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Sun protection behaviors among people living with HIV

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Abstract

People living with HIV (PLWH) are at increased risk for both melanoma and nonmelanoma skin cancers, but there is currently no data on sun protection behaviors among PLWH. We created a 28-question paper survey to collect information on patient demographics and sun protection behaviors among PLWH. We found that although 71.6% of respondents reported spending at least 30 minutes to two hours in the sun daily, only 29.7% reported consistent use of sunscreen. In addition, 41.9% rarely or never received sunscreen counseling by their healthcare providers. There is therefore a need for increased training for healthcare providers in sun protection behavior counseling for PLWH.

Keywords: counseling, HIV, skin cancer, sun protection, sunscreen

Introduction

People living with HIV (PLWH) are at increased risk for skin cancer [1]. The incidence of nonmelanoma skin cancer including basal cell carcinoma and squamous cell carcinoma in PLWH has been reported as three times that of HIV-negative individuals [1]. Nonmelanoma skin cancers that arise in this population tend to be multiple and recurrent; they have a worse prognosis compared to these cancers in HIV-negative individuals [2]. Among PLWH, melanoma incidence is also increased and associated with a poor prognosis [2,3].

Sun protection behaviors are highly important in the prevention of skin cancer [4] and previous studies have found racial and socioeconomic disparities in such behaviors [5]. This study sought to assess sun protection behaviors and attitudes among PLWH, on which there is currently no data, to our knowledge.

This study was approved by the University of California San Diego (UCSD) Institutional Review Board. An anonymous, 28-question paper survey was designed to collect information on patient demographics and sun protection behaviors. Face validity was established by having two different experts review and revise the survey. Our study population was comprised of a consecutive sampling of patients identified in an HIV specialty clinic. The survey was conducted from October through December 2020 at the UCSD Owen Clinic, an HIV/AIDS treatment center. Participants were recruited by approaching them in the clinic waiting room and asking if they would be willing to participate in a survey. Survey responses were entered into Google Surveys, and then data was downloaded into Microsoft Excel for analysis.

Results

Eighty-eight individuals were asked to participate in our survey, and seventy-five individuals agreed and completed the survey, yielding a response rate of approximately 85%. Demographics and baseline characteristics of respondents are categorized in [Table 1](#). The average age was 46 years. The majority were White (50.7%) or Hispanic/Latinx (36.0%). The

majority (82.4%) identified as cisgender male, with the remainder of participants identifying as cisgender female (6.8%), gender non-conforming (4.1%), transgender male (1.4%), or transgender female (1.4%). Regarding sexual orientation, the majority of survey participants self-reported as gay (74.3%), but 17.6% reported as heterosexual and 6.8% as bisexual. All patients were PLWH. Although 71.6% of respondents reported spending at least 30 minutes to two hours in the sun daily, only 29.7% reported consistent use of sunscreen (Table 1). The most common reasons cited for wearing sunscreen were to avoid sunburn (76.9%), skin cancer (38.5%), and wrinkles (24.6%). For those who do not wear sunscreen, the most commonly cited reasons were forgetfulness (42.0%), too greasy (23.6%), too much trouble (20.0%), and too smelly (16.4%). Regarding intentional ultraviolet exposure, 18.9% reported using a tanning bed >20 times and 17.6% sunbathe at least a few times per month. In this group of patients, 63.0% had seen a dermatologist prior and during these dermatology visits, but only 57.1% reported receipt of sunscreen counseling. Also, 41.9% rarely or never received sunscreen counseling by other healthcare providers.

Discussion

There are many preventive care considerations for PLWH, including immunizations, malignancy screenings, sexually-transmitted infection screenings, and behavioral risk reduction counseling [6]. People living with HIV are at increased risk for multiple non-AIDS related malignancies [6]. However, studies have found that adequate cancer screening is lacking in this population; one study found that 50-64.8% of age-appropriate PLWH never had an anal pap smear, 36.2-46.5% never had a colonoscopy, 12.7% never had a mammogram, and 7.9% never had a cervical pap smear [7].

Our study demonstrates a lack of adequate preventive behaviors for skin cancer among PLWH. Overall, we found a low level of sunscreen use and a high percentage of individuals endorsing tanning booth use >20 times. Of note, the majority of our participants were gay, male individuals, a

demographic that accounts for nearly two-thirds of new HIV infections each year [8]. Increased skin cancer in the gay, male population has been attributed in part to increased indoor tanning [9]. Owing to the increased risk for skin cancer among PLWH, it is especially important for physicians to engage in sun protection counseling for this population. The results of our study suggest that this counseling is currently suboptimal. Prior studies have demonstrated similar results; in one study in HIV negative patients, providers reported mentioning sunscreen only at 0.9% of all patient visits [10]. Sunscreen recommendation was 12 times greater for patients with a prior history of skin disease. Our study demonstrates that although recommendations regarding sun protection habits is higher in HIV positive patients, a large proportion of patients at high risk for skin disease are not receiving sufficient counseling. Currently, there is adequate evidence to support behavioral counseling interventions in adults older than 24 years, with consideration to the presence of risk factors for skin cancer; patients who receive counseling engage in sun protection behaviors more often than patients who do not [11]. Training healthcare providers on sun protection behavior counseling for PLWH is a potential area of quality improvement in patient care and outcomes.

There are several limitations to our present study. The data obtained in this study is self-reported and subject to response and recall biases. These self-reported responses may be exaggerated or misleading and therefore must be validated through a larger sample size. In addition, patients answered specific questions that are not found on a medical record and therefore cannot be validated. In our study, there was limited data on trans-gender individuals as well as cis-gender and/or lesbian women, which restricts our analysis to mainly gay, cis-gender men. Also, the majority of our participants were White or Hispanic/Latinx and further studies with a more diverse population are necessary to determine if there are racial disparities in sun protection among PLWH as there are in HIV-negative individuals. Regarding sun protection behaviors among non-PLWH, differences across racial and ethnic groups were most apparent for sunscreen use

with White individuals engaging in sun-protection habits more often than Black and Hispanic individuals [12]. Lastly, our analysis focused on HIV-positive individuals and a larger cohort including HIV-negative patients is needed to assess differences in sun protection practices between these two groups.

Conclusion

Overall, our study demonstrated low levels of sun protection behaviors and suboptimal sun protection

behavior counseling by physicians for PLWH, a group at increased risk for skin cancer. Adequate behavioral counseling regarding sun protection practices is a potential area of quality improvement in patient care and outcomes for PLWH. Further studies assessing sun protection behaviors in a more diverse study population including HIV-negative individuals are warranted.

Potential conflicts of interest

The authors declare no conflicts of interest.

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Table 1. Patient demographics and skin cancer risk (survey questions 1-12), sun protection behaviors (survey questions 13-28).

1. Age		
Mean	46	
Range	24-73	
	N (75)	%
2. Ethnicity		
American Indian or Alaska Native	2	2.7
Asian	2	2.7
Black or African American	7	9.3
Hispanic or Latino	27	36
Native Hawaiian or other Pacific Islander	1	1.3
White	38	50.7
3. Gender Identity		
Cisgender female	5	6.8
Cisgender male	61	82.4
Transgender female	1	1.4
Transgender male	1	1.4
Gender non-conforming	3	4.1
Prefer not to answer	3	4.1
4. Sexual orientation		
Heterosexual	13	17.6
Gay	55	73.4
Lesbian	0	0
Bisexual	5	6.8
Prefer not to answer	1	1.4
5. Highest level of education		
Middle School	1	1.4
High School, no diploma	4	5.4
High school graduate or equivalent (GED)	7	9.5
Some college credit, no degree	17	23
Trade/technical/vocational training	7	9.5
Associate's Degree	8	10.8
Bachelor's Degree	12	16.2
Master's Degree	11	14.9
Professional Degree	1	1.4
Doctorate Degree	5	6.8
No formal education	1	1.4
6. Average yearly income		
Under \$40K	39	52
\$40K-\$60K	8	10.7
\$61K-\$80K	6	8
\$81K-\$100K	4	5.3
\$101K-\$120K	4	5.3
\$121K-\$140K	1	1.3
Over \$140K	7	9.3
Prefer Not to Answer	6	8
7. Form of housing		
Apartment or house that you rent	44	60.3
Apartment or house that you own	13	17.8
Condominium	1	1.4
In a friend's or family member's apartment or house	9	12.3
In an emergency shelter	0	0
In transitional housing	4	5.5
Homeless	2	2.7

8. Skin type		
Burns easily, never tans	2	2.7
Burns easily, then develops light tan	11	14.9
Burns moderately, then develops light tan	29	39.2
Probably does not burn, develops dark tan	16	26.1
Does not burn, naturally dark skin	16	21.6
9. Number of sunburns in past year		
0	57	77
1 to 3	14	18.9
More than 3	3	4.1
10. Average sun exposure per day		
Less than 30 minutes	21	28.4
30 minutes to 1 hour	24	32.4
1-2 hours	20	27
More than 2 hours	9	12.2
11. History of skin cancer		
Yes	5	6.8
No	68	93.2
12. Family history of skin cancer		
Yes	6	8.2
No	63	86.3
Unsure	4	5.5
13. Sun Protection Measures (circle all that apply)		
Minimize time spent in sun	45	61.6
Wear hats/protective clothing	33	45.2
Wear lip balm with SPF	20	27.4
Wear sunglasses	34	46.6
Perform regular self-skin checks	12	16.4
Get regular skin checks by a healthcare provider	7	9.6
14. How Often Do You Wear Sunscreen?		
Always, on face	22	29.7
Sometimes	21	28.4
Rarely	14	18.9
Never	17	23
15. I use sunscreen to...(circle all that apply)		
Avoid getting sunburned	50	76.9
Avoid getting skin cancer	25	38.5
Avoid getting wrinkles	16	24.6
Moisturize my skin	18	27.7
Avoid getting too tan/dark	6	9.2
Other (e.g., minimizing freckles)	4	6.2
16. I do not use sunscreen because...(circle all that apply)		
It is too much trouble	11	20
I often forget	23	41.8
It is too greasy	13	23.6
It is too messy	8	14.5
I am dark skinned	11	20
I am allergic to it	2	3.6
It causes me to break out	5	9.1
It is too expensive	4	7.3
I can't get tan if I use sunscreen	1	1.8
Other (e.g., I don't like the smell)	9	16.4
17. How many times have you used a tanning booth?		
0 times	47	63.5
1-5 times	8	10.8

5-10 times	5	6.8
More than 20 times	14	18.9
18. How often do you lay out in the sun to get a suntan?		
Never	45	60.8
A few times per week	5	6.8
A few times per month	8	10.8
A few times per year	16	21.6
19. Have you ever seen a dermatologist?		
Yes	46	63
No	27	37
20. If you answered yes to the previous question (have you ever seen a dermatologist?), what condition did you see the dermatologist for?		
Skin check	26	63.3
Rash	8	18.2
Hair issue	3	6.8
Cosmetic Procedure	9	20.5
Acne	5	11.4
21. If you answered yes to the previous question: at your last visit, were you counseled about sunscreen use?		
Yes	24	57.1
No	18	42.9
22. In general, how often are you counseled on sunscreen use by your healthcare providers?		
Very often	8	10.8
Sometimes	16	21.6
Rarely	19	25.7
Never	31	41.9
23. How would you classify your skin cancer risk?		
High risk	6	8
Moderate Risk	13	17.3
Low risk	39	52
No risk	10	13.3
Unsure	7	9.3
24. Do you believe that sun exposure is good for your health?		
Yes	51	69.9
No	18	24.7
Unsure	4	5.5
25. Do you believe that sunscreen is needed for less than 30 minutes of sun exposure?		
Yes	41	54.7
No	16	25.4
Unsure	15	20
26. Do you believe that sunscreen is needed if it is cloudy outside?		
Yes	50	66.7
No	19	25.3
Unsure	5	8
27. Do you believe that sunscreen is necessary when you are driving?		
Yes	35	46.7
No	30	40
Unsure	10	13.3
28. Do you believe that sunscreen is safe?		
Yes	55	73.3
No	5	6.7
Unsure	15	20