

Knowledge, Attitude, and Practice Towards Usage of Sunscreen and Prevention of Skin Cancer Among Doctors of a Tertiary Care Hospital: A Cross-Sectional Study

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Abstract

Objective: Skin cancer is preventable but nowadays it is one of the fastest growing cancers, especially in South Asia. The purpose of this study is to assess knowledge, attitude, and practice towards usage of sunscreen and prevention of Skin Cancer among Doctors of a Tertiary care hospital.

Material and Methods: A cross-sectional study was conducted using a validated structured questionnaire covering the areas of knowledge, attitude, and practice of the study participants.

Results: A total of 150 Doctors participated in this study, 68 men and 82 women. Among the total participants, only 10 (6.66%) were aware that sunscreen reduces sunburns. In contrast, 16 (10.66%) of the candidates denied any sunscreen application as they found it to be useless. 10% of the participants always used sunscreen whereas the majority (21.33%), only used it sometimes. There was no re-application of Sunscreen by 83 individuals that participated in the survey; however, 20.66% of doctors re-applied it every hour. Protection against skin cancer was the second most common reason of using sunscreen. Majority of the doctors (n=52) avoided sunscreen as they simply forgot to use it.

Conclusion: This study has revealed that the knowledge and use of sunscreen among doctors in Lahore, Pakistan is suboptimal. Although 52.7% of participants reported using sunscreen, only 10% consistently used it, with 21.33% applying it occasionally. A substantial number of doctors in our study had poor attitudes and practices regarding sunscreen use, with many only using it during sunny months or citing reasons such as forgetfulness, greasiness, or cost as barriers.

Keywords: Sunscreen, skin cancer, prevention

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Introduction

Skin cancer is the most prevalent cancer in the United States, estimations predict that one in two people will develop some kind of cutaneous skin cancer in their lifetime.^{1,2} The annual economic cost of skin cancer in the US is estimated to be \$8.1 Billion,³ which is drama-

tically higher when compared against other forms of cancer. This leads to the rise in significance of ways that may reduce the economic and health burden of skin cancer. An important strategy is to improve health education on skin cancer particularly by promoting sun-protection. To assist in reducing the incidence rate of skin cancer, behaviours such as limit the exposure to UV light, increased use of sunscreen with a high sun protection factor (SPF) and wearing sun protective clothing are essential.⁴ Furthermore, timely diagnosis can be increased by performing regular self-assessment of the skin, and total body skin examinations performed by physicians.⁵ Reports have revealed that limiting exposure to UV light can prevent more than 5 million cases

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of skin cancer annually,⁶ and regular use of sunscreen with a SPF of 15 or higher can reduce the risk of melanoma by 50%, and squamous cell carcinoma by 40%.⁷ Sunscreens are available in forms of lotion and creams with chemicals that absorb or reflect UV radiation. These chemical filters can be either organic or inorganic.⁸ Cinnamates and Salicylates are organic filters that absorb UV radiation and convert the UV energy into heat energy. Inorganic filters such as titanium dioxide and zinc oxide on the other hand reflect and scatter UV radiation over a wider range of wavelengths.⁹ A good broad-spectrum sunscreen either physical or chemical which absorbs or reflect both UVA and UVB radiation by combining filters of different UV absorption spectra. The purpose of this study is to assess Doctors' knowledge, attitude, and practice about sunscreen usage and skin cancer prevention.

Material and Methods

A cross-sectional study was conducted from June to November 2022, amongst postgraduate training doctors of multiple departments of Shaikh Zayed Hospital Lahore, chosen by random convenient sampling. Response from 150 doctors was recorded. Informed consent was taken, and participants were assured that anonymity would be maintained. The questionnaire was composed of three sections. The first section collected information on demographics: age, gender, and department. The second sector provided a set of questions investigating skin type using the Fitzpatrick scale, sun exposure and sun protection habits, knowledge regarding sun exposure, sunscreen, and skin cancer and whether this knowledge had any effect on their sun protection habits. The third section was designed to ask regarding sunscreen application and contained questions inquiring about the reason for use, the frequency of application, the type and sun protection factor (SPF) value of the sunscreen used, and on what basis it was chosen.

The data was entered and analysed using SPSS version 24.0. Basic descriptive analyses were done for all independent variables. The differences in personal preferences and habits regarding sun exposure as well as sun protection were studied using the chi-squared test. P-values were less than 0.05 judged as significant.

Results

A total of 150 Doctors participated in this study, 68 men and 82 women, with a mean age of 26.87 and 29.81, respectively. The most common Fitzpatrick Skin Type

among participants was, type V, in 59 participants. Type 6 was the second most common type (30.7%). 13(8.7%) individuals had a family history of Skin cancer while 4(2.7%) individuals had suffered from it themselves. 52.7% of the participants reported the use of sunscreen, most commonly (20%) its use was attributed to prevent tanning. Only 19(12.66%) of the participants recognized that sunscreen prevents skin cancer, and only 15(10%) were aware that it does the same for skin ageing. Among the total participants, 10(6.66%) were aware that sunscreen reduces sunburns. In contrast, 16(10.66%) of the candidates denied any sunscreen application as they found it to be useless. 10% of the participants always used sunscreen whereas the majority (21.33%), only used it sometimes. It should be noted that, the greater number of doctors (52.66%), used sun protection only during sunny months. Most doctors (65.33%) applied sunscreen immediately before Sun-exposure whereas the second largest group (17.33%) applied it 30 mins before sun-exposure. There was no re-application of Sunscreen by 83 individuals that participated in the survey, however, 20.66% of doctors re-applied it every hour. The main prompt to use sunscreen among individuals (37.33%) was to avoid getting tanned as the majority

Table 1: Information of Participants

	Male	Female
Number	68	82
Mean Age (SD)	26.87(4.91)	29.81(6.46)
Department		
Dermatology or Plastic surgery	9	15
Surgery and Allied	36	41
Medicine and Allied	23	26

Table 2: Use of sunscreen

	Frequency	Percentage
People who use sun protection	79	52.7
People who do not use	71	47.3
Reason for using sun protection		
• For sun burn	10	6.66
• For avoidance of skin cancer	19	12.66
• Due to social pressure	5	3.33
• To avoid tanning	30	20
• To slow aging	15	10
• Do not use as it is useless	71	47.3%
How often do you use		
• Always	15	10
• Mostly	26	17.33
• Sometimes	32	21.33
• Rarely	06	4
• never	71	47.3

(56%) preferred themselves when they were not tanned, while protection against skin cancer was the second

Table 3: Frequency of sunscreen use

	Frequency	Percentage
Is your sun protection habit seasonal?		
• only during sunny months	79	52.66%
• all year round	23	15.33%
• rarely ever	58	38.66%
How often do you reapply it?		
• no reapplication	83	55.33%
• every hourly	31	20.66%
• every few hourly	36	24%
When do you apply sunscreen?		
• Immediately before sun exposure	98	65.33%
• 30 min before sun exposure	26	17.33%
• 1 hr before sun exposure	18	12%
• 2 hr before sun exposure	8	5.33%

Table 4: Reasons for use/disuse of sunscreen

	Male	Female	Total	Percentage
What prompts you to use sunscreen?				
• Skin sensitivity/condition	15	13	28	18.66%
• Doctor prescription	8	9	17	11.33%
• Avoid tan	23	33	56	37.33%
• Protection against skin cancer	16	20	36	24%
• Avoid sunburn	4	5	9	6%
• Friends/family encourage use	2	2	4	2.66%
What prompts you to avoid using sunscreen?				
• Getting tanned	0	7	7	4.66%
• Forgetting to	27	25	52	34.66%
• Applying is a hassle	4	8	12	8%
• Skin looks greasy/oily	6	18	24	16%
• Costly	13	12	25	16.66%
• It feels hotter	2	12	14	9.33%
• It is not effective	10	6	16	10.66%
How do you like yourself most?				
• When I am tanned	5	1	6	4%
• When I am not tanned	21	63	84	56%
• I do not care about my tan	9	7	16	10.66%
• My skin is naturally dark	27	17	44	29.33%

most common reason of using sunscreen. 18.66% of the participants also reported using sunscreen due to skin-sensitivity or a pre-existing skin condition. Majority of doctors (n=52) avoided sunscreen as they simply forgot to use it, while others felt that it made their skin look greasy (16%) or found it to be costly (16.66%).



Fig-1: Summary of Reasons for Sunscreen Use

Discussion

As stated in the result, our findings show that 52.7% of individuals (n=79) use sunscreen on any given day, while 47.3% (n=71) do not. According to a study done by Qin Jian Low et al.¹¹ from 2021, only 27.9% of doctors used sunscreen, while 64.7% do not. He added that 7.4% of participants only use it sometimes.¹¹ Low included pharmacists in his study as well, but we solely focus on doctors in our observations. Among all the people in our survey who use sunscreen, only 10% constantly use them, 17.33% daily, 21.33% occasionally and only 45% use it infrequently. This demonstrates that 1 in 5 of the doctors in our research use sunscreen on a weekly basis. On the other hand, 31.9% of the medical professionals who took part in Low's study occasionally wear sunscreen. Further in-depth analysis and comparison of the two research allows us to draw the conclusion that doctors in Low's study apply sunscreen more frequently, with 37.8% of his participants doing so at least once per day. Sunscreen use as a benefit is another comparable factor. While just 2.66% of the doctors in this study use sunscreen to prevent malignancies, 93.5% of Low's participating doctors believe that it is used to prevent skin cancer. This could be attributed to education; In comparison to Pakistan, Malaysia is a more developed nation with higher levels of sunscreen usage awareness

and understanding. Doctors from a tertiary care hospital in Pakistan have comparatively little knowledge or, more likely, a poor perception of how sunscreen protects against skin cancer. Even if the doctors are aware, their attitude and practice show otherwise.

In another study conducted by Troya-Martin et al.¹² in Spain in 2015 it is reported that, of the 224 doctors who participated in the study, 22.9% applied creams before heading to the beach. The percentage of doctors who employed sun protection techniques rather than applying any cream was also mentioned, and it was 18.2%. Our study differs from Troya- Martin's in that our sample of doctors do not frequently visit beaches. Physicians from our research reside and work in the inland city of Lahore. Our study's 21.33% value of doctors who occasionally use sunscreen is equivalent to Troya-Martin's study value of 22.9% doctors who use sunscreen while at the beach. This means that regardless of location, doctors in both studies have the same knowledge and usage of sunscreen. In a Pakistani based study Muhammad Mustafa Memon et al.¹³ reported that among the medical students of Karachi, 12.9% always use sunscreen while going out in daylight. This is similar to our value of 10% of doctors who always use sunscreen. 3.4% of Memon's participant use sunscreen as a protection against skin cancers, which is significantly less than 12.66% in our study. This is a significant difference as doctors in the similar geographic area were equally aware about risk of cancers due to sun exposures.

Conclusion

In conclusion, this study has revealed that the knowledge and use of sunscreen among doctors in Lahore, Pakistan, is suboptimal. Although 52.7% of participants reported using sunscreen, only 10% consistently used it, with 21.33% applying it occasionally. A substantial number of doctors in our study had poor attitudes and practices regarding sunscreen use, with many only using it during sunny months or citing reasons such as forgetfulness, greasiness, or cost as barriers. These findings highlight the need for increased awareness and education among doctors regarding the importance and benefits of sunscreen use. This can be achieved through targeted educational campaigns, continuous medical education, and greater emphasis on dermatology during medical

training.

Conflict of Interest

None

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References

1. Melanoma of the Skin Statistics | CDC [Internet]. 2023 [cited 2023 Apr 25]. Available from: <https://www.cdc.gov/cancer/skin/statistics/index.htm>
2. Robinson JK. Sun exposure, sun protection, and vitamin D. *JAMA*. 2005 Sep 28;294(12):1541–3.
3. Guy GP, Machlin SR, Ekwueme DU, Yabroff KR. Prevalence and costs of skin cancer treatment in the U.S., 2002-2006 and 2007-2011. *Am J Prev Med*. 2015 Feb; 48(2):183–7.
4. US Department of Health and Human Services. The Surgeon General's Call to Action to Prevent Skin Cancer [Internet]. Washington (DC): Office of the Surgeon General (US); 2014 [cited 2023 Apr 25]. (Reports of the Surgeon General). Available from: <http://www.ncbi.nlm.nih.gov/books/NBK247172/>
5. Diao DY, Lee TK. Sun-protective behaviors in populations at high risk for skin cancer. *Psychol Res Behav Manag*. 2013 Dec 20;7:9–18.
6. WHO/IARC Expert Committee. Cancer Statistics [Internet]. World Health Organisation; 1979. Available from: http://apps.who.int/iris/bitstream/10665/75843/1/WHO_TRS_632.pdf
7. Green A, Williams G, Neale R, Hart V, Leslie D, Parsons P, et al. Daily sunscreen application and betacarotene supplementation in prevention of basal-cell and squamous-cell carcinomas of the skin: a randomised controlled trial. *Lancet*. 1999 Aug 28;354(9180):723–9.
8. Sander M, Sander M, Burbidge T, Beecker J. The efficacy and safety of sunscreen use for the prevention of skin cancer. *CMAJ*. 2020 Dec 14;192(50):E1802–8.
9. Gabros S, Nessel TA, Zito PM. Sunscreens And Photo-protection. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 [cited 2023 Apr 25]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK537164/>
10. IBM SPSS Statistics for Windows. Armonk, NY: IBM Corp.; 2016.
11. Low QJ, Teo KZ, Lim TH, Cheo SW, Yap WYE. Knowledge, attitude, practice and perception on sunscreen and skin cancer among doctors and pharmacists. *Med J Malaysia*. 2021 Mar;76(2):212–7.

12. de Troya-Martín M, Padilla-España L, Fernández-Morano T, Delgado-Sánchez N, Blázquez Sánchez N, Rivas-Ruiz F, et al. Sun Protection Habits and Attitudes Among Healthcare Personnel in a Mediterranean Population. *J Cancer Educ.* 2016 Dec;31(4):789–95.
13. Memon MM, Manzoor M, Ashrafi MM, Kumar S, Ul Haq Z, Irfan S, et al. Prevalence and Predictors of the Use of Sunscreen Amongst Medical Students: A Multi-center Cross-sectional Study. *Cureus.* 2019 Jun 17;11(6):e4926.

Authors Contribution

YA, GAN: Conceptualization of Project

AN: Data Collection

YA, GAN, W: Literature Search

GAN, A: Statistical Analysis

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