concerns and current behaviors. Both groups agreed that parents are often the drivers of SPB throughout their lives before college, and that the lack of parental oversight has led to a decrease in the number of SPB that they practice, a finding supported in the literature (Abroms et al, 2003). While at college, both groups agreed that peers and coaches were the main drivers for SPB, both in the sense of seeing the behaviors more often as well as their active support of those behaviors in others. Even participants who had no interest in practicing any sort of SPB were more likely to use sunscreen if offered by a peer or coach. This finding is not seen in the literature for men specifically, but Cafri et al. (2008) indicates that women are influenced by socio-cultural factors like peer norms, which may support this finding.

Part of this subjective norm surrounding SPB also involved the use of SPB by others, like intercollegiate teams they played against, or professional athletes. Interestingly, the women did not identify any significant practices of other teams supporting SPB, while the men agreed that at tournaments and matches they often saw other teams actively using sunscreen and other SPB. This could be due to different reasons; the men overestimating the use of SPB by others, the possibility that other men's teams use SPB more often, but that the other women's teams do not, or that the women do not recognize the SPB of others, unless actively practicing them. Overall, however, the consensus between the groups remained that seeing others use SPB as the norm was not enough to move from intending to practice SPB to actually using SPB routinely.

Perceived Behavioral Control over Sun-Protective Behaviors

Perceived behavioral control was broken into two factors by the participants, individual-level control and institutional-level control. Acknowledging the different levels of influence athletes' face in practicing SPB is important. While studying lifeguards, Glanz et al. (2002) indicated that individual and setting-level factors often effected the implementation of the Pool Cool interventions. In the current study, the men overwhelmingly felt that there was no reason not to be able to practice SPB, unless cost became an issue. It was seen as an individual practice that could be maintained easily with items like sunscreen or a hat. While the women agreed that SPB were individually based, they felt that there were barriers in place that made practicing SPB, at times, difficult and inconvenient. Women pointed to institutional-level issues, like the rules within matches concerning breaks and leaving the court, as well as the uniforms they wear to play, as factors that lowered SPB use at matches. These issues are echoed in the

survey, with women indicating SPB was, on average, more difficult and less under their control than the men indicated. This belief may be due to these institutional-level factors, indicating that interventions need to focus on understanding and overcoming these barriers.

Perceived behavioral control over SPB was often linked to routines by the athletes, and discussions surrounding remembering to use SPB. Both women and men agreed that having sunscreen available was a big determiner of whether they used it or not. Type of sunscreen factored into this as well, but the majority felt that having any option available was better than nothing being provided. Having sunscreen available in college athletic centers has been indicated as a possible intervention technique, but has not been tested (Hamant & Adams, 2005).

Both groups also agreed that beginning the season in the fall made developing routines more difficult, as they associated heat and excess sunlight with the appropriate time to begin using SPB, as opposed to using SPB daily. These changing routines added to forgetfulness and lack of SPB use for these athletes, with forgetfulness identified in the literature as a barrier for consistent SPB use by athletes (Hamant & Adams, 2005). The Theory of Planned Behavior asserts that if perceived behavioral control is strong enough for an individual that it can lead straight to a health behavior, and will be less influenced by the other constructs, or even intention (Ajzen, 1991). It is possible that introducing routine building into interventions in the future may be a strong enough control factor that athletes will practice SPB more often without being affected by the attitudes, norms, or even the intention of others.

Context for Sun-Protective Behaviors

Running throughout each of the themes described is the idea of context having an effect on when athletes practice specific SPB. Context was discussed in three ways among the participants, concerning the physical location where sun exposure occurred, the way sun exposure was received and how intense that exposure is considered, and what other behaviors are prioritized over SPB. Both groups reported that SPB were more likely to occur in settings other than those related to practices or games, like the beach or pool, because it was necessary. This idea of need and context indicates that interventions need to focus on other settings outside of practices or games, as young adult in general have high rates of sun exposure due to appearance and tanning motivators, and athletes have even higher rates than non-athlete peers in this age group (Abroms et al, 2003; Cohen et al, 2006; Berndt et al., 2011). Weather concerns were also discussed; the women compared cloudy days and cold days as times when sunscreen is not considered, and any other SPB are by-products of the setting, not meant as protective behaviors. This setting directly affected their intentions to practice SPB, and makes creating routines more difficult overall. Weather is indicated as a factor for use in the literature as well (Hamant & Adams, 2005).

Context also related to the intensity of the sun exposure being received. Both groups agreed that tanning beds were a very intense way to receive sunlight, and therefore bad for your skin. The beach and pool were also seen as problematic without SPB, because the lack of movement and activity. The men agreed that the movement on the court during a match meant less intense exposure to sunlight on the entire body, with switching sides and breaks throughout. For practice and matches, sun exposure was seen

as a by-product of their time on the court, instead of an active concern to think about. This was mentioned by both men and women. While men reached a consensus that SPB is an individual concern and there are no insurmountable barriers to practicing it when needed, the women discussed prioritizing other concerns over SPB. Overall, there are a number of factors that relate to intention and behavior for limiting sun exposure in these intercollegiate student athletes.

Limitations

Due to the qualitative nature of the study, and the small convenience sample collected, a limitation is that it cannot be generalized to a wider population. Only intercollegiate student athletes in the men's and women's tennis team participated, despite multiple attempts to engage other sports teams, so there is a possible selection bias. As such, those who chose to participate may be fundamentally different from those who did not. Two focus groups may not have been enough to reach theoretical saturation, all though major themes had similar findings between both groups. Typically it is recommended that two to three focus groups are conducted with the same type of participants.

Focus groups are a valuable method for collecting data about attitudes, norms, and perceived behavioral control over behaviors, but the method has its own limitations. Answers may have been affected by social desirability. While the groups were made up of teammates to keep the participants comfortable, they may have censored their responses to maintain their teammates' perceptions of them. Participants may have changed their responses based on the perceived expectations on the researcher as well. While the researcher discussed confidentiality in each focus group, as these athletes are

from one team in a small university, it is possible that their statements may be recognized by others, even though all obvious identifiers were removed.

Implications

This qualitative study generated important information to add to the literature available concerning how attitudes, subjective norms, and perceived behavioral control of sun-protective behaviors (SPB) for intercollegiate student athletes affect their intention to practice sun protection. This group is known to be at risk for skin cancer later in life due to their increased sun exposure, and with invasive melanoma as the third most common cancer diagnosed in 15-39 year olds (Weir et al., 2011), the need for targeted interventions is apparent. By introducing qualitative data, supported by the same theoretical framework that many sun exposure interventions employ, public health practitioners can work to create more targeted interventions for this at-risk group. This study also examines SPB besides only sunscreen use, capturing behaviors that are not always seen in studies that only focus on sunscreen use. Public health practitioners should expand the types of SPB being focused on in these interventions, so as not to miss an opportunity for increasing any type of SPB. The focus in interventions should also be highlighting consistent use of SPB when outdoors for more than one hour, to support the creation of routines that are not linked to setting or context.

These athletes had a wide range of knowledge about different types of SPB and when they should be practiced, indicating that future interventions can focus in on the variety of influences on intention and behavior. This study indicates that the varying contexts for behavior that athletes move through need to be considered while creating interventions. Strategies to adopt SPB in one context may not work in another context.

Athletes seem to accept SPB more readily outside of athletic settings, so examining the reasons behind this change could inform how to include athletic events on the list of places where SPB is necessary. Public health practitioners need to consider whether the behaviors they are attempting to introduce in their interventions are within the athletes' control to change. That may be why sunscreen has been a focus in the literature previously, but even sunscreen had barriers associated at an institutional level for some athletes. More targeted interventions specifically to college-age athletes have been called for in the literature for some time (Kasparian et al, 2009; Saraiya et al., 2004) and this study supplies some of the building blocks to continue to examine how a multitude of factors affect the SPB of intercollegiate student athletes. These data suggest intervention at the individual level to show the effects of sun exposure, regardless of context, and institutional level (e.g. game schedule, rules, etc.) may be warranted.

Coaches should be used within these interventions, as these athletes indicated that their coaches' health behaviors often influenced their own, and that advice from coaches was appreciated and respected. Research by Parrot, Duggan, Cremo, Eckles, Jones & Steiner (1999) indicated that integrating sun protection into existing athletic programs was possible through the coaches. For young adults, as peers play an important role in their health behaviors, using team captains can also be a way to introduce more normative and positive SPB to the team as a whole (Cafri et al., 2008). As sunburns were a large factor in intention and SPB for these athletes, interventions may also try to introduce coaches using sunburns as teachable moments for why SPB should be practiced before sunburns occur.

A final suggestion would be involving the athletes that public health practitioners are trying to reach in the creation of the intervention. While discussing these behaviors, both groups actively considered solutions for being more proactive in their SPB use. For example, the women discussed applying sunscreen for teammates that had to play when they had a break, or having a specific place or time for sunscreen during practice. The men discussed the coaches reminding the team as a whole about sunscreen, and possibly providing a spray option for those who forgot their own. By getting the athletes involved in the planning of the intervention, they may feel more responsible for their own health behaviors and work more diligently to implement the changes being suggested. This will also allow them to implement behaviors they feel can actively be carried out, by taking their context into consideration. Along with getting athletes involved, public health practitioners should create interventions that focus on implementing routines for SPB that begin before the summer months. These athletes indicated that often do not start practicing SPB until the heat and bright sun reminds them too, and by that point they have been practicing for months without SPB. Implementing routines before sun exposure becomes more intense may help to provide the athletes with feelings of more control over their own SPB, leading to more routine practice.

For future studies, the researcher believes that focus should continue on young adult and college-age populations, as they continue to report low levels of SPB and high levels of sun exposure. The Community Preventative Services Task Force maintains that there is insufficient evidence for sun protection interventions for this age group, and more targeted research may begin to fill in those gaps. For young adult athletes specifically, this study should be replicated and expanded on different athletic populations. A number

of specific contextual factors for tennis players came out in this study, meaning that targeted interventions may need targeted research into different types of sports.

Another facet needed is more research with coaches. Parrot et al. (1999) found that while coaches felt it was difficult to get youth to practice sun protection, that they were eager to discuss sun protection and looking for more information to give their athletes. While this study was run with youth between 8-14 years old and their soccer coaches, it provides evidence that coaches are concerned with the SPB of their athletes and for themselves (Parrot et al., 1999). Finally, while it was only mentioned in passing within the focus groups, future research may also need to explore SPB outside of times that athletes spend at practices and games and athletic groups where there are indoor games. While those athletes who are outdoors have may have more sport-related sun exposure, these athletes indicated that other teams who spent more time indoors may be practicing more negative sun exposure behaviors, like going to tanning beds and laying out, due to positive views of tanning and appearance motivators, similar to what the literature indicates for outdoor athletes (Cohen et al., 2006; Abroms et al., 2003). Overall, it is important to explore the attitudes, subjective norms, and perceived behavioral control over SPB among athletes due to exposure to the sun. These data yield valuable results to develop SPB interventions to reduce sunburns and subsequent skin cancer incidence.

Appendices

Appendix B: Focus Group Recruitment Handout**STUDENT ATHLETES!**

Interested in participating in a focus group talking about sun protection during practices and games?

You may qualify to participate if you...

- Currently play for a campus sports team
 - Must have men's and women's teams on campus
- Have been a member of the team for at least 3 months
- Are between 18-25 years old
- Can speak and read English fluently
- Have practices and/or games outside at least twice a week during the season
- Have some free time to talk about your thoughts about sun protection

FOCUS GROUPS WILL TAKE PLACE OVER THIS AND NEXT WEEKEND, ON [REDACTED] OR EMORY'S CAMPUS, LASTING ABOUT 2 HOURS.

FREE PIZZA AND SNACKS!

Contact **Kari** at kbanno2@emory.edu for more information!

Appendix C: Focus Group Recruitment Email to Coaches

Good morning,

My name is Kari Bannon, and I am an MPH student at Emory University. I have recently received permission from [REDACTED] ethics board as well as your Director of Athletics, [REDACTED] to conduct focus groups with undergraduate student athletes for my thesis project about sun protection (sunscreen, wearing protective clothing, etc). Skin cancer rates are directly linked to increased sun exposure, which student athletes often deal with without proper sun protection. As a former student athlete myself, I know I had problems remembering sun protection in the midst of practices, and would like to delve more deeply into why these issues occur for other athletes. If you would please forward the attached email and flyer to your athletes, so that they may participate if interested. These groups will not interfere with practices or games, and please feel free to contact me directly at kbanno2@emory.edu or 561-635-5965 if you have any further questions. Thank you very much for your assistance!

Sincerely,

Kari Bannon

Hello athletes!

Are you interested in being a part of a project concerning sun protection? Would you like to voice your thoughts about ways to better protect yourself? My name is Kari Bannon, and I am working on my Master's thesis project concerning the attitudes and beliefs undergraduate student athletes have about sun protection. Your participation would entail a one-time group discussion and survey with other athletes, lasting approximately two hours on either [REDACTED] or Emory's campus.

There can be up to 8 people per group, so make sure to tell your teammates and friends to join you! In order to participate, you must:

- Be between 18-25 years old
- Currently play for a team on campus that has both men's and women's options
- Have been on the team for at least 3 months
- Can read and speak English fluently
- Have practices or games outside at least twice a week (during season)

This can include work-outs outside of official practice time during the week, as long as they are outdoors

Snacks will be provided!!! (See attached flyer)

If you are interested in voicing your thoughts or would like more information please contact me at kbanno2@emory.edu or 561-635-5965. Please include 2-3 days and times that you would be able to attend a group meeting as well, weekdays and weekends!

Thank you for your input!

Kari Bannon

Appendix D: Focus Group Participant Informed Consent

Emory University
Consent to be a Research Subject

Title: An exploration of sun-protective behaviors in student athletes

Principal Investigator: KariBannon, MPH Candidate, Department of Behavioral Sciences and Health Education

Advisor: Eric Nehl, PhD, Department of Behavioral Sciences and Health Education

Introduction

You are being asked to be in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. **It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study.**

Before making your decision:

- Please carefully read this form or have it read to you
- Please ask questions about anything that is not clear

You can take a copy of this consent form, to keep. Feel free to take your time thinking about whether you would like to participate. By signing this form you will not give up any legal rights.

Study Overview

The purpose of this study is to examine the attitudes, norms and believed control held by student athletes concerning sun-protective behaviors (sunscreen use over SPF 15, seeking shade, avoiding peak hours, wearing protective clothing) both during and outside of athletic activities. It is possible that what we learn here may help to inform future interventions targeted toward student athletes to reduce sun exposure. You are being asked to participate because we are seeking undergraduate student athletes who have at least two (2) practices and/or games outside per week.

Procedures

You are being asked to take part in a qualitative research project that looks at the attitudes and beliefs you have concerning your use of sun-protective behaviors in an athletic setting (practices/games) as well as in non-athletic settings. You are being asked to be part of a focus group of no more than 10 people, where you will fill out a short questionnaire concerning current sun-protective behaviors you practice. The time for participation will be approximately two hours.

Risks and Discomforts

This study will include discussions surrounding what may be sensitive topics for some, including discussions about personal or family skin cancer history. You are free to not participate any part of the discussion that you are not comfortable with. There may be other risks or discomforts that are not yet known. You are free to discontinue enrollment from the study at any time.

Study No.: IRB00063123

Emory University IRB
IRB use only

Document Approved On: **12/17/2012**
Project Approval Expires On: **12/17/2013**

Benefits

This study is not designed to benefit you directly. This study is designed to learn more about attitudes and behaviors surrounding sun-protective behaviors. The study results may be used to help others in the future.

Compensation

You will not be offered payment for being in this study.

Confidentiality

Certain offices and people other than the researchers may look at study records. Government agencies and Emory employees overseeing proper study conduct may look at your study records. These offices include the Emory Institutional Review Board and the Emory Office of Research Compliance. Emory will keep any research records we create private to the extent we are required to do so by law. A study number rather than your name will be used on study records wherever possible. Your name and other facts that might point to you will not appear when we present this study or publish its results.

Study records can be opened by court order. They may also be produced in response to a subpoena or a request for production of documents.

Voluntary Participation and Withdrawal from the Study

You have the right to leave a study at any time without penalty. You may refuse to do any procedures you do not feel comfortable with, or answer any questions that you do not wish to answer. If you choose to withdraw from the study you may also request that any information you have given not be used.

Contact Information

Contact Kari Bannon at 561-635-5965 or kari.ann.bannon@emory.edu:

- if you have any questions about this study or your part in it,
- or if you have questions, concerns or complaints about the research

Contact the Emory Institutional Review Board at 404-712-0720 or irb@emory.edu:

- if you have questions about your rights as a research participant.
- if you have questions, concerns or complaints about the research.
- You may also let the IRB know about your experience as a research participant through our Research Participant Survey at <http://www.surveymonkey.com/s/6ZDMW75>.

Study No.: IRB00063123

Emory University IRB
IRB use onlyDocument Approved On: **12/17/2012**
Project Approval Expires On: **12/17/2013****Consent**

Please, print your name and sign below if you agree to be in this study. By signing this consent form, you will not give up any of your legal rights. We will give you a copy of the signed consent, to keep.

Name of Subject

Signature of Subject
Time

Date

Signature of Person Conducting Informed Consent Discussion
Time

Date

Appendix E: Focus Group Guide

Focus Group Guide

I would like to thank all of you from coming today, my name is Kari. This is my research assistant, Anne Marie, she will be taking notes for me but not participating in the discussion.

Over the next couple of weeks I will be conducting group discussions with male and female student athletes as part of a project concerning sun-protective behaviors that student athletes practice both during and outside of practices or games. By sun-protective behaviors I mean using sunscreen of at least SPF 15 and re-applying, wearing protective clothing, like long sleeves or pants, avoiding the peak hours of the sun, and seeking shade when possible. I feel that the best way to improve these behaviors is by talking to you all about your experiences and opinions.

Let me explain how I will conduct the group discussion today. As I said before, your participation in the group is completely voluntary, so if you prefer not to be a part of the discussion you are free to leave. However I do value your opinions and hope that you will stay and share your views. Anything we discuss today will be confidential and used only for this research project. There is no right or wrong answer in this discussion, I am simply asking for your own experiences and opinions, so please feel comfortable to say what you really think. I would like to hear as many different points of view as possible, so feel free to disagree with someone else and share your view, but please still be respectful of others' views. We will not be going around the room, just join in when you have something to say or want to respond to someone else's viewpoint, but it is also important that only one person talks at a time so that I don't miss anything on the recording. I would like to record the discussion today so that I don't miss anything that is said and can get your views exactly. Please don't be concerned about this, our discussion will be completely confidential; we will remove names from the transcriptions, the information will only be used for this project and the recording will be securely stored so that no one else can access it. Is it OK with everyone to record this discussion? (Check all that consent). This discussion will probably last about two hours or so. Are there any questions before we start?

Introduction Questions

As an introduction, let's go around so that you can introduce yourselves, and tell us about what your favorite sport was growing up and why.

What are some reasons why you became involved in sports?

TOPIC 1 Sun-protective behaviors

As I said earlier, much of our discussion today will focus around sun-protective behaviors. When should someone practice SPB during an average day? (probe: sunscreen, wearing long sleeves or pants)

What are some reasons why someone may attempt to practice SPB routinely during the day but don't/can't (probe: time constraints, other priorities?)

TOPIC 2 Intentions of SPB

How likely are you to practice SPB during practices or games? Why?

How likely is it that an athlete can use SPB in this context? How unlikely is it that an athlete can use SPB in this context?

TOPIC 3 Attitudes about SPB

How do you all feel about the idea of SPB? (probe: what do you like/dislike about SPB?)
What are some advantages of athletes using SPB during practice/games? (probe: what benefits might result?)

What are some disadvantages of athletes using SPB during practice/games? (probe: what negative effects might result?)

What are some values associated with SPB for athletes? (probe: what is good or bad about SPB in this context?)

TOPIC 4 Subjective norms of SPB

How do most athletes feel about SPB? (probe: it is necessary/unnecessary, useful, problematic?)

Who would support your practicing SPB in the context of practices/games? (probe: would your teammates? Coaches? Friends or family?)

Who would be against your practicing SPB in this context?

TOPIC 5 Perceived behavioral control of SPB

How much control do athletes feel they have over their own SPB in athletic settings? (probe: does this depend on the specific SPB?)

What makes practicing SPB easy for an athlete? (probe: do you have a support system?)

What makes practicing SPB difficult for an athlete? (probe: do you have the time/resources?)

Appendix F: Focus Group Questionnaire

An Exploration of Sun-Protective Behaviors and Student Athletes

How old are you? (Fill in the blank) _____

Please indicate the gender you identify with:

- Male
- Female

Which ethnicity do you most identify with? (Check all that apply)

- White (Non-Hispanic)
- Black/African American (Non-Hispanic)
- Hispanic
- Asian/Pacific Islander
- Native American/Alaskan Native
- Other (please specify)_____

Is there a history of skin cancer for you or in your family? (Check all that apply)

- Yes, a personal history
- Yes, first degree relative (mother, father, sister, brother)
- Yes, extended family (grandparents, aunts, uncles)
- No, no personal or family history
- I don't know

What school-sponsored sports teams are you currently on? (Fill in the blank)

How many years have you played this sport? (Fill in the blank) _____

Do you have practices or games outside at least twice a week during the season?

- Yes
- No

For the remainder of the survey, questions will be asked regarding sun-protective behaviors (SPB). These are defined as sunscreen use of at least 15 SPF or higher, wearing long pants or sleeves outdoors, seeking shade while outdoors, and avoiding the sun between the hours of 10:00am and 3:00pm, unless otherwise defined within the question.

Do you believe that sun-protective behaviors are important to think about every day?

- Yes
- No

Did you use at least one (1) of the sun-protective behaviors defined previously in your most recent outdoor practice?

- Yes
 No

Did you use at least one (1) of the sun-protective behaviors defined previously in your most recent outdoor game?

- Yes
 No

This section examines the likelihood that you will practice sun-protective behaviors (SPB) in a variety of settings. Please circle the response choice that most closely represents your attitudes surrounding SPB.

How likely are you to:	Very Unlikely	Unlikely	Neither Likely nor Unlikely	Likely	Very Likely
Wear sunscreen during practices of games?	1	2	3	4	5
Wear sunscreen at the pool or beach?	1	2	3	4	5
Wear sunscreen anytime you are outdoors for more than one hour?	1	2	3	4	5
Reapply sunscreen after 90 minutes of sun exposure?	1	2	3	4	5
Practice SPB other than sunscreen use?	1	2	3	4	5
Believe practicing SPB will protect you from sunburns?	1	2	3	4	5

When you are outside for more than one hour, how often do you wear sunscreen with an SPF of 15 or higher?

- A. Never
 B. Rarely
 C. Sometimes
 D. Most of the time
 E. Always

When you are outside for more than one hour, how often do you wear protective clothing (long sleeves, hat, etc)?

- A. Never
 B. Rarely

- C. Sometimes
- D. Most of the time
- E. Always

When you are outside for more than one hour, how often do seek out shade?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

How often do you avoid being outside between 10:00am and 3:00pm?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

During the past 12 months, how many times did you use an indoor tanning device such as a sunlamp, sunbed, or tanning booth? (Do **not** count getting a spray-on tan)

- A. 0 times
- B. 1 or 2 times
- C. 3 to 9 times
- D. 10 to 19 times
- E. 20 to 39 times
- F. 40 or more times

During the past 12 months, how many times have you gotten a sunburn during an outdoor practice or game?

- A. 0 times
- B. 1 or 2 times
- C. 3 to 9 times
- D. 10 to 19 times
- E. 20 to 39 times
- F. 40 or more times

When you are outside for more than one hour, how often does your coach talk about sunscreen use?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

When you are outside for more than one hour, how often does your coach talk about other SPB?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

Is sunscreen available to buy on campus?

- Yes
- No
- I don't know

Does your university provide sunscreen to student athletes?

- Yes
- No
- I don't know

This section examines the amount of control you feel you have over sun-protective behaviors (SPB) in athletic settings. Please circle the number on the continuum provided for the response most appropriate to your feelings concerning SPB.

Example: I believe that dogs are Messy : 1 : 2 : 3 : 4 : 5 : Clean

Sun-protective behaviors during practices and/or games are:

Under my control : 1 : 2 : 3 : 4 : 5 : Not under my control

Easy : 1 : 2 : 3 : 4 : 5 : Difficult

Not time consuming : 1 : 2 : 3 : 4 : 5 : Time consuming

This section details feelings other athletes may have concerning sun-protective behaviors (SPB). Please circle the response that most closely represents your thoughts concerning the prompts listed.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Most athletes on my team wear sunscreen during outside practices.	1	2	3	4	5
Most athletes in my sport wear sunscreen during outside games.	1	2	3	4	5
Wearing long sleeves during practice would be difficult.	1	2	3	4	5
My coach would not approve of using sunscreen during practices or games.	1	2	3	4	5
My coach would not approve of wearing long sleeves during practices.	1	2	3	4	5
My friends and family would want me protect myself from the sun during practices or games.	1	2	3	4	5
My teammates would approve of my using sunscreen during practices or games.	1	2	3	4	5
My teammates would approve of my wearing long sleeves during practices.	1	2	3	4	5
I believe SPB will protect me from sunburns.	1	2	3	4	5
I believe SPB will help protect me from skin cancer.	1	2	3	4	5

Thank you for participating!!!

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