

OCCUPATIONAL SOLAR EXPOSURE AT SUMMER CAMP

A Thesis

Presented

to the Faculty of

California State University, Chico

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Recreation Administration

by

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Fall 2019

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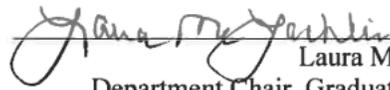
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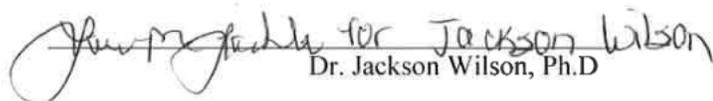
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DEDICATION

To “Chrissy Cricket,” my first camp counselor, who made me fall in love with the magic of summer camp.

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ABSTRACT

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Summer camps in the US gross more than \$18 billion in revenue while providing over 14,000 individual programs. Summer camp counselors, like other outdoor workers, are at risk of occupational solar exposure. Occupational solar exposure increases an individual's lifetime accumulation of solar radiation, leading to skin damage and higher rates of skin cancer. This study fills a gap in the research about the sun protection behaviors of summer camp counselors and their attitude towards provision of sun protection for themselves and the campers in their care. Counselors' usage of sun protection measures were found to be inadequate. Most counselors were either unprotected or under-protected from occupational solar exposure. Female counselors were significantly more likely to use sun protection measures and reported a higher desire to protect themselves and their campers from solar exposure. Counselors who used sun protection measures for themselves were significantly more likely to feel responsibility for protecting their campers from solar exposure. These findings suggest that summer camps are not adequately protecting their staff from occupational solar exposure. This leads to the conclusion that the Occupational Safety and Health Administration is failing to hold summer camps

accountable to protect this group of employees from a known workplace hazard. The findings have implications for hiring, training, and risk management practices at summer camps.

CHAPTER I

INTRODUCTION

In the United States, summer camp is an \$18 billion industry; with over 14,000 individual summer camp programs across the country (American Camp Association, n.d.). While summer camps offer a program engaged in enriching a child's life, they also offer their staff a unique work experience. Being a camp counselor offers staff the opportunity to develop professional skills; such as being a team player, learning to take initiative, organization, and responsibility (American Camp Association, 2000). In the United States, there are more than 1.5 million summer camp staff employed to work in varying positions (American Camp Association, n.d.). A hallmark of summer camps, in contrast to spending time in a classroom during the school year, is getting children to spend time outdoors.

Meanwhile, skin cancer is the most common cancer in the United States (Guy et al., 2015). An estimated 9,500 cases of skin cancer are diagnosed in America daily (Rodgers et al., 2015). Solar related injuries accounted for 34,000 U.S emergency department visits, with an estimated cost of \$11.2 million (Guy et al., 2015). Skin cancer has an annual treatment cost of \$8.1 billion (Guy et al., 2017). Exposure to ultraviolet light, such as that from the sun, is a risk factor for all forms of skin cancer (American Cancer Society, 2019).

Statement of the Problem

Outdoor workers, including many summer camp staff, are at an increased risk of solar exposure; with a majority of skin cancer cases being attributed to UV radiation from the sun.

Background and Need

There is no known research on the specific topic of occupational solar exposure at summer camps. There is a bountiful amount of research on skin cancer, the effects of solar exposure, and solar protection; and limited research on occupational solar exposure of other fields. Occupational solar exposure has been linked to and poses a “substantial and robust risk factor” for increased rates of certain types of skin cancer (Diepgen et al., 2012). This research hoped to create a better understanding of sun protection behaviors of summer camp counselors, and the responsibility of sun protection at camp. Information gathered can be used to create a safer working environment for camp counselors and protect from further solar related skin damage.

Purpose of the Study

The purpose of this survey was to study the usage characteristics and attitudes of sun protection behaviors of summer camp counselors, and the responsibility of sun protection at summer camps. The information gained can be used to improve sun protection at summer camps, thereby reducing the risk of solar related skin damage and skin cancer among summer camp counselors.

Research Questions

This research hopes to create a better understanding and potentially answer the following questions:

1. What are the solar protection behaviors of summer camp counselors?
2. What are summer camp counselors’ reasons behind their solar protection behaviors?

3. What are the attitudes of summer camp counselors towards the responsibility of solar protection in regards to their campers and themselves?

Within this, the researcher hypothesizes that camp counselors are not following proper protocol in order to protect themselves from occupational solar exposure. This may be due to a number of reasons, such as lack of awareness, ability, workplace environment, or not seriously acknowledging the risks. Furthermore, it is hypothesized that counselors are less likely to take solar protection measures for themselves than for their campers.

Ethical Considerations

The survey in this study was created using ethical guidelines and policies from the Institutional Review Board at California State University, Chico. As there were no expected physical or mental risks for survey participants, the survey was approved as Exempt from Full Board Review, seen in Appendix A. All survey participants were provided with an informed consent, seen in Appendix B.

In Chapter 2, the literature review will discuss what summer camps are and the camp counselors that work at them, solar exposure and the risk of skin damage and cancer, occupational solar exposure, the US Occupational Safety and Health Administration, and how individuals can protect themselves from solar exposure.

CHAPTER II

LITERATURE REVIEW

Introduction

Outdoor workers, including summer camp counselors, are at an increased risk of skin damage and developing skin cancer due to solar exposure. Given the current frequency of skin cancer, the occupational solar exposure of camp counselors is an important topic of research. Research that could reduce risk is needed to supplement the current paucity of research on the topic. The topics included counselor's solar protection behaviors, the reasons behind those behaviors, and their understanding of their responsibility for solar protection at summer camp. This literature review includes information about the summer camp industry, composition of summer camp counselors, solar exposure and the risk of skin cancer, and proven solar protection methods. In addition, it includes a review of occupational solar exposure research and information from the Occupational Safety and Health Administration on solar protection.

Summer Camps and Summer Camp Counselors

Summer camps offer children many benefits, such as social skills development, self-respect and character building, and community living and service skills (American Camp Association, n.d.). A study conducted by the American Camp Association reported that 96% of campers said camp helped them to make new friends, 93% said camp helped them to get to know other children who are different from themselves, 92% said camp helped them feel good about themselves, and 74% said that camp helped them to try new things (American Camp Association, n.d.). In a survey of ACA accredited summer camps, approximately over 70% of

the campers reported are White, followed by 9% Black or African American, 6% Hispanic, 4% Asian, 4% multi-racial, and 3% other. Summer camps in the same survey reported a majority of campers are females, at 57% of the population. Gender options outside of male and female were not reported. It was also revealed a large majority of their campers came from middle or high-income families, though those from low-income and poverty level families are still represented at 16% and 13%, respectively (American Camp Association, 2015).

A survey of American Camp Association accredited camps reported 31% of camps had at least 50 staff and 16% had fewer than 25 staff members. Most (60%) of the summer camps in the survey reported that at least half of their staff had served for more than one season. About half (49%) of camps had at least one international staff member and 25% had more than 10 international staff.

Solar Skin Damage and Skin Cancer

In the United States, one in five American's will develop skin cancer by the age of 70 (Stern, 2007). Melanomas of the skin are the sixth most common form of cancer, surpassed by uterine cancers, colon and rectum cancers, lung and bronchus cancers, prostate cancers, and female breast cancers (Center for Disease Control, 2018). Including all skin cancers, there are more new cases of skin cancer than female breast, prostate, lung, and colon cancers combined (American Cancer Society, 2019).

Skin cancer is, like many cancers, an abnormal growth of cells; and in skin cancer this occurs on the skin (American Academy of Dermatology Association, 2018). There are multiple types of skin cancer. Actinic Keratoses are precancerous growths that usually occur in people with fair skin and develop after years of sun exposure. Typically, they are found on parts of that body that gets the most solar exposure, such as the head, neck, hands, and forearms (American

Academy of Dermatology Association, 2018). Basal cell carcinoma, or BCC, frequently develop in individuals with fair skin but can also occur in those with darker complexions. BCC also occurs after years of sun exposure, and while common on the head, neck, and arms, can form anywhere on the body. Basal cell carcinoma is the most common form of skin cancer (Craythorne & Al-Niami, 2017). Squamous cell carcinoma, or SCC, is the second most common type of skin cancer and frequently develop in individuals with fair skin but can also occur in those with darker complexions. SCC tends to form on skin that gets frequent solar exposure, such as the ears, face, neck, arms, chest, and back. The last form of skin cancer is Melanoma, which is the deadliest form on skin cancer. This typically occurs in an existing mole, or a new dark spot on the skin (American Academy of Dermatology, 2018). The rates of Melanoma are “dramatically increasing” (Craythorne & Al-Niami, 2017). Other types of skin tumors include Kaposi’s sarcoma, merkel-cell carcinoma, and cutaneous t-cell lymphoma. All types of skin cancer share similar risk factors, such as skin that burns easily, light hair, excessive sun exposure, and a history of skin cancer (American Cancer Society, 2017).

Multiple studies and medical organizations have concluded that UV radiation, delivered through sunlight or tanning beds, is the main risk factor for developing skin cancer (Craythorne & Al-Niami, 2017). UV radiation, specifically, has been noted as a risk factor for all types of skin cancer (American Cancer Society, 2019). UV radiation in sunlight has been described as “the most prominent and ubiquitous physical carcinogen in our natural environment (de Gruijl, 1999). Due to its damaging qualities, UV radiation is also classified as a complete carcinogen, meaning it has the ability to be “both a tumor initiator and a tumor promoter.” (D’Orazio et al., 2017). When skin is exposed to UV radiation through solar exposure, DNA, proteins, and lipids in the skin absorb the UV radiation, and creates skin damage, which can potentially lead to the

development of skin cancer (Matsumura, Y. & Ananthaswamy, H. N., 2004). Estimates show that 65% of melanoma and 90% of non-melanoma skin cancers are associated with UV exposure (Kim, I. & He, Y., 2014).

Additionally, the reduction of stratospheric ozone is causing greater levels of UV radiation (Henricksen et al, 1990). Due to with a reduction in stratospheric ozone, it is expected that more UV radiation will enter earth's atmosphere than before, effectively increasing the risk of solar exposure (Henricksen et al., 1990). There is a global increase in rates of skin cancer, potentially due to the depletion of ozone levels and atmospheric losses, as more solar radiation is reaching Earth's surface (World Health Organization, 2019).

Occupational Solar Exposure

There are several studies that focus on occupational solar exposure, though none specifically on summer camps staff. Studies have directly linked occupational solar exposure to higher risks of certain forms of skin cancer (Fartasch et al., 2012). Outdoor workers, including summer camp counselors, may be exposed to six to eight times more UV radiation than indoor workers (Holman et al., 1983). The outdoor work environment “intrinsically constitutes a health hazard” (Girgis et al., 1994). As summer camp work takes place during the summer months, UV rays are typically at their strongest (American Cancer Society, 2019). It is important to note that although no studies have directly linked occupational solar exposure to melanoma, the deadliest form of skin cancer which accounts for less than 1% of all skin cancers, most melanomas can be attributed to sun damage (Parkin et al, 2011).

One study showed that outdoor workers' sun protection behaviors are mostly inadequate to properly protect themselves (Reinart et al, 2013). A study of Irish outdoor workers found that less than 10% of participants had received training on solar protection behaviors and the risk of

their outdoor work (Cetintepe et al, 2018). A survey of lifeguard's exposure via UV sensitive wristbands found that 74% of lifeguards received above the recommended limit of exposure, and 65% received enough exposure to create a sunburn (Gies et al, 2009). Overall, occupational solar exposure largely contributes to an individual's overall lifetime UV dose, further purporting that it's such a large risk that it "supports the recognition as an occupational disease" (Milon et al., 2013). A German study conclusively demonstrated the association of occupational solar exposure and higher rates of certain forms of skin cancer, recommending that "persons with high occupational exposure to UV radiation should be reported as an occupational disease," and that preventative measures are "urgently needed" for those working in situations with high occupational solar exposure (Fartasch et al, 2012).

Occupational Safety and Health Administration and Solar Protection

While there is a clear link between occupational solar exposure and rates of skin cancer, it is hardly recognized as an occupational hazard. The United States' Occupational Safety and Health Administration has no explicit regulations that require employers to ensure staff stay protected from solar exposure. OSHA was created to "assure safe and healthful working conditions for working men and women by setting and enforcing standards by providing training, outreach, education, and assistance" (Occupational Safety and Health Administration, n.d.). In an open "interpretation letter" posted to the OSHA website, Richard E. Fairfax, the Acting Director, provided clarification on the relationship between OSHA and workers solar exposure. He states that employers are required "to provide their employees overexposed to the sun's radiation with protective equipment" (Fairfax, 1998), but also notes that overexposure can be hard to define and establish. If a hazard were to need intervening, it would need to have the potential to "cause death or serious physical harm" (Occupational Safety and Health Administration, n.d.).

The important thing to note is that, while we may not be able to establish the terms of overexposure, we can prevent it in the first place. The OSHA website states that health hazards include physical hazards, specifically mentioning radiation (Occupational Safety and Health Administration, n.d.). Solar exposure in the workplace is exposure to UV radiation. Regarding hazard prevention and control, it is mentioned that it is important for employers to “provide workers with safe and healthful working conditions,” and that “employers must work to reduce or minimize hazards in the workplace and train employees how to work safely on the job” (Occupational Safety and Health Administration, n.d.).

If it is established that radiation is a health hazard, that employers must provide employees with a safe and healthful environment, and that employers must train employees properly to be safe, there is justifiable reason to believe that employers should be required to train staff on the risks of occupational solar exposure. This would also include providing personal protective equipment, or PPE, in the form of sunscreen or solar protective clothing, to ensure staff have the ability to remain safe in the workplace, and that employers are protecting their staff.

Solar Protection

With solar exposure being the largest influence on skin cancer, it's important for individuals to protect themselves and prevent damage. The American Academy of Dermatology Association has many recommendations when it comes to protecting one's skin from solar exposure and skin cancer (American Academy of Dermatology Association, 2018). First, they recommend avoiding sunlight when the UV rays are their strongest, typically between 10:00AM and 2:00PM. A tip provided by the American Academy of Dermatology Association is that if your shadow is shorter than yourself, you should get out of the sunlight. Secondly, they

recommend wear sun protective clothing. This can include hats/visors, long sleeved shirts or sun sleeves, pants, sunglasses, or even parasols or “sunbrellas”. Third, it is important to be vigilant of your surroundings, as water, snow, and sand can all reflect UV rays and increase the risk of sun damage. Lastly, individuals should generously apply broad-spectrum sunscreen with a sun protectant factor (SPF) of at least 30. Broad-spectrum sunscreens offer protection from other ultraviolet A (UVA) and ultraviolet B (UVB) rays. Sunscreen should be applied daily when you are outside, regardless of the weather, as UV rays penetrate through clouds. Sunscreen should be applied to all exposed skin, which for most adults, typically requires around one ounce of sunscreen. It is also important to reapply sunscreen every two hours, and always after any water-based activities or sweating, which can remove sunscreen and lessen the efficacy.

Despite skin cancers commonality, UV exposure is one of the most preventable risk factors (Saraiya et al., 2003). When we consider that 90% of non-melanomas are due to UV exposure, we can conclude that most cases of skin cancer are preventable. Of U.S. youth, less than one-third practices effective solar protection (Cokkinides et al., 2001), and of surveyed adults, the median quantity of sunscreen amounted to less than half of the amount needed to reach the SPF on the label (Neale et al., 2002).

Research has shown that different groups of people have different approaches to sun protection, if any at all. Traditional American gender roles and expectations impact the use of sun protection in Americans, as females “received more encouragement from their mothers and peers” than their male counterparts; leading females to use preventative measures of sunscreen use compared to males, who are reactive to damage (Abroms et al., 2003). One study of beachgoers sunbathing practices found that men featured a “significantly higher frequency of sunburn,” while also using less sun protection measures and having overall lower knowledge and

concern for UV protection and dangers than women (McCarthy et al., 1999). Not only are males less likely to apply sunscreen in the first place, they are also less likely to properly apply sunscreen to all exposed areas (Wright et al., 2001).

CHAPTER III

METHODOLOGY

The purpose of this study is to understand the usage characteristics and attitudes of sun protection behaviors of summer camp counselors. Many camp counselors spend time outside, sometimes even all day, and as such, they are at a risk of occupational solar exposure (Modenese et al., 2018). A greater understanding of and knowledge in this area can help camp counselors protect their skin from further damage and create a safer working experience. This study utilized an online survey to gather data about the following questions:

1. What are the solar protection behaviors of summer camp counselors?
2. What are summer camp counselors' reasons behind their solar protection behaviors?
3. What are the attitudes of summer camp counselors towards the responsibility of solar protection in regard to their campers and themselves?

Setting

The population includes camp counselors working at summer camps throughout the United States. The goal was to gather data from a representative sample of counselors from different types of summer camps. American Camp Association accredited camps include 60% residential (overnight) and 40% day camps. Traditional formats for summer camps include both residential camps, where the campers live at the camp for the duration of the program, and day camps, where campers return home at the end of each day. There are more than 14,000 summer camps in the United States, with approximately 60% being resident camps and 40% being day camps; 15-26% from each of the five districts in the US; 33% nonprofit, 25% for profit, 24% government, 17% religiously affiliated, and 79% co-ed (American Camp Association, 2015).

While the ACA accreditation profile is the best available data about summer camps, it is unclear whether this group of accredited camps differs from all American camps.

Participants

This survey was conducted in direct relation to the participating summer camps. Contacts were gathered from the American Camp Association website and summer camps were emailed directly. Of the 339 summer camps that were emailed, 16 camps agreed to participate. Of those 16, responses were gathered from 9 camps. Gathering data while the population is at camp is common in the field, as it is an annual gathering. For example, a study that aimed to gain information regarding burnout of summer camp staff who worked with individuals with intellectual disabilities used a convenience sample. The authors used a self-reported questionnaire among camp counselors who were working at summer camps offering programs to said individuals necessary for their research (Ko et al, 2012). As this research opportunity included all camp counselors, no specifics of the program were considered when contacting programs. This was to ensure that a general population could be gathered, as opposed to skewing towards certain populations, such as single gendered, religious affiliated, or residential/day camp programs.

A 2015 survey from the American Camp Association of their accredited camps included information of summer camp staff characteristics (American Camp Association, 2015). It reported that 60% of staff reported were female, and 40% male (genders outside of the binary were not represented; American Camp Association, 2015). A large majority (75%) of staff were between the ages of 18 and 25. The 11% of staff younger than 18 years of age are not part of the population. These youth staff include “Counselors in Training,” “Youth Leaders,” and some lifeguarding staff. Only summer camp counselors are to be included in the survey.

Measurement Instruments

The online survey, as seen in Appendix C, was developed using Qualtrics, an online surveying software. The survey was developed based on the research questions. A combination of multiple choice and write-in responses were utilized. The survey included some logic: therefore, individual responses were presented with a maximum of 32 items. These included one item securing informed consent, either items about the background of the counselors and their working environment, six multiple choice items regarding counselors use of sunscreen, one multiple choice item on counselors use of sun protective clothing, and one write-in response on the reasons for a counselors' sun protection behaviors. After that, respondents moved on to three sections that asked them to share their level of agreement with statements about sun protection and responsibility at camp. The final section of the survey was to gather demographic information, including age, gender, ethnicity, and past work experience at summer camps.

Data Collection Procedures

Summer camps were contacted directly via email, as seen in Appendix D, and those that agreed to participate were responsible for sharing it with their camp counselors. This data collection method is similar to a survey completed, Lifeguard's Sun Protection Habits and Sunburns, in which the survey was distributed to the organizations themselves, and staff share it with participants (Hall et al., 2009). Summer camps chose when to distribute the survey to their staff (e.g. during work hours, during staff meetings, after work hours) and how to motivate counselors to respond. The survey was open between the dates of June 15th and August 31st. Organizations with more than 10 respondents received a detailed compilation of results from their camp in comparison to the total population results and specific recommendations their

organization could make to improve counselors sun protection behaviors and attitudes. In addition, all camps who participated received an infographic, with information on the importance of sun protection and what counselors can do to protect themselves while at work.

Data Analysis

Quantitative data were analyzed utilizing Excel to clean and organize the data and SPSS to conduct ANOVA analyses. Qualitative data from text box response formats from the survey were compiled and categorized into emergent themes. Survey items were all analyzed individually. Moreover, the responses to some survey items were analyzed in relation to others (e.g., gender differences in sun protection behaviors and attitudes).

CHAPTER IV

RESULTS

Introductions

This survey gained knowledge about an area without any prior research: sun protection in summer camps. There were 260 viable survey responses. Responses were considered viable if they answered the first 10 questions of the survey. Survey participants came from 15 different summer camp programs, including residential and day camp programs, from California, Florida, Indiana, Minnesota, Nevada, New York, Wisconsin, and several overseas territories. Respondents from overseas territories were U.S. citizens working on U.S. military installations with the children of U.S. service members. A majority, at 52.52% of respondents, were reported female, 45.38% male, 1.68% selected they preferred not to answer, and 0.42% were outside of the binary. The larger percentage of male respondents in this survey compared to the ACA's reporting may be due to the large participation of summer camps with Boy Scouts of America affiliations. For age, 72.6% of respondents were between the ages of 18 and 25, a similar reflection from the ACA's study. Racially, 89% of respondents were White, 7.86% Asian, 2.26% Black or African American, and 0.44% Native Hawaiian or other Pacific Islander. American Indian or Alaska Native were not represented in this survey. Ethnically, 9.70% of respondents reported they were of Hispanic, Latino, or of Spanish origin. Regarding their experience in working at summer camps, the largest percentage of respondents, at 29.91%, were working their first summer. This was followed by those who had worked 6+ summers (21.79%), 2 summers (17.95%), 3 summers (11.97%), 4 summers (9.83%), and 5 summers (8.55%). Lastly, 34.87% of respondents reported that they held a supervisory position at their summer camp.

The results are separated into three sections: Sun protection measure usage among camp counselors, reasons behind their usage rates, and their understanding of their responsibility for sun protection at summer camp. Using demographic information gathered, comparisons between groups are made throughout the sections.

Sun Protection Measures

Respondents were asked what their use of different sun protection measures were (Figure 4.1). Respondents were asked if they had applied sunscreen before, during, or at any time during the last day they worked at summer camp.

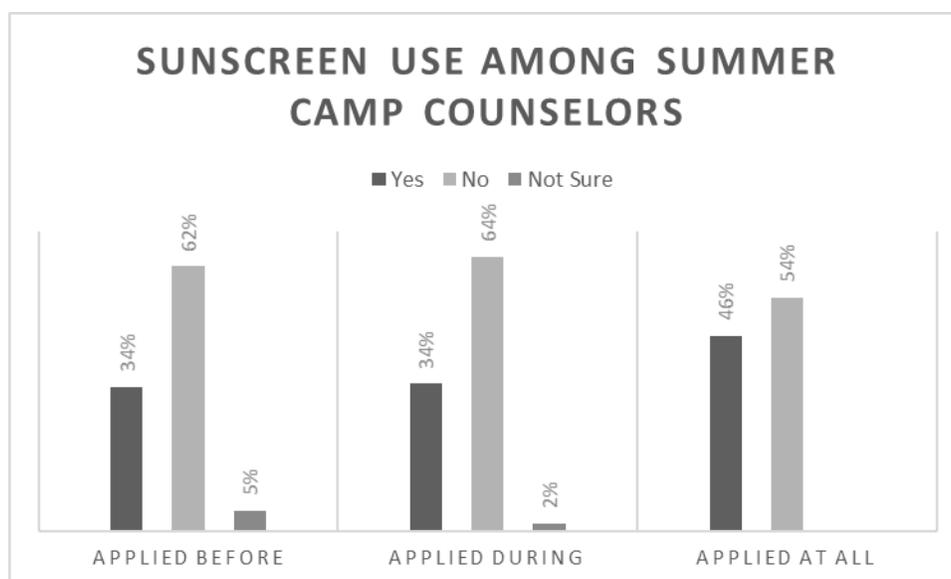


Figure 4.1 Sunscreen Use Among Summer Camp Counselors

Most (54%) of camp counselors reported they had not applied sunscreen at all (Figure 4.1). One-third (34%) of respondents indicated they applied sunscreen before work and one-third (34%) reported applying sunscreen during their day of work. Of those who applied sunscreen at

all, a majority, 42%, only applied once throughout the day, 32% applied twice, and 14% applied three times, and 12% applied sunscreen more than 4 times throughout the day.

When comparing different groups usage rates of sunscreen, certain factors were found to play a significant role in the usage rates. Sunscreen use significantly differed by location of the camp and was found to play a role in the usage of sunscreen use among camp counselors. The West Coast had the highest usage rates, at 75% of its respondents applying sunscreen, followed by the East Coast at 51%, and the Midwest having the least staff apply sunscreen at 25% ($p < .001$). Females were found to have higher usage rates of sunscreen, at 54%, compared to males at 34% ($p < 0.01$). Next, the type of camp was found to be a significant predictor of sunscreen usage. Significantly more day camp counselors (64%) applied sunscreen; compared to residential camp counselors ($p < 0.01$). Sunscreen usage did not significantly differ by temperature; number of hours worked outdoors; Hispanic, Latino, or Spanish Origin; race; experience working at summer camps; holding a supervisory position; and age.

Counselors who had applied sunscreen at least once were asked if their sunscreen offered broad-spectrum protection and if their sunscreen had a SPF of 30 or greater. These are recommendations by the American Dermatology Association. Figure 4.2 details these findings. Of counselors who reported having applied sunscreen at least once, a majority (76%) reported using sunscreen that offered broad-spectrum protection and nearly all (885) indicated their sunscreen had an SPF of 30 or greater. This suggests that although a minority of counselors are using sunscreen, most of the ones that are doing so are using the recommended type of sunscreen.

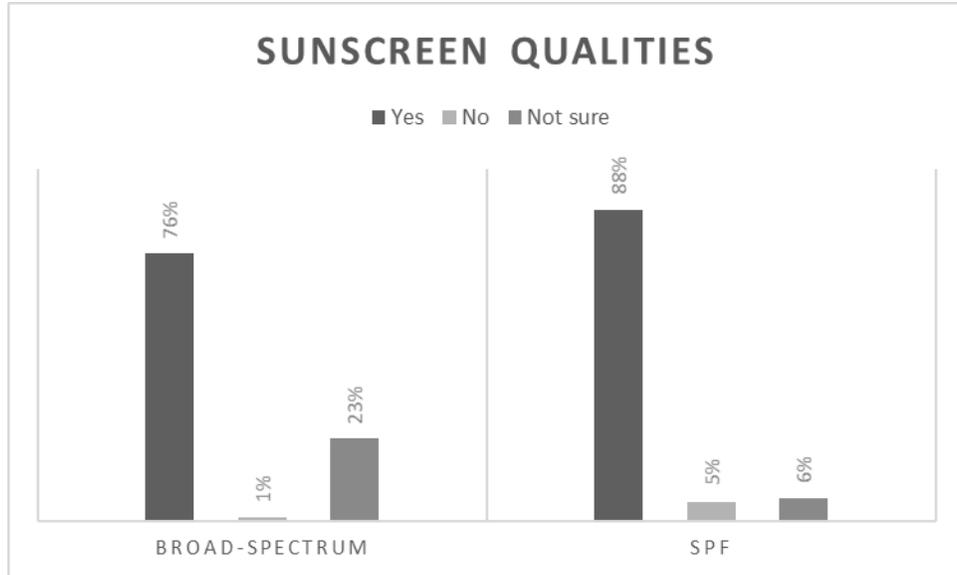


Figure 4.2 Sunscreen Qualities

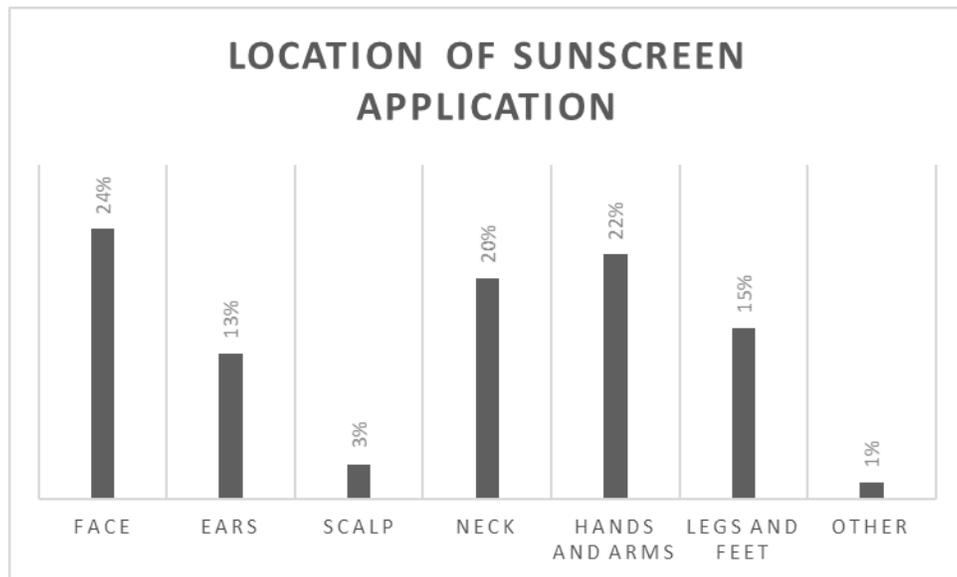


Figure 4.3 Location of Sunscreen Application

Respondents that indicated they had applied sunscreen at least once were asked where on their body they had applied sunscreen (Figure 4.3). This was a multiple response type of response format, since counselors could have applied sunscreen to multiple places on their bodies (i.e., the percentages do not add up to 100%). The most common application sites for sunscreen were the parts of the body commonly exposed during warm weather: face (24%), hands and arms (22%), neck (20%), legs and feet (15%), and ears (13%). The least common place to apply sunscreen was on the scalp, at 3%. “Other” responses, at 1%, included shoulders, back, and chest.

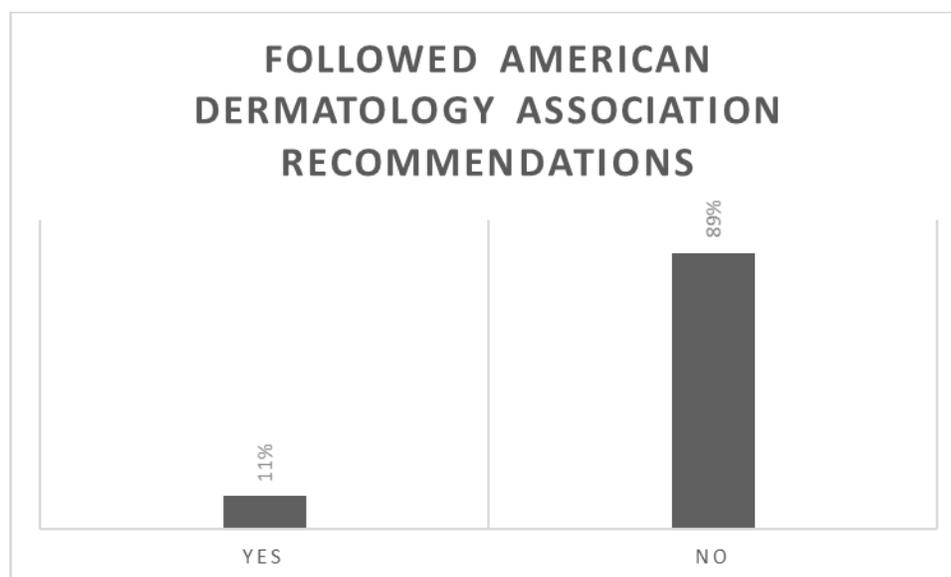


Figure 4.4 Followed ADA Recommendations

Of the counselors who had worked at least 6 hours outdoors on the last day they worked (N=103), only 11% reported having followed American Dermatology Association recommendations and applied sunscreen at least 3 times and used a sunscreen that offered both

broad-spectrum protection and an SPF of at least 30 (Figure 4.4). The remaining 89% of staff did not follow all of the American Dermatology Associations recommendations for proper sunscreen use.

All respondents were asked what, if any, sun protective clothing they may have used. As seen in Figure 4.5, the options included hats or visors, long sleeve shirts or sun sleeves, long pants, neck protectors or bandanas, swim shirts, “other,” or none of the above. Due to counselors potentially using more than one sun protective clothing item, the data does not add up to 100%.



Figure 4.5 Counselors Usage of Sun Protective Clothing

The most common item of sun protective clothing used was hats or visors (36%). This is followed by long pants (13%), long sleeve shirts or sun sleeves (9%), neck protectors or bandanas (7%), and swim shirts (5%). While only 4% of counselors reported using other means

of sun protection clothing, it included sunglasses. Lastly, 26% of counselors reported no usage of any sun protective clothing.

While information was gathered on both sunscreen and sun protective clothing, the two were not combined to compare total solar protection. Due to the number of possibilities in usage combinations, it would be bound to lead to false classifications. This was done to avoid inaccurate groupings of “protected” or “unprotected.”

Sun Protection Motivations

The next section of data covers the reasons behind camp counselors’ sun protection measure choices. The most common reason for using sun protection was *wanting sun protection and to avoid sunburn* (32%). The next most common reasons given for using sun protection was *wanting to avoid skin cancer* (15%), *preventing signs of skin aging* (3%), or *to set an example for their campers* (1%). In contrast, 16% of respondents reported that they did not use sun protection measures because they *felt they didn’t burn or didn’t care if they burnt or felt sun protection measures were inconvenient*. Moreover, 7% of respondents did not use sun protection because they *wanted to get a tan*. Less common, counselors reported that they *forget to use sun protection measures* (4%).

Responsibility for Sun Protection

The last area of data covers the responsibility of sun protection at summer camps. Counselors were asked to provide their level of agreement to a series of statements about responsibility for sun protection. The 5-point Likert scale included the options of 1=*strongly agree*, 2=*somewhat agree*, 3=*neither agree or disagree*, 4=*somewhat disagree*, and 5=*strongly disagree*.

The first section was regarding counselors' beliefs about their responsibility to protect campers (Figure 4.6). These items queried respondents' level of agreement to statements about whether they had a responsibility to remind campers about sun protection and if they did so. There was also a statement about whether they thought campers would become injured if they did not use sun protection.

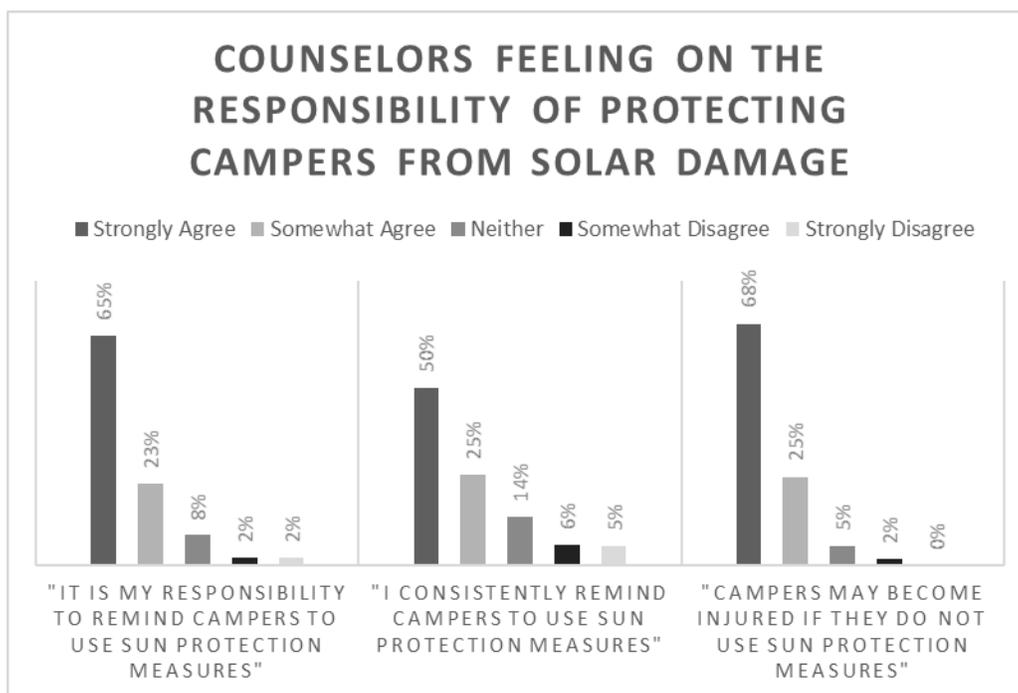


Figure 4.6 Counselors Feeling on Responsibility Towards Campers

Most (88%) counselors *strongly agreed* or *somewhat agreed* that it was their responsibility to remind campers to use sun protection measures when outside. Similarly, most (75%) counselors *strongly agreed* or *somewhat agreed* that they consistently remind campers to use sun protection measures when outside. Nearly all (93%) counselors *strongly agreed* or *somewhat agreed* that campers may become injured if they do not use sun protection measures. These results suggest that a strong majority of counselors believe that sun protection is important for

their campers, it is their responsibility to remind campers to do so, and they actually do remind their campers.

The next statements measured counselors' opinions about their responsibility for their own sun protection (Figure 4.7). Items queried respondents' level of agreement about their responsibility to use sun protection, whether they actually do so, and if they believe they will become injured if they do not do so. These three items about counselor's beliefs about themselves are semantically parallel to the previous three items about their beliefs about campers.

Most (84%) of counselors *strongly agreed* or *somewhat agreed* that it was their responsibility to use sun protection at camp. However, a smaller portion of respondents (56%) *strongly agreed* or *somewhat agreed* that they consistently used sun protection measures at camp. This lack of use of sun protection is despite the majority (81%) of counselors that *strongly agreed* or *somewhat agreed* that they may become injured if they do not use sun protection measures at camp.

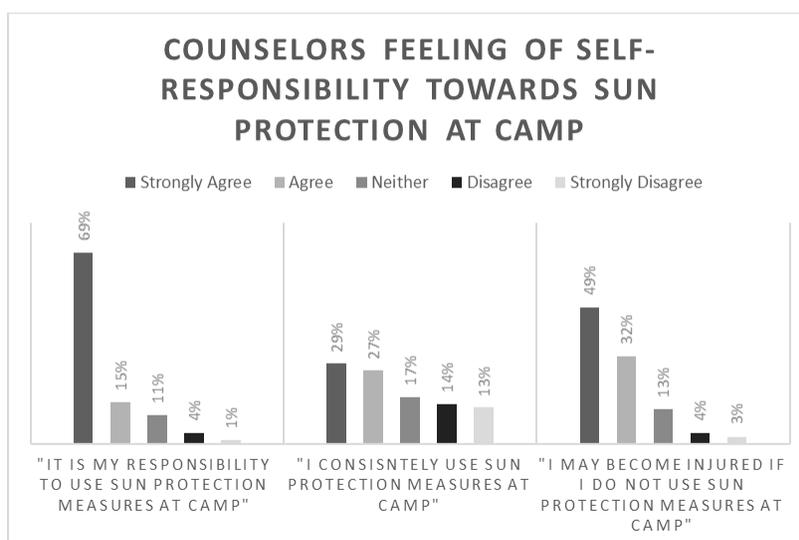


Figure 4.7 Counselors Feeling of Self-Responsibility

Responses to the statements regarding campers consistently significantly differed by gender, as seen in Table 4.1. Females ($\bar{x}=1.36$ where 1=*strongly agreed*) were found to be more likely to feel it was their responsibility to remind campers to use sun protection measures at camp compared to males ($\bar{x}=1.71$, $p<.01$). Female respondents also agreed significantly more strongly that it was their responsibility to use sun protection measures themselves ($\bar{x}_{\text{females}}=1.27$, $\bar{x}_{\text{males}}=1.76$, $p<.001$). Female counselors more strongly agreed than their male counterparts that campers may be injured if they do not use sun protective measures at camp ($\bar{x}_{\text{females}}=1.24$, $\bar{x}_{\text{males}}=1.51$, $p<.01$). Females also significantly agreed more strongly that they felt they consistently reminded campers to use sun protection measures over males ($\bar{x}_{\text{females}}=1.64$, $\bar{x}_{\text{males}}=2.23$, $p<.01$), and that they themselves consistently applied sunscreen ($\bar{x}_{\text{females}}=2.23$, $\bar{x}_{\text{males}}=2.89$, $p<.01$). Lastly, female respondents significantly differed from male respondents for the beliefs that they may be injured themselves if they do not use sun protection measures ($\bar{x}_{\text{females}}=1.49$, $\bar{x}_{\text{males}}=2.03$, $p<.0001$).

Table 4.1

Significant Factors of Camp Counselors Attitudes of Sun Protection Measures by Gender

Factor	Female	Male	Significance
"It is my responsibility to remind campers to use sun protection measures"	$x=1.36$	$x=1.71$	$p<.01$
"It is my responsibility to use sun protection measures"	$x=1.27$	$x=1.76$	$p<.001$
"I consistently remind campers to use sun protection measures"	$x=1.64$	$x=2.23$	$p<.01$
"I consistently use sun protection measures at camp"	$x=2.23$	$x=2.89$	$p<.01$
"Campers may become injured if they do not use sun protection measures"	$x=1.24$	$x=1.51$	$p<.01$
"I may become injured if I do not use sun protection measures"	$x=1.49$	$x=2.03$	$p<.0001$

Note. 1 = *Strongly Agree*

Day camp counselors ($\bar{x}=1.14$ where 1=strongly agreed) were also more likely to agree that campers may become injured if they do not use sun protection measures at camp compared to residential camp counselors ($\bar{x}=1.62$, $p<.0001$). The last significant difference was the agreement that counselors may be injured was based on their experience, with 1st year counselors ($\bar{x}=1.53$) the most likely to strongly agree, followed by 6+ years ($\bar{x}=1.61$), 4th year ($\bar{x}=1.67$), 2nd year ($\bar{x}=1.83$), 3rd year ($\bar{x}=1.86$) and 5th year ($\bar{x}=2.32$, $p<.05$)

Factors not determined to be significant in the agreement of counselor's responsibility to remind campers to use sun protection measures includes age ($p>.05$), years of experience ($P>.05$), and holding a supervisory position ($p>.05$). Factors not determined to be significant in the agreement that counselors are responsible for using sun protection measures themselves include age ($p>.05$), years of experience ($p>.05$), holding a supervisory position ($p>.05$), and camp type ($p>.05$). Factors not determined to be significant in the agreement that campers may become injured if they do not use sun protection measures at camp include age ($p>.05$), years of experience ($p>.05$), holding a supervisory position ($p>.05$), and camp type ($p>.05$). Factors not determined to be significant in the agreement that counselors may become injured if they do not use sun protection measures at camp include age ($p>.05$), holding a supervisory position ($p>.05$) and camp type ($p>.05$).

Lastly, counselor's own usage rates of sunscreen were compared to their level of agreement on the responsibility of sun protection at summer camp. Counselors who applied sunscreen themselves were significantly more likely to agree ($\bar{x}=1.25$) that it was their responsibility to remind campers to use sun protection measures at camp over those who did not apply sunscreen ($\bar{x}=1.80$, $p<.0001$). Those who applied sunscreen were also more likely to agree that it was their responsibility to use sun protection measures themselves ($\bar{x}=1.14$) over those

who did not apply sunscreen ($\bar{x}=1.80$, $p<.0001$). Counselors who applied sunscreen themselves felt they more consistently reminded campers to use sun protective measures ($\bar{x}=1.50$) than those who did not apply sunscreen themselves ($\bar{x}=2.28$, $p<.0001$). They were also felt they were mostly consistent in using sun protection measures themselves ($\bar{x}=1.72$) over those who did not apply sunscreen ($\bar{x}=3.25$, $p<.0001$). Lastly, counselors who applied sunscreen themselves were more likely to agree that campers and counselors may become injured if they do not use sun protection measures at camp. This included counselors who applied ($\bar{x}=1.26$) over those who did not apply ($\bar{x}=1.52$, $p<.05$) feeling campers may become injured; and counselors who applied ($\bar{x}=1.26$, $p<.0001$.) over those who did not apply ($\bar{x}=1.52$, $p<.0001$). feeling counselors may become injured.

CHAPTER V

DISCUSSION

Discussion

The purpose of this study is to understand the usage characteristics and attitudes of sun protection behaviors of summer camp counselors. With many camp counselors spending time outdoors, they are at a higher risk of occupational solar exposure (Modenese et al., 2018). A greater understanding of and knowledge in this area can create a safer working environment for camp counselors and help employers and camp counselors protect counselors' skin from solar related damage and skin cancer.

As expected, the results provide evidence that summer camp counselors are not using proper solar protection measures while at work. Despite the reality that one in five Americans experience skin cancer (Stern, 2007), fewer than half (46%) of counselors applied sunscreen at any point throughout the day. One-third (34%) of counselors applied sunscreen before beginning work, while the remaining counselors (64% who did not apply before beginning work, 4% unsure) went into the workplace unprotected. The rates of usage for sun protective clothing reported in this survey were not enough to make up for the lack of sunscreen use. Only 15% of counselors mentioned skin cancer when discussing their reasons for their solar protection measure usage. More counselors (16%) felt they didn't burn or didn't care if they burnt than those who mentioned wanting to avoid skin cancer (15%). Only 32% of counselors cited wanting to avoid sunburn. A disappointing 1% of counselors reported that they use sun protection measures themselves to set an example for their campers, further illustrating the lack of seriousness surrounding solar damage and the need for workplace protection. The failure to

adequately protect against this occupational environmental hazard means that camp counselors are at risk of solar damage and skin cancer.

These results are similar to previous findings that outdoor worker's sun protection behaviors are not enough to properly protect themselves (Reinau et al, 2013). Camp counselors, like many outdoor workers, are not adequately informed about the risks and not sufficiently trained to protect themselves and the campers in their care.

Similar to this study, previous research found that females have higher usage rates of sun protection measures than males (Abroms et al, 2003). The current study found that female counselors were significantly more likely to feel strongly about sun protection for themselves and their campers. Not only were they more likely to use sun protection for themselves, female respondents were found to be significantly more likely to indicate that it was their responsibility to remind campers to use sun protection measures and understand that their campers may become injured if they do not use sun protection measures. This aligns with previous research findings that females receive more social encouragement to use sun protection measures to prevent damage, while males take a reactionary approach to sun damage (Abroms et al., 2003).

The third major finding from this study is that counselors who use sun protection measures themselves are more likely to feel compelled to protect their campers from solar damage. Counselors who use sun protection measures were more likely to agree that it was their responsibility to remind campers to use sun protection measures and that campers may become injured if they do not use sun protection measures. Given that the purpose of summer camp is to provide a safe and nurturing experience for children during the summertime, it is of great importance to protect campers from solar damage. Knowing that counselors are more likely to pass this protection on to their campers when they themselves take it seriously shows the need

for summer camps to promote the importance of sun protection to their staff to subsequently protect their campers. As previously mentioned, a surprising 1% of counselors reported their reasons for using sun protection was to set an example, meaning the remaining 99% of counselors did not factor in their campers in their own sun protection decisions. This lends itself to the possibility that increasing camp counselor's usage of sun protection measures would further protection of campers.

The results of this survey show that currently counselors are not being adequately educated and prepared to work in the outdoors. Summer camps are, therefore, subjecting their staff to lifelong health risks (Girgis et al, 1994). Summer camps are failing to protect their staff. Camps can address this by properly training staff about the hazards of UV exposure and protection measures, providing UV protection (e.g., sunscreen, protective uniform options), and ensuring employee adherence to workplace safety policies requiring staff to use solar protection measures and enforcing them for the youth in their care. By adopting these practices, summer camps would both educate their staff on the hazards of working outdoors and provide options for staff to protect themselves. This, in turn, would provide a safer working environment for summer camp counselors and reduce the risks of solar exposure and in the long term, skin cancer (Craythorne & Al-Niami, 2007).

The current failure of summer camps to adequately protect their staff leads to the conclusion that the Occupational Safety and Health Administration is failing to hold summer camps accountable. OSHA was created to “assure safe and healthful working conditions for working men and women by setting and enforcing standards by providing training, outreach, education, and assistance” and that employers “must work to reduce or minimize hazards in the workplace and train employees how to work safely on the job” (Occupational Safety and Health

Administration, n.d.). The information collected in this study shows that summer camp counselors are not being trained on the hazards of their work environment, how to properly protect themselves from those hazards, and summer camps are not working to create a safer working environment for their staff. OSHA is, in turn, failing to hold summer camps accountable for the hazards they are subjecting their staff to. Summer after summer, camp counselors are exposed to a workplace hazard with lifelong consequences, and action is not being done to protect them.

Limitations

Due to the nature of this survey, there may be recollection issues for the camp counselors. There is a potential that it's been a few days since their last day working, or even recollection issues from the same day. There is also the limitation that this survey was not able to identify if the sun protection measures used were adequate to provide protection. A baseball cap does not provide the same protection to the ears and neck that a wide rimmed hat can. This study is also limited by its population. Respondents came from a limited number of states and locations, while summer camps can be found nationwide. Most respondents were from residential camps, perhaps skewing data due to different job responsibilities and expectations. There was also some concern that counselors may over report their level of sun protection due to social desirability. If this was the case, and the actual level of protection is lower, then the current situation is worse than the considerably bleak findings presented in this study.

Recommendations for Future Research

Due to the lack of research in this area, there is a large area for potential further research. Future research can seek a larger sample size. Further studies should focus on specific types of

summer camps (e.g. day camps, only residential camps, gender specific camps) to understand how behaviors and attitudes differ by duration, location, and the camper gender and age.

More research is needed to understand the impact of sun protection staff trainings and workplace policies on the rates of counselors' sun protection usage and attitudes towards sun protection for campers. Would camps that offer specific trainings have higher usage rates than those that do not? Would workplace policies change counselors' actions, and if so, what method of introductions would be most effective? Comparing the observed usage rates of summer camp counselors' self-protection to observations about campers' sun protection usage could provide additional evidence about the connections between counselors and youth behaviors, as well as avoiding social desirability and recollection issues.

Given the delay in the development of skin cancer from when UV exposure occurs, it is important to complete longitudinal comparisons between counselor solar exposure and long-term rates of cancer (Azizi et al, 2009). Lastly, researching the impact of occupational solar exposure on summer camps could be done by analyzing the reduction in employee productivity or increase in employee absences associated with solar injured suffered at work (Warthan et al, 2003).

Conclusion

This study gathered data about the usage characteristics and attitudes of sun protection behaviors of summer camp counselors and the responsibility of sun protection at summer camps. The current study is the only known study focusing on the solar protection behaviors and attitudes of camp counselors. The three primary findings were that counselors are failing to use appropriate sun protection measures, sun protection behaviors by counselors and towards campers significantly differ by gender, and counselors personal use of sun protection is significantly related to their attitudes towards their responsibility for campers' protection.

Summer camps must take significant measures to adequately protect their counselors. Only by taking the risks of occupational solar exposure seriously can summer camps fulfill their mission to support the safety of their employees and, in turn, their campers.

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APPENDIX A

Institutional Review Board Approval

Human Subjects in Research Exempt Approval > Inbox x



irb@csuchico.edu
to me, LMclachlin, irb

Mon, May 6, 11:35 AM ★ ↩ ⋮



CSU, Chico
Research
Foundation

May 06, 2019

Jason Morgan
[REDACTED]
Chico, CA 95928

Dear Jason Morgan:

Protocol # 25219

As the Chair of the Campus Institutional Review Board, I have determined that your research proposal entitled "Occupational solar exposure at summer camp: A survey of camp counselors on sun protection behaviors and responsibility" is exempt from full committee review. This clearance allows you to proceed with your research.

I do ask that you notify our office should there be any further modifications to, or complications arising from or within, the study. In addition, should this project continue longer than the authorized date, you will need to apply for an extension from our office. When your data collection is complete, you will need to turn in the attached Post Data Collection Report for final approval. Students should be aware that failure to comply with any HSRS requirements will delay graduation. If you should have any questions regarding this clearance, please do not hesitate to contact me.

Sincerely,

John Mahoney, PhD., MA (Music)
Professor, Department of Biological Sciences
Director, University Honors Program
Chair, HSRC & IACUC & IBC
SUTR 152P
CSU, Chico 95929-0115
530.898.3276

APPENDIX B

Copy of Informed Consent Form

Thank you for helping us understand a bit more about sun protection measures at summer camp.

Data collected from this anonymous survey will be used as part of a research project conducted by a graduate student in the Department of Recreation, Hospitality, and Parks Management at California State University, Chico. You have been invited to participate because you are an adult, 18 years of age or older, and work as a summer camp counselor.

The purpose of this survey is to study the usage characteristics and attitudes of sun protection measures of summer camp counselors, and the responsibility of sun protection at summer camps.

There are no risks or benefits to you in participating in this survey. You may choose to participate or not. Your responses are **anonymous**. The compiled anonymous responses may be shared with your employer, and due to the small number of counselors at some camps, your identity if you participate could be known to your employer; especially if you have strong views about the topic at hand. We do not collect identifying information such as your name, email address, or IP address. You may answer only the questions you feel comfortable answering, and you may stop at any time. If you do not wish to participate, you may simply not answer any questions. The survey should take approximately 10-15 minutes to complete. Any questions or concerns should be directed to Jason Morgan at jmorgan32@csuchico.edu.

This research has been reviewed according to California State University, Chico IRB procedures for research involving human subjects. If you have any questions about your rights as a participant, you may contact the Human Subjects in Research committee at 530-898-3145 or IRB@csuchico.edu

APPENDIX C

Copy of Survey

Thank you for helping us understand a bit more about sun protection measures at summer camp.

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1. Do you wish to continue with this survey?
 - i. Yes
 - ii. No

-page break-

2. What summer camp do you work for?
 - a. Text box
3. What is the nearest city to your summer camp? *City, State*
 - a. Text box

-page break

4. What was the last day you worked at your summer camp?
 - a. Drop down box
 - i. Today
 - ii. Yesterday
 - iii. 3 days ago

- iv. 4 days ago
- v. 5 days ago
- vi. 6 days ago
- vii. 7 days ago
- viii. 8+ days ago

-page break-

On the last day you worked at camp:

5. What hour did you start work? *Round to the nearest hour*

- a. Drop down box
 - i. 12:00AM
 - ii. 1:00AM
 - iii. 2:00AM
 - iv. 3:00AM
 - v. 4:00AM
 - vi. 5:00AM
 - vii. 6:00AM
 - viii. 7:00AM
 - ix. 8:00AM
 - x. 9:00AM
 - xi. 10:00AM
 - xii. 11:00AM
 - xiii. 12:00PM
 - xiv. 1:00PM
 - xv. 2:00PM
 - xvi. 3:00PM
 - xvii. 4:00PM
 - xviii. 5:00PM
 - xix. 6:00PM
 - xx. 7:00PM
 - xxi. 8:00PM
 - xxii. 9:00PM
 - xxiii. 10:00PM
 - xxiv. 11:00PM

6. How many hours did you work?

- a. <1 hour
- b. 1-2 hours
- c. 2-4 hours
- d. 4-6 hours
- e. 6-8 hours
- f. 8+ hours
- g. Not sure

-page break-

7. On the last day you worked at camp, how many hours did you spend outdoors?
 - a. <1 hours
 - b. 1-2 hours
 - c. 2-4 hours
 - d. 4-6 hours
 - e. 6-8 hours
 - f. 8+ hours
8. On the last day you worked at camp, how would you describe the weather? *Choose all that apply*
 - a. Sunny or clear skies
 - b. Cloudy
 - c. Raining
 - d. Other (text box)
9. On the last day you worked at camp, about how warm was it? In degrees *Fahrenheit*
 - a. Drop down box
 - i. <50 degrees Fahrenheit
 - ii. 60-70 degrees Fahrenheit
 - iii. 70-80 degrees Fahrenheit
 - iv. 80-90 degrees Fahrenheit
 - v. 90-100 degrees Fahrenheit
 - vi. 100-110 degrees Fahrenheit
 - vii. 110+ degrees Fahrenheit

-page break-

On the last day you worked at camp:

10. Did you apply sunscreen before beginning work?
 - a. Yes
 - b. No
 - c. Not sure (text box)
11. Did you apply sunscreen during the work day?
 - a. Yes
 - b. No
 - c. Not sure (text box)

-page break-

12. How many times you apply sunscreen during the work day?
 - a. 1 time
 - b. 2 times
 - c. 3 times
 - d. 4 times
 - e. 5 times
 - f. 6 times

- g. 7+ times
 - h. Not sure
13. Where did you apply sunscreen? *Check all that apply*
- a. Face
 - b. Ears
 - c. Scalp
 - d. Neck
 - e. Hands and arms
 - f. Legs and feet
 - g. Other (text box)
 - h. None of the above
14. Does your sunscreen offer broad-spectrum protection?
- a. Yes
 - b. No
 - c. Not sure
15. Does your sunscreen have an SPF of 30 or more?
- a. Yes
 - b. No
 - c. Not sure

-page break-

16. Did you or are you using any of the following sun protective clothing when you were outside? *Check all that apply*
- a. Hats/visors
 - b. Long sleeve shirts/sun sleeves
 - c. Long pants
 - d. Neck protectors/bandanas
 - e. Swim shirt
 - f. Other (text box)
 - g. None of the above

-page break-

17. What are your reasons for your sunscreen/sun protective clothing habits?
- a. Text box

-page break-

Please share your level of agreement with the following statements:

18. It is my responsibility to remind campers to regularly apply sunscreen and/or use protective clothing when they are outside.
- a. Strongly agree
 - b. Somewhat agree

- c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree
19. I consistently remind campers to regularly apply sunscreen and/or use protective clothing when they are outside.
- a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree
20. Campers may become injured if they do not regularly apply sunscreen and/or use protective clothing when they are outside.
- a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree

-page break-

Please share your level of agreement with the following statements:

21. It is my responsibility to remind other counselors to regularly apply sunscreen and/or use protective clothing when they are outside at camp.
- a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree
22. I consistently remind other counselors to regularly apply sunscreen and/or use protective clothing when they are outside at camp.
- a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree
23. Other counselors may become injured if they do not regularly apply sunscreen and/or use protective clothing when they are outside at camp.
- a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree

-page break-

Please share your level of agreement with the following statements:

24. It is my responsibility to regularly apply sunscreen and/or use protective clothing when I am outside at camp.
- Strongly agree
 - Somewhat agree
 - Neither agree nor disagree
 - Somewhat disagree
 - Strongly disagree
25. I regularly apply sunscreen and/or use protective clothing when I am outside at camp.
- Strongly agree
 - Somewhat agree
 - Neither agree nor disagree
 - Somewhat disagree
 - Strongly disagree
26. I may become injured if I do not regularly apply sunscreen and/or use protective clothing when I am outside at camp.
- Strongly agree
 - Somewhat agree
 - Neither agree nor disagree
 - Somewhat disagree
 - Strongly disagree

-page break-

Demographics

27. What is your age?
- Drop down box
 - 18 years old
 - 19 years old
 - 20 years old
 - 21 years old
 - 22 years old
 - 23 years old
 - 24 years old
 - 25 years old
 - 26 years old
 - 27 years old
 - 28 years old
 - 29 years old
 - 30+ years old
28. Are you...?
- Female
 - Male
 - Outside binary (text box)
 - Prefer not to answer

29. Are you of Hispanic, Latino, or Spanish origin?
- Yes
 - No
30. How would you describe yourself?
- American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or other Pacific Islander
 - White
31. Including this current summer, how many summers have you worked at summer camps?
- Drop down box
 - 1 summer
 - 2 summers
 - 3 summers
 - 4 summers
 - 5 summers
 - 6+ summers
32. Do you hold a supervisory position at your summer camp?
- Yes
 - No
 - Not sure (text box)
33. In total, how many years have you held supervisory position at summer camps?
- I have never held a supervisory position
 - 1 summer
 - 2 summers
 - 3 summers
 - 4+ summers
34. End of survey
- Thank you for sharing your thoughts and experiences. Your response has been recorded. Enjoy the rest of your summer!

APPENDIX D

Copy of Email to Potential Participating Camps

My name is Jason P. T. Morgan and I am a graduate student at California State University, Chico in the Department of Recreation, Hospitality, and Parks Management. I am beginning my masters thesis research project, and am reaching out in hopes of your organization's participation.

The purpose of this survey is to study the usage characteristics and attitudes of sun protection measures of summer camp counselors. My interest in this topic stems from my 9 years of working in the summer camp world and seeing the attitudes and usage of sun protection measures of my fellow camp counselors.

How to participate?

- Please respond back to this email, at your earliest convenience, with the following information:
 - Organization contact information,
 - The number of summer camp counselors you will have,
 - The dates of your program(s),
 - If your organization offers multiple summer camp programs, such as a community recreation district, please list all of your different summer camp programs that will be participating.
- Ask and provide an opportunity for your camp counselors to respond to the anonymous online survey once between the dates of June 15th and August 31st. [Here is a link to a draft survey.](#)
 - This may be done by staff during camp hours, at staff meetings, or outside of work hours.
 - The survey should take no more than 10-15 minutes.
 - The survey is tablet and smartphone friendly.
 - A final draft of the survey will be sent prior June 15th.
 - If you do not wish to have your organization participate, so as to avoid further requests, a response communicating so would be appreciated.

Why should your organization take part in this research?

- Occupational solar exposure, like what all camp counselors who work outside experience, is linked to an increased risk of some forms of skin cancer. Additionally, solar radiation injuries are a common, but preventable, occurrence at summer camps. Participating in this study will contribute to higher levels of knowledge on this issue, and increase the ability of camps and staff to protect from further/future exposure risks.
- Camps who have 10 or more camp counselors respond to the anonymous survey will receive a detailed analysis comparing your counselor's aggregated anonymous responses to the entire sample of counselors. In addition, your camp will receive recommendations for improving the use of sun protection measures and attitudes in the responsibility of sun protection at camp specifically detailed based on their camps results (example attached).

- If less than 10 camp counselors respond, we cannot provide a summary of the counselors' responses from your camp due to privacy reasons; but we will send you the aggregate results of the entire sample.
- All camps who participate will receive an informational infographic to share with their staff on the topic of solar exposure and protecting themselves in the workplace.

If you have any questions, comments, or wish to further discuss your organizations participation, then please contact me.