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Sunscreen is Not Just for White People: Church-Based Sunscreen Education for Black Women

Lauren Mitchell
Sacred Heart University, sharpl@mail.sacredheart.edu

Sunscreen is Not Just for White People: Church-Based Sunscreen Education for Black Women

Lauren Mitchell, MSN, RN

A DNP project submitted in partial fulfillment of the requirements

for the degree of Doctor of Nursing Practice, Davis& Henley College of Nursing

Dr. Geraldine Budd, RN, CRNP FAANP; Project Faculty Advisor

Brother Norman Nuton Jr. Senior Minister & Sister Myra Nuton, RN; Practice Mentors

Sacred Heart University Davis & Henley College of Nursing

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This is to certify that the DNP Project Final Report by

Lauren Mitchell, MSN,RN

has been approved by the DNP Project Team on

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for the Doctor of Nursing Practice degree

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Abstract

Significance and Background: African American women are an undeserved population in healthcare, particularly regarding skin cancer prevention. The lack of education and misinformation surrounding skin cancer has resulted in general mistrust of the healthcare system amongst African Americans. Proper education on sunscreen use and skin cancer screening is essential to prevent late diagnosis of skin cancer and to promote prevention efforts.

Purpose: This quality improvement project utilized evidence-based practice to provide education on the proper use of sunscreen and skin cancer screening to African American women in a faith-based setting in Southern Connecticut.

Methods: A pre-survey was conducted to assess the knowledge of potential participants, and educational sessions were developed based off their responses. Three educational sessions were presented to the faith-based Women's Ministry. At the final session, women aged 18 years of age and older who attended the sessions were invited to complete a post survey. The principles of the Plan-do study act guided this project.

Outcomes: The pre-survey data was collected from 22 potential participants, All potential participants were given a bookmark containing skin cancer facts and sunscreen. Seventeen women completed a post survey, with three participating in both the pre- and post-survey. The survey responses were compared to determine the percentage of improved knowledge following the education sessions. Prior to the education session, 23 % were not wearing sunscreen because they did not believe they needed it, and 46% did not like the white residue. An alarming 77% stated they were not asked about sunscreen usage by their providers.

Discussion: This quality improvement project underscored the need to educate the African American community on skin cancer prevention. The surveys highlighted the areas of disparity in the African American community regarding the lack of knowledge on sun care health. Skin cancer is not seen as a significant concern in the African American community, and the lack of knowledge and misinformation has resulted in inadequate sun care practices. Although the sample size was small, the findings demonstrate the need for education not only for African Americans but health care providers as well.

Keywords: sunscreen, black women, skin cancer, churches and education.

Sunscreen is Not Just for White People: Church-Based Sunscreen Education for Black Women

Problem Identification & Evidence Review

Description of the Problem

The African American Community is significantly behind in healthcare prevention and treatment (Scharff, et al., 2010). One area in particular is in skin cancer recognition and prevention. A key item in preventing the development of skin cancer is by using sunscreen. However, for a variety of reasons African American women do not use sunscreen and are not, as frequently, counseled on the importance of a dermatology yearly or bi-yearly skin check (Buchanan Lunsford, et al., 2018). Most of the information and knowledge that African American women obtain has been found to come from magazine columns and not evidence-based information from a health care provider (Greaves, 2019).

The Community Prevention Services Task Force (CPSTF) recommends a multi-component community-wide intervention to prevent skin cancer by increasing sun-protective behaviors (HealthyPeople2020, 2012). These interventions combine strategies directed by individuals, mass media campaigns, and environmental and policy changes. CPSTF found that the previously mentioned community-based interventions increase sunscreen use and may reduce sunburns in the targeted population. Sunburns that can then go on to evolve into skin cancer. The purpose of this paper is to identify the lag of skin cancer prevention and promote sunscreen usage in African American women.

Description of Local Problem

The African American community is behind their Caucasian counterparts and has a wealth of incorrect knowledge that can be in the long run detrimental to their health (Scharff, et

al., 2010). Mistrust in the medical profession stems from the Tuskegee syphilis experiment as well as the mistreatment of Henrietta Lockes and current racial inequalities and disparities (Scharff, et al., 2010). Why does representation matter? There is an under representation of people of skin of color in the medical profession especially dermatology. Currently in the United States 3% of actively practicing dermatologist are black (Gallegos, A., 2016) In Connecticut, 5 of the 339 dermatologists are noted to specialize in skin of color and, of those, 3 are minorities.

Between 1992 to 2007 melanoma rates remained stable in Black Americans. However, the rate of detecting advanced stages of the melanoma was higher in Black Americans in comparison to non-Hispanic whites; 19.1 percent versus 8.7 percent respectively (Clairwood, M., Ricketts, J., Grant-Kels, J & Gonsalves, L., 2014). Racial disparities further play a factor as Black Americans' 5- and 10-year survival rates for melanoma is lower than white Americans and patients are majority female, at 60 percent versus 55 percent, and 18 percent likely to receive amputations in conjunction with their treatment (Carter, et al., 2020).

Clinical Question

The aim of this project is to educate African American women on the importance of using sunscreen. It also was intended to bring awareness for the need of sunscreen usage in African American women. From this a PICO (t) question was developed. In African American women (P) will education about skin cancer prevention (I) be improved 4 to 6 weeks (C) after classes on skin cancer prevention and detection (O).

External Evidence

A literature review was conducted in order to obtain articles that are in line with the PICO question of "In African American women (P) will education about skin cancer prevention (I) be improved 4 to 6 weeks (C) after classes on skin cancer prevention and detection (O)." The

search was limited in information regarding black women and sunscreen usage, deterrents as well as cancer statistics in relation to melanomas. Skin cancer is something that is not, per the given literature, followed or studied in African Americans as it is found to be an issue predominantly in fairer skin individuals. Supplemental articles are considered going forward in order to increase the body of work that will be necessary to deem the lack of sunscreen protection education important. The following databases were searched: EBSCO, PubMed.gov and OVID. The key words that were searched included: sunscreen, women and sunscreen, black women and sunscreen, black women and skin cancer, black women and skin cancer prevention, black churches and education, black churches and cancer education. The search was initially limited to the years of 2012 to 2022 however the search did not provide as much information and was expanded to the year 1999 to provide a larger data pool. Adding additional keywords provided a more concentrated search result as can be noted from going from 'sunscreen' to 'black women and sunscreen'. In Appendix A Figures A1 through A3 highlight the queried databases, search terms and results.

Song, et al. (2020) completed an intervention reviewing dermatologists' recommendations for sunscreen off basis of level of protection, price and cosmetic feel. This article demonstrates a need to increase research and familiarity of skin color in dermatology, as the main sources of information is from beauty magazines and columns with minimal physician input. Lungsford, et al., (2018) studied the risk of determining the risk of African Americans and Hispanics in developing skin care based on risk, knowledge, awareness and beliefs. These studies indicate education can be promoted from a source such as a church based educational seminar to increase awareness, as the church is seen as source of education, strength and trust in the Black community (Gates, 2021).

Greaves (2019) published an article discussing where a lot of black women get their information from for skin care. There are two Black women dermatologists listed for references/discussions. It discusses the repercussions of not wearing sunscreen but provides no real concrete numbers or percentages. This article provides further highlights the disparities in the type of information and data available in relation to the quality of sunscreen available to black women because of the white or gray cast that is left by leading sunscreen products. Villines (2021) discusses that although persons of color have lower chances of developing skin cancer there is still the possibility. Also, where it shows up in Black Americans is not typical and because of this, diagnosis is later with fewer treatment options.

Internal Evidence

Locally, representation continues to be an issue. Medical professionals on all levels do not perform skin checks, inquire about healthy skin practices, or use of sunscreen as frequently or at all in POC in comparison to fair complexion individuals (Villines, 2020). In texts, black skin is not shown in the same "light" as light skin counterparts. Illustrations display brown skin individuals with sexually transmitted infections, misdiagnosis of eczema vs. psoriasis. In the state of Connecticut per Healthgrades, in 2021, 5 of 339 dermatologists in the state that specialized in skin of color. Of those 5, 3 are minorities themselves.

Recommendations

Of the articles that were originally chosen there were eight articles that stood out and were most promising in supporting the project that would be developed. The articles can be located in Appendix A with a description of what level of evidence they each provide. The aim of this project is to ultimately provide educational seminars in a local church instead of women relying solely on recommendation from favorite magazines as is discussed in Basch, 2015. The

church has been a source of information, pride and strength in the black community and will be the springboard for this project (Maxwell, 2022). There is not a lot of data on sunscreen knowledge, prevention, or melanoma in the black community. There are misconceptions and misinformation that put the community at risk. The aim of this project it to promote educational guidance in sun and skin awareness in the black community because sunscreen is not just for white people.

Phase 2: Project Planning

Project Goals

Develop a church-based education seminar on skin cancer prevention to answer the PICO question. Educate African American women on best sun protection methods by using sunscreen. Dispel misconceptions about improper skin care and promote skin equality.

Framework

The Plan-Do-Study-Act (PDSA) framework will be the guide to implementing this project.

- Plan -Provide pre-surveys to female members of the congregation after service to gauge previous sun protection knowledge via paper and QR code.
- Do -Have educational service provide after church service for 4-6 weeks.
- Act -Provide post-surveys following 6-week education seminar.
- Study -Review data points based on pre- and post-surveys and responses.

Context

A community-based church in the heart of southern Connecticut that boast several ministries that services its congregation, including the women's ministry, youth ministry, men's Bible study, marriage and senior ministries. As well as community outreach

initiatives that serve the underserved with a food pantry that services the surrounding New Haven area. Over a 200-member congregation is currently being led by a minister and his wife, First Lady of the church since 2016. The minister, initially a paralegal, obtained his Bachelor of Science in Divinity from Ambridge University in 2007. He has held assistant and minister in other Maryland homed churches before becoming Minister of the congregation at the community-based church. The First Lady obtained her nursing degree from Chesapeake College. She has used that knowledge in various compacities. Most recently she has been the nurse manager of a health center in New Haven, CT. She is active in the Women's Ministry as well as the instructor of the teen girl's program at the community-based church.

Intervention/Practice Change

This project completed the following:

- Performed baseline pre-survey on participants.
- Gauged where there was a lack of skin cancer knowledge among the participants.
- Provided written information and limited educational seminars following services.
- Discussed various types of sun protection and sunscreens.
    - Provided donated sunscreen samples.
- Provided post-survey assessment using the same questionnaire as the pre-survey.

Key Stakeholders

Stakeholders include the community-based church ministry and family members. As well as the ability to reach out and educate other surrounding New Haven churches.

Measures and Analysis

Pre- and post-survey responses were compared and analyzed using Excel spreadsheet.

Timeline

The project started with the pre-survey that was distributed to female members of the church 18 years of age and older October 30,2022. A total of three education sessions were conducted between November 2022 to January 2023. A follow-up post-survey was collected on February 5, 2023, 4 weeks following the last education session from female members of the congregation.

Resources

Resources included creating and printing sunscreen educational bookmarks from Staples as well as creating three educational PowerPoint sessions. Sunscreen samples were donated from La Roche-Posay, Summer Fridays, Black Girl Sunscreen and Cerave. Table 1 shown below highlights the expenses of the educational sessions.

Customized Bookmarks	**$91.42 from Staples**
Ream of paper	**$5**
QR Code	**Free via Google Forms**
Sunscreen samples	**Free**
Total Estimated Cost	**$96.42**

Table 1: Expenses

Review for Ethical Considerations

This project was evaluated by using a tool to differentiate quality improvement and research activities (Foster, 2013). See Figure 1 for this tool.

Figure 1: Differentiating Quality Improvement and Research Activities Tool

Question	Yes	No
1. Is the project designed to bring about immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on delivery of care?	X	
5. Are findings specific to this hospital?		
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection in order to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X

14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?	X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

According to Foster (2013) an answer of yes to all the items in l-l0 and no to all of the items in 11-I4 indicates that this project meets criteria for a Quality Improvement Project. It also indicates that the project does not qualify as human subjects' research. Thus, the project is excluded from any review by the Institutional Review Board (IRB). The above information and the project proposal were submitted to the university IRB and the IRB determined the project did not meet the criteria for review. The IRB approval was obtained October 4, 2022 and can be noted in Appendix B.

Phase 3: Implementation

Project Implementation

Assessment

The population that was studied for this project were African American women who were 18 years of age and older who attended an educational session on skin cancer in African Americans. A pre-survey was given to participants to gauge their knowledge on sunscreen and sun cancer prevention. The pre-survey was provided in two ways a hard copy and via a QR code that was developed for this project. A total of 22 pre-surveys were collected on the first Sunday prior to the implementation of this project following the sermon that the project was introduced.

Execution

An announcement of my survey and collection was done at the end of services when I was introduced to the congregation. The pre-survey was distributed to all African American present at the church who would like to participate and collected following church service in the congregation hall. During the Sunday pre-survey collection, bookmarks with educational sun protection as well as sunscreen samples were provided to all members of the congregation. After gaining the responses from the initial pre-survey a series of three educational PowerPoint presentations were developed. The presentations were given during the Women's Ministry meetings which were held on the first and fourth Saturdays of the month for approximately 20 minutes. The expenses for this project can be noted above. Four weeks following the last educational session a post-survey was then distributed by paper and QR code to all women congregation members 18 years of age and older. A total of 17 were collected.

Reflection

The DNP project timeline originally was to begin during the summer months shortly after presenting the project proposal to faculty and clinical mentors. However, due to conflicts in schedules the project did not start with the pre-survey until the end of October. Also, the data collection was expected to be completed by the end of 2022 but there were concerns of there being too many activities as the final educational session would be around the Christmas holiday. The final educational session was completed in the beginning of January which pushed the post survey out to February. Lastly, there was a change from poster boards to handheld bookmarks for all members to take home and

have a daily reminder of sunscreen and sun protection practices. This was an implementation adjustment which favors sustainability.

Phase 4: Evaluation

Process Measurement

The data that was collected for the study was analyzed using Microsoft Excel. Initially there were 21 participant responses for the pre-survey and on the post-survey there were 17 responders. In those responses 4 had completed both the pre- and post-surveys. The percentage of post-survey participant responses changed markedly from the pre-survey education in regard to `question 3 Sunscreen is just to be used to the beach. Responses changed from 5% saying no to 94% saying no. While there is no definitive way to determine the cause of this, it may be assumed to be a result of the education and handouts to the general congregation. The post-survey and answer responses can be noted in Appendix C and D.

Outcome Measurements

Of the initial participants four returned and completed the post-survey. Of the 17 post-survey respondents eight had attended at least one of the three educational sessions.

Results

Return on Investment

Initially there were 21 participant responses for the pre-survey and on the post-survey there were 17 responders. In those responses 4 had completed both the pre- and post-surveys. The pre- and post-survey and questionnaire highlighted the continued disparities in healthcare for African American women. As highlighted in Table 4, 77% of the participants were never asked by their physicians to use sunscreen. The educational sessions helped to inform patients of their need for sunscreen and to complete their own and/or have a health care provider complete a full

body skin check yearly. It is the opinion of this DNP candidate that providers need to be more informed of the needs of the population that they are serving. Skin is the largest organ on the body and should be evaluated regardless of skin tone or ethnicity. There is still room for improvement in the education that is being provided as there was a slight improvement in response to Question 2 in how often sunscreen should be applied from 23 % to 41% selecting the correct answer of every 2 hours. Education can be ongoing, and many participants asked for more information with the conclusion of the educational sessions.

Currently, skin cancer treatment can cost between $1,700 to over $56,000. This does not include lost wages from missed work, additional follow-up or management. Treatment of new patients will be upwards of $1.6 billion by 2030 (Lester, M., 2022). In today's market the average cost of sunscreen is $18. The cost of the educational program was roughly $96. One and twenty dollars in prevention versus over $56,000 in reactive costs is another benefit of the provided educational sessions.

Phase 5: Dissemination

Implications of Project Results to Organization and Practice and Community

This project highlighted the need to educate the Black community about skin cancer prevention and recognition. Prior to the education session 23 % were not wearing sunscreen because they felt they did not need it or 46 % stated they did not like the white residue. Another noted project result was that 77% were not asked about sunscreen usage by their providers. These percentages, though in a small subset, implicate the misinformation and lack of education not only for African Americans but health care providers as well.

Key Lessons Learned

There were several takeaways from this project. One being how influential the church is in the Black community. Coming in as an outsider the church and women opened themselves to the education that was provided, asked questions and wanted more information. They were thankful and grateful to have the information brought to them. Another thing was that the men of the church were also interested and wanted to receive more education so there is another subset that can be reached.

As much as the church is helpful it can be hard to get returning participants. It was whoever came to service on those days. There were no identifiers outside of the birthdays which helped to gauge an age range but trying to get the initial participants to return was difficult.

Initially the education sessions were provided on Zoom following the Women's Ministry, so it was difficult at times to keep the women's attention following a 2-hour ministry session. The final education session was in person which allowed for the session to be much more interactive and was able to have a more robust session.

A final takeaway was in gathering the information prior to beginning the education sessions. Skin cancer is not dubbed as a disease that affects persons of color or Black women. However, when it is found it is typically a subset called acral lentiginous melanoma. It is predominantly found on the soles of feet, under nails and on the palms of hands, not the typical locations of melanoma. Racial disparities often find persons of color find it late, 36 % in comparison to fair complected persons and having 17% lower survival rates over a 5-year period in comparison to non-Hispanic Whites (Carter, et al., 2021). This leaves a lot of area for improvement.

Sustainability Plan

Education sessions like the ones provided could continue either through specific ministries or on educational handouts like the initially provided bookmarks. Education sessions can further go into the community with sessions being affiliated with local dermatologists. As well as community outreach programs and school health fairs. The profession does have long waiting lists like most specialties but starting the discussion and education of the healthcare field, like in primary care offices, so as not to exclude persons of color with discussions on sunscreen usage and skin cancer prevention. Sunscreen is not just for white people and persons of color need to be educated and use it.

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Appendix A

X (copy symbol as needed)	1	2	3	4	5	6	7	8
Level I: Systematic review or meta-analysis	X							
Level II: Randomized controlled trial			X					X
Level III: Controlled trial without randomization		X					X	
Level IV: Case-control or cohort study						X		
Level V: Systematic review of qualitative or descriptive studies				X				
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project								
Level VII: Expert opinion					X			

Table A1: Outcome of Synthesis Results

Legend

1 - Pichon et al., 2010

2 - Lungford et al., 2018

3 - Song et al., 2020

4 - Nahar et al., 2018

5 - Maxwell et al., 2022

6 - Basch et al., 2015

7 - Ward-Peterson, et al., 2016

8 - Corbie-Smith, et al., 2003

↑, ↓, —, NE, NR, ✓	1	2	3	4	5	6	7	8
Sunscreen	↑	↑	↑	↑	NE	↑	NE	NE
Women & sunscreen	↑	↑	↑	NE	NE	↑	NE	NE
Black women & sunscreen	↑	↑	NE	NE	NE	↑	NE	NE
Black women and skin cancer	↑	NR	NE	NE	-	NR	-	NE
Black women and skin cancer prevention	↑	↑	NR	NE	NE	-	NE	NE
Black churches and education	NE	NE	NE	NE	NE	NE	NE	↑
Black churches and cancer education	NE	NE	NE	NE	NE	NE	NE	-

Symbol Key

↑ = Increased, ↓ = Decreased, — = No Change, NE = Not Examined, NR = Not Reported (introduced at beginning but never reported at the end), ✓ = applicable or present

Legend

1 - Pichon et al., 2010

2 - Lungford et al., 2018

3 - Song et al., 2020

4 - Nahar et al., 2018

5 - Cronin et al., 2018

6 - Basch et al., 2015

7 - Ward-Peterson, et al., 2016

8 - Corbie-Smith, et al., 2003

Figure A2: Outcome of Synthesis Table- Illustrates if the chosen articles either increased/decreased the proponents for change like education or involvement with the church. Also, if there was no change, it was not reported or examined.

Figure A3: Critical Appraisal of Evidence

Citation	**Conceptual Framework**	**Design/ Method**	**Sample/Setting**	**Major Variables Studied and Their Definitions**	**Outcome Measurement**	**Data Analysis**	**Findings**	**Level of Evidence/Quality**	**Quality of Evidence: Critical Worth to Practice**
Author **Year** **Title** **County** **Funding**	**Theoretical basis for study**		**Number** **Characteristics** **Exclusion criteria** **Attrition**	**Independent variables** **IV1 =** **IV2 =** **Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths** **Limitations** **Risk or harm if implemented** **Feasibility of use in your practice**
Article 1									
Maxwell, et al., 2022. Facilitators and challenges to health promotion in Black and Latino churches. USA the Charles Drew University/UCLA Cancer Center Partnership to Eliminate Cancer Health Disparities	Consolidated Framework for Implementation Research- using mainly the inner setting factor	Descriptive analysis study/ Readiness assessment and interview/questionnaire that was also translated to Spanish	Sample; 100 Black churches and 42 Latino churches from 2017-2018 Characteristics: **Inclusion criteria:** initially churches that already had prior relationship with researchers. Originally only Black churches then opened to Latino churches that offered min. 1 weekly service in Spanish **Exclusio**	IV1= church characteristics IV2= history of health promotion activities IV3= challenges to facilitate health promotions Dependent variables: Black or Latino church and the size of the congregation	Descriptive analysis as well as a 10 page questionnaire	Fisher's exact test fir categorical variables and Kruskal-Wallis test for continuous variables	Very large churches more paid staff than large churches (7V4). Very large churches promote physical activity 23% v 69% of large churches, good nutrition 31% v 77%. church leaders said they needed financial support & professional expertise 57% of Black church leaders v 43% Latino even with having the meeting space required and volunteers		Strengths churches are able to disseminate health information due to their large platform in the community. Limitations; smaller churches may not have the staff to constantly promote health fairs or services, different priorities based on the community cancer screening with a larger elderly population vs health eating options. If the church had a large commuter base then they may not participate in after service activities

			n criteria: none						
Article 2									
Basch, et al., 2016 An advertisement and article analysis of skin products and topics in popular women's magazines: Implications for skin cancer prevention. USA No funding	N/A	Cross sectional study of 99 issues of 14 popular US magazines marketed to women. Four market to Black or Latina.	Sample; 6142 advertisements **Inclusion Criteria:** skin Product advertisements, depicted skin products without SPF **Exclusion criteria: materials that could be torn out, staff picks, item highlights or front covers**	IV: women's health & fitness magazine IV2: parenting magazine DV: **Volume of skin cancer prevention and risk factors**	Descriptive analysis including determination of frequencies and range of frequency with the age range being <24 or >24 and relationship to marketing to Black or Latino readers	**A Chi square analysis using the IBM SPSS version 22 and inter-rater reliability of skin items measured with Cohen's Kappa.**	Sunblock advertisements with models were found exclusively in magazines for the general public of women but none in magazines targeting women of color. Avoidance of sun during peak hours and use of protective clothing & eyewear only discussed in magazines not targeted to Black and Latina populations.	Level IV/ Good quality	Strength; Highlights lack of representation in minority publications. Highlights that magazines focus on covering damaged skin then preserving healthy skin. Young models do not project sun protection techniques more so older representation Limitations; further exploration in to whether articles/magazines are promoting risky health behaviors.
Article 3									
Song, et al,, 2020. Sunscreen recommendations for patients with skin of color in the popular press and in the dermat	N/A	Google query of search terms "sunscreen" with "skin of color" "dark skin" "black skin" and compared to "white	Sample; anonymous survey given to dermatology trainees and board certified dermatologist across institutions associated with Harvard Medical	IV1: dermatologist and trainees IV2: popular press DV: sunscreen recommendation	Analyzed using Research Electronic Data Capture	SAS statistical analysis was done. 14 websites with sunscreen recommendations for patients with skin of color, 2	Of the 20 sunscreens for persons of color 70% were chemical or mixed chemical sunscreen, 30% were physical sunscreen. median sunscreen SPF was 32.5 (50 for pale complexion) and median price was $14 (11.30 for pale complexion),	Level II/ Good quality	Strengths include evidence showing dermatologist counsel dark skin patients less about sun protection in comparison to white patients, that they tend to choose cost effective option. Don't factor in skin type into recommendations and the recommended products are ones recommended at AAD conferences Limitations; Limited sample size, majority of respondents were female. It wasn't a comprehensive review of all available sunscreens

ology clinic. Boston, MA no funding		skin" "pale skin" "fair skin" as well as a survey	School in Boston, MA **Exclusion criteria;** sunscreens that were not commercially available, sunscreen had to be recommended on a min. Of 2 different unique websites.			website s had input of board-certified dermatologists. 88 sunscreens with 20 being recommended by 2 sources	Top recs Glossier, Supergoop & Black Girl Sunscreen. None of these recommendations transferred over to the white/pale skin recommendations (Blue Lizard, EltaMD, LaRoche-Posay, Aveeno, Badger, Colorscience) Survey: 218 surveys 77 consented report counsel patients with dark skin less re: sun protection sometimes 46.8%, most of the time 18.2, always \3.9%		
Article 4									
Nahar, et al., 2018. Skin cancer knowledge, attitudes, beliefs, and prevention practices among medical students: a systematic search and literature review. Australia	N/A	Systematic search and literature review	Sample; 1varoius studies with the following criteria **Inclusion criteria: 1. study participants were students who were working on their doctorate in medicine 2. studies included in the PubMed, CINAHL, ERIC & PsycINFO databases, 3 all**	IV: medical students DV1 = sun avoidance DV2 sun protection DV3SSE and/or indoor tanning behaviors	A literature review was conducted on 231 citations with 48 being selected and reviewed bas on the inclusion criteria	""	Skin care knowledge among medical students vary from moderate to high Deficiencies in sunscreen and UV light ie 23.1% aware sunscreen should still be applied on cloudy days, unaware or proper sunscreen usage. 58% want sun exposure without proper protection, 12.2% of female and 4.6% male valued being tan	Level V/Fair Quality	Need to further educate students on skin cancer and skin cancer prevention. Limitations: study sample was from several countries (Albania, Australia, Brazil, Canada, England, France, Hungary, Malaysia, Pakistan, Peru, Poland, Romania, Sweden, Turkey & US). Only 4 databases were searched. No indication of current skin cancer prevention practices of physicians only the students.

			studies including in English and non-English 5 no restriction on date of publication **Exclusion criteria:** 1. duplicate studies 2 incomplete or ongoing studies 3 literature reviews, 4 conference abstracts 5 studies with focus on clinical features or treatment of skin cancer 5. studies that didn't sample students who were pursing a doctorate in medicine 6. studies not included in PubMed, CINAHL, EriC & PsycINFO databases						
Article 5									

Pichon et al.., 2010. Sun-protection behaviors among African Americans. California, USA. Funding University of California Tobacco-Related Disease Program Grant No. 15 AT-1300	N/A	Anonymous health survey	Sample: random, statewide sample (N=2187) of AA adult residents of CA aged 18-95	IV: African American Adults DV1: knowledge of Fitzpatrick skin type measure scale DV2: use of sun protection ie sunscreen, sunglasses and wide brimmed hat	Written health survey that took 15 minutes written at a 7th grade reading level. Focus: During the summer months, how often do you do the following when you are out in the sun for more than 15 minutes	No specific model mentioned but did use a multivariate multinomial logistic regression analyses	31% (667) always engaged in at least one sun protection behavior. AA women were 3-6 times more likely then AA men to sunscreen & sunglasses. Sunscreen & sunglass usage increased with income & education and not related to age or geographic region	Level I/High Quality	Strengths: 1% refusal rate, inclusion of lower SES and segregated AA Increased generalizability of findings Limitations: Participants had to recall sun behaviors from the summer months. Seasonal biases of recall. Qualitative data from respondents who didn't endorse the Fitzpatrick skin types weren't included.
Article 6									
Ward-Peterson, et al., 2016. Association between race/ethnicity and survival of melanoma patients in the United Staes over 3 decades. No funding. United States.	N/A	Secondary analysis of National Cancer Institute's SEER Data	Sample = 185,219 adults (18 & older) with primary cutaneous melanoma from 1982-2011. **Exclusion criteria:** Duplicate patients, under 18, patients diagnosed before 1982 and with missing survival information	IV: race/ethnicity DV1: mortality	Cox proportional hazards regression to estimate unadjusted and adjusted hazard ratios. P value < .05= statistically significant	Kaplan-Meier analysis for estimation of overall survival, 3 different models for cause-specific and all –cause mortality: site at diagnosis, gender, age and decade of diagnosis	50% of all patients diagnosed in situ or localized stage. Non-Hispanic white patients more frequently. More men than women. Non-Hispanic Black females lowest percentage. Melanoma was in the lower limb for non-Hispanic Black, Hispanic and other race (43.2%, 28.9%, 28.5%). Non – Hispanic White located in the trunk (31.0%)> Highest percentage of distant stage diagnosis non-Hispanic Blacks at 7.1% other races	Level III/God Quality	Strengths: use of High-quality SEER data. Showed that melanoma incidence was higher in Hispanic and non-Hispanic Black women younger than 49. Limitations: 12% of cases had to be excluded because of missing data. Follow up period wasn't the same for the 3 decades. Didn't account for all factors of survival including demographics, treatment regimes and prognostic factors

							5.3%. Non-Hispanic Blacks had the worst unadjusted survival compared to other races.		
Lungsford, et al., 2018. Skin cancer knowledge, awareness , beliefs and preventive behaviors among black and Hispanic men and women . no funding .	N/A	18 focus groups conducted in English from May 31-June 27 2017. Dispersed by age 18-29 vs 30-44, skin cancer risk profile classification, race/ethnicity	Setting: International **Inclusion criteria:** Born or lived in the US >10 years, age 18-44, identify as black or Hispanic/ Latino	IV: Black and Hispanic population DV: knowledge, awareness, beliefs, behaviors & perceived risks related to skin cancer DV2: health information seeking behaviors DV3 exposure to skin cancer messages in digital or traditional media	Responses were digitally recorded and transcribed, trained staff reviewed audio files, transcripts placed in QSR International's NVivo 11 software for analysis.	Content analyzed with constant comparative method and ground theory approaches.	159 participants 45%(N=72) Black 55%(N=87) Hispanic. Majority used Google and WebMD to answer questions, WebMD was a trustworthy source. General information not catered to Blacks/Hispanics. Use of alternative sources like blackdoctor.org . Infrequent messaging about skin cancer exposure and sun protection messages. Hispanics report messaging from a variety of sources. Younger participants got information from celebrities. Majority of Black respondents had a low perceived risk or skin cancer due to skin tone	Level III/ Good quality	Strengths: largest known qualitative assessment comparing KABB among Hispanic and Blacks by age and risk status. Large feedback provided. Limitations: Results still based off small sample even with larger. Diverse group but mainly from urban areas.
Article 8									
Corbie-Smith, et al., 2003. Trust, benefit, satisfac	Critical Elements in Community-based Participatory	A RCT tested a cancer prevention intervention in member	Setting: global **Inclusion criteria:** 60 churches	IV: **participants** IV2: pastor IV3: church	A score system using the Cronbach's alpha ranging from .66-.73)	SAS software version 8 for analyses.	1309 participants from 60 churches. Members with less education and/or members for longer	Level I/ Good quality	High levels of trust depending on the educational level as well as the size of the congregation and leadership demonstrated that the church does motivate

tion and burden. A randomized controlled trial to reduce cancer risk through African-American churches. Grants from the National Institutes of Health (R01CA73981, R01 CA73981-50651, and KOH HL04039) and the Robert Wood Johnson Minority Medical Faculty Development Award.	Research (CBPR) model	s of African American churches. Data was collected at baseline and 1 year follow-up.	in 8 North Carolina counties -100 or more active members, 90% AA, no previous participation in substantial nutrition education in last 10 years **Later made a measurement group of 15-35 volunteers from each church age 18-75, attended service in last month, not pregnant/breastfeeding and able to make dietary changes**	size DV: trust in the project/team DV2: benefit of being involved DV3 satisfaction of project DV4: perceived burden in participation	with questions with binary responses	The bivariate relationships between each independent variable and dependent variable was examined. A Chi-square test was uses for statistical significance.	and/or of smaller churches were more trusting of the program. Higher church attendance had greater involvement with the PRAISE program		community members. Limitations: how much the measurement group is a true representation of the entire congregation. Limited generalizability.

Appendix B

IRB#221004A - Exempt Status Request

You forwarded this message on Tue 10/4/2022 3:45 PM
You forwarded this message on Tue 10/4/2022 3:45 PM

Taber, Prof. Christopher B.

To:
- Mitchell, Lauren

Cc:
- Alp, Feride F. 'Funda';
- Londo, Madeline C.

Tue 10/4/2022 12:56 PM

Dear Applicant,
Thank you for your submission to the IRB requesting exempt review. Based on the application submitted, the IRB is pleased to approve your submission and we wish you great success in your research.

Sincerely,
Christopher Taber
Chair, IRB

Christopher B. Taber, PhD, CSCS, USAW3, EP-C, PES
Director, Exercise and Sport Science M.S. Program
Associate Professor
College of Health Professions
Sacred Heart University
(203) 396-6342

Figure B1: IRB approval email

Appendix C

Sunscreen Survey

Did you receive a bookmark? Yes No

Did you participate in any of the educational sessions? Yes No

1. **How early should you apply sunscreen before going outside?**
    a. **15 to 30 minutes**
    b. **Just before I walk out the door**
    c. **When I get to it**
2. **How often should you apply sunscreen?**
    a. **Once a day**
    b. **Every 2 hours**
    c. **Only after you've gone swimming.**
3. **True or False: Sunscreen is just for the summer or when you're at the beach.**
    a. **True**
    b. **False**
4. **What is your major deterrent for not wearing sunscreen?**
    a. **Cost**
    b. **White residue**
    c. **I don't need it.**
5. **My doctor asks me if I use sunscreen at every visit?**
    a. **Always**
    b. **Sometimes**
    c. **Never**
6. **What is the difference between SPF 30 and 50?**
    a. **_____**
7. **When should you visit a dermatologist?**
    a. I don't need one.
    b. Every 6 months and then yearly.
    c. Only when I have a problem.
8. **What else can I do besides wearing sunscreen to protect my skin?**

a. Wear long sleeves and a hat.

b. Avoid the sun during peak sun hours (midday).

c. I don't need to do anything.

d. A & B

If you participated in the educational sessions what is something that you liked?

If you participated in the educational sessions what is something that you would like to have improved?

What is something that you would like to learn more about if there were more educational sessions?

Any questions/concerns/comments about sunscreen and skin protection.

Date of Birth:_____

Figure C1: Sunscreen post-survey

Figure C2: Educational bookmarks

Appendix D

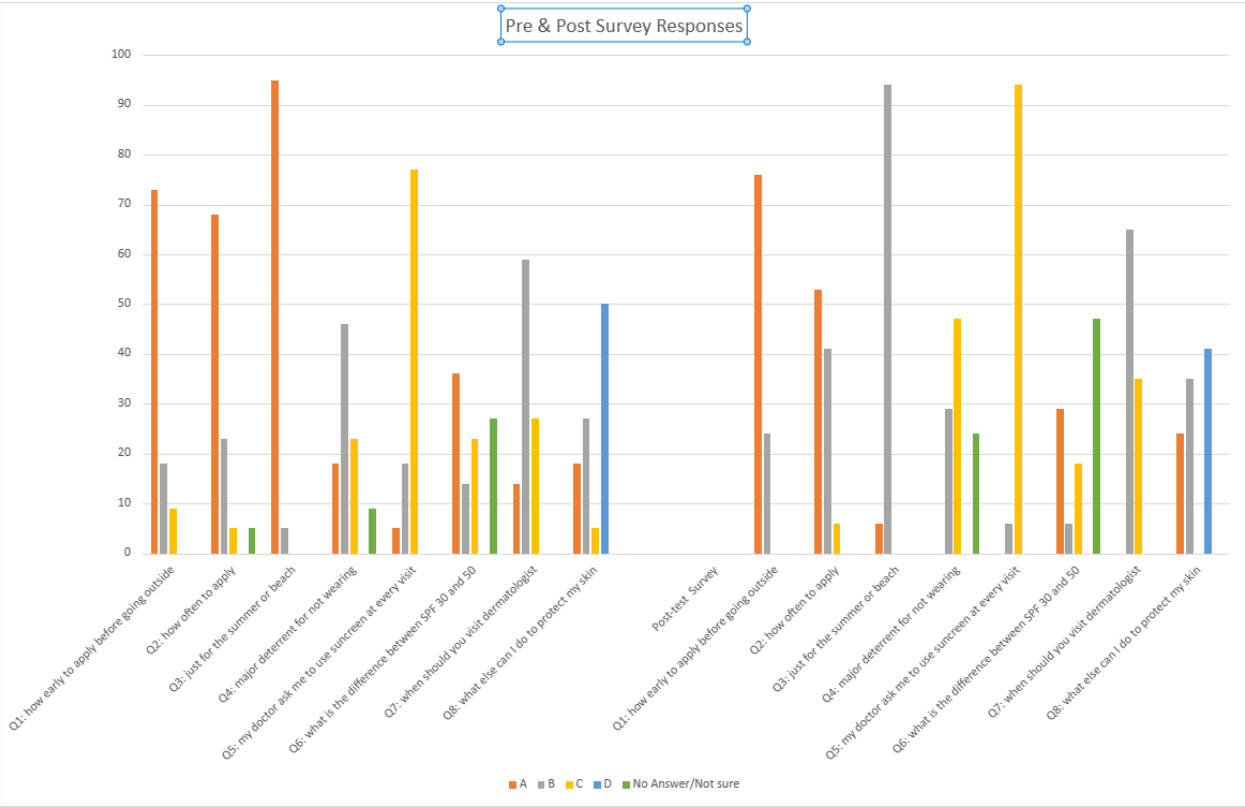

Table D1: Pre- & post-survey responses

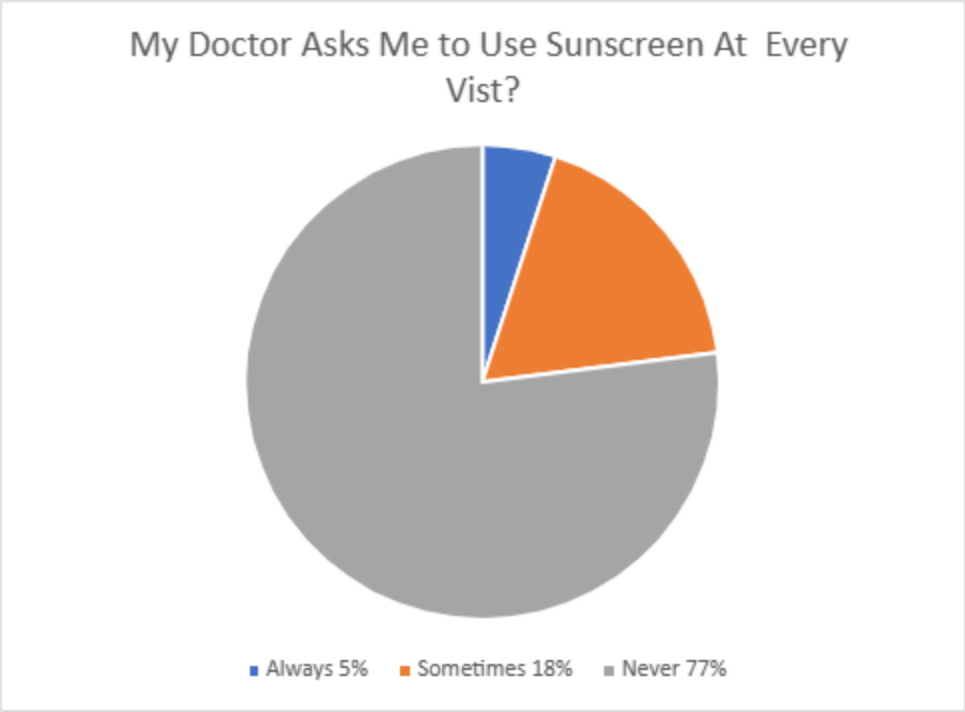

Figure D2: Pre-survey responses to question 5- My doctor asks if I use sunscreen at every visit?

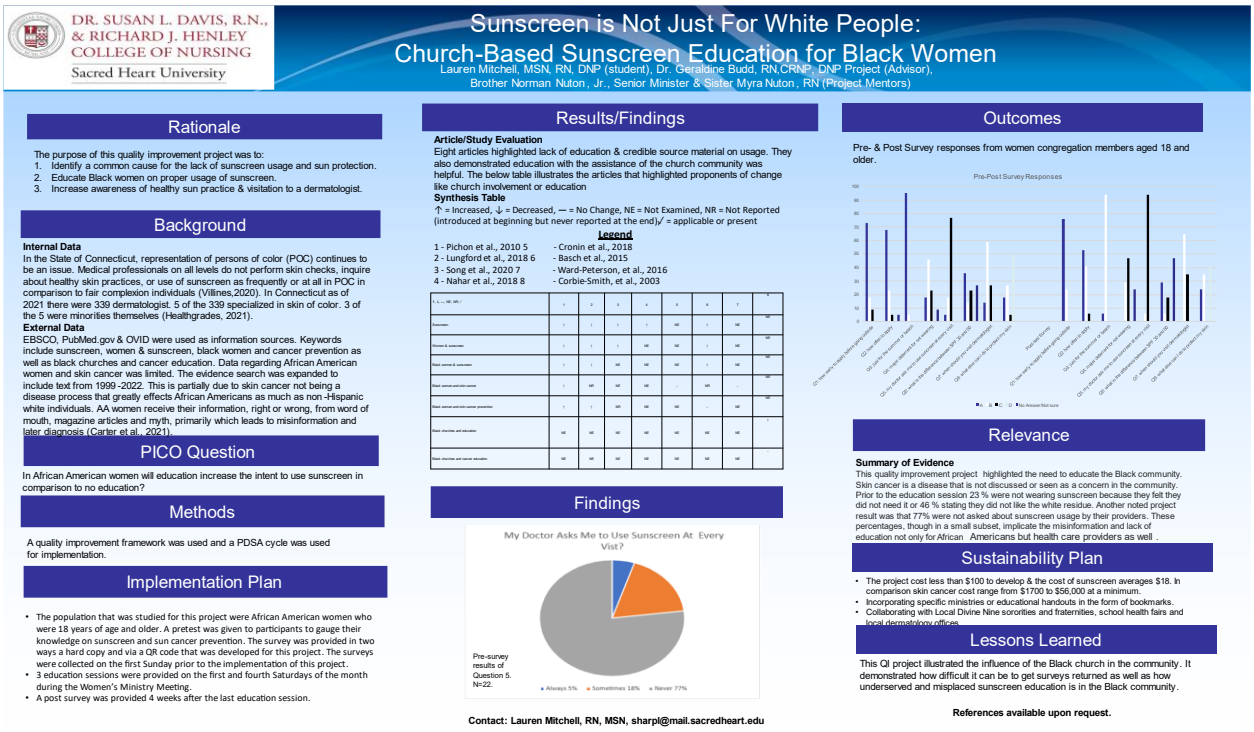

Figure D3: Poster Dissemenation Presentation

Appendix E

Executive Summary

African American women are an underserved population in healthcare, particularly in regard to skin cancer prevention. The lack of education and misinformation surrounding skin cancer has resulted in a general mistrust of the healthcare system amongst African Americans. Proper education on sunscreen use and skin cancer screening is essential to prevent late diagnosis of skin cancer and to promote prevention efforts.

This quality improvement project utilized evidence-based practice to provide education on the proper use of sunscreen and why African American women should undergo skin cancer screenings in a faith-based setting in Southern Connecticut. The goals of the project were to identify common causes for the lack of sun protection and sunscreen usage in African American women, to educate African American women on the proper usage of sunscreen and to increase awareness of healthy sun practice and to have African American women visit dermatologists for annual skin checks.

A pre survey was conducted to assess the knowledge of potential participants, and educational sessions were developed based on their responses. Women 18 years of age and older in the Women's Ministry received three educational sessions, and a post survey was conducted at the completion of the final session. The principles of the Plan-Do-Study-Act guided this project. The Plan portion was a pre-survey provided to female members of the congregation after service to gauge previous sun protection knowledge. The pre-surveys were collected using a physical paper survey and a QR code developed for the project. The Do section were the three educational sessions provided to participants attending the Women's Ministry on the first and fourth Saturday of the month. Act involved distributing a post-survey four weeks after the final

educational session. Afterwards, the study pre- and post-survey responses were compared and evaluated.

Education seminars were available to all members of the congregation and pre-survey data was collected from 22 participants. Participants were given a bookmark containing skin cancer facts as well as sunscreen samples. Seventeen women completed a post survey, with three participating in both the pre- and post-survey. The survey responses were compared to determine the percentage of improved knowledge following the education sessions. The surveys highlighted the areas of disparity in the African American community regarding the lack of knowledge on sun care health.

Deviations from the original plan included transitioning from education being provided through poster boards in the church to creating bookmarks that allowed members to have a daily reminder of healthy sunscreen practice. The timeline was pushed back due to education sessions conflicting with major holiday events. Finally, the post-survey response pool was smaller and included 4 of the initial pre-survey participants.

The cost of the project was inexpensive considering the value it provided. The cost of printing bookmarks and surveys was less than one hundred dollars. In comparison, skin cancer treatment costs range from $1,700 to $56,000 without factoring in lost wages. The low cost of producing this project it can be sustained through church outreach programs, sorority and fraternity programming, health and school fairs.

This quality improvement project underscored the need to educate the African American community on skin cancer prevention. Skin cancer is not seen as a significant concern in the African American community, and the lack of knowledge and misinformation has resulted in

inadequate sun care practices. Prior to the education session, 23 % were not wearing sunscreen because they did not believe they needed it, and 46% did not like the white residue. An alarming 77% stated they were not asked about sunscreen usage by their providers. Although the sample size was small, the findings demonstrate the need for education not only for African Americans but health care providers as well.