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Original Research Article

Knowledge, attitude and practice towards sunscreen use among undergraduate medical students in a tertiary care teaching hospital in south India: a cross-sectional study

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ABSTRACT

Background: This study was done to evaluate the knowledge, attitude and practice (KAP) of medical undergraduate students toward the usage of sunscreen as protective measures against ultraviolet (UV) radiation.

Methods: A cross-sectional survey was conducted among the undergraduate medical students in a tertiary care teaching hospital in South India. A pre-designed and validated questionnaire containing 13 questions was used to assess knowledge, attitude and practice. The filled KAP questionnaires were analyzed using descriptive statistics.

Results: A total of 100 medical students participated in our study. The mean age of respondents was 19.9 ± 0.73 years. Half of the study participants (50%) were aware of the association between long term sun exposure and skin cancer. Only 17.5% of students were aware of the correct quantity of sunscreen to be used for effective sun protection. 65% of respondents did not apply the sunscreen product 30 minutes prior to sun exposure. Only 40% of students could name at least 1 ingredient in sunscreen. Reapplication rates were 39.1% among respondents.

Conclusions: This study indicated that the awareness and level of knowledge of sunscreen use is not adequate among the medical personnel, thus requiring health education programs to emphasize the importance of regular and correct sunscreen use. It is imperative that the medical students are adequately informed regarding sunscreen benefits and skin cancer prevention as they form the future healthcare system.

Keywords: Attitude, Knowledge, Medical undergraduates, Practice, Sunscreen

INTRODUCTION

Sunscreens help to reduce the effects of photoaging such as sagging, wrinkling and photocarcinogenesis by increasing the skin's tolerability to ultraviolet (UV) radiation.¹ During the summer months, the amount of UVA energy recorded is 96.5% and UVB energy received is 3.5%. UVA can penetrate up to the dermis whereas UVB is limited to the epidermis. Both UVA and UVB radiation are likely to cause sunburn, photoaging reactions, erythema, and inflammation. India is a tropical country

and has exposure to higher degree of both UVA and UVB due to proximity to the equator.^{2,3} Eighty percent of UV-B and 70% of UV-A radiation is received between the hours of 10:00 am and 2:00 pm.⁴ There has been increase in both melanoma and non-melanoma skin cancers throughout the world. Majority of the melanomas (65-95%) are attributed to ultraviolet radiation exposure (UVR) especially UVA and UVB radiation.⁵ The incidence of skin cancers is less in dark-skinned people but due to late diagnosis, the prognosis is bad.⁶ UV radiation can also contribute to harmful eye damage like cataract.^{7,8}

Sunscreens contain active ingredients that act either as ultraviolet (UV) radiation absorbers or as physical agents which reflect and scatter radiation. This can further help in decreasing the risk of skin cancer and delay the process of photoaging. The discovery that salicylates can reduce the effect of sunburn led to the beginning of sunscreen use.⁹ However, sun protective strategies like use of sunscreen, seeking shade, staying indoors during peak hours of UV radiation are poorly utilized by the individuals. Various barriers could serve as potential causes including deficient knowledge, misconceptions regarding skin cancer risks, difficulty in initiating behavioural changes, and socioeconomic factors such as time and costs involved.¹⁰

Several studies have been conducted globally regarding knowledge and use of sunscreen. However, there is limited information involving the Indian population.^{11,12} Our study aims to evaluate the use of sunscreen on a day-to-day basis and the knowledge regarding correct sunscreen application and its benefits among medical undergraduate students who form the future backbone of our healthcare system.

METHODS

The study was conducted in KIMS, Bengaluru, a tertiary care teaching hospital in South India for a period of one month from May 2017 to June 2017. The institutional ethics committee approval was taken. The study was conducted according to Declaration of Helsinki guidelines.

It was a cross-sectional questionnaire-based study. Convenient sampling method was used to enrol the postgraduate medical students in the study. The KAP questionnaire toward sunscreen use was pilot tested on a group of 10 students and those forms were excluded from the study. The finalized validated KAP questionnaire consisted of 13 questions. All participants were detailed on the study, and those who agreed to participate voluntarily were enrolled. Verbal consent was obtained. Participants who refused to participate or failed to complete the questionnaires were excluded from the study. The KAP survey questionnaire was analyzed, question-wise and their percentage value was calculated with the help of Microsoft excel spread sheet in MS Office 2007.

RESULTS

There were 100 medical undergraduates who completed the study. Demographic characteristics are depicted in Table 1. The percentage of students who have heard of the term sun protection factor (SPF) were 87.5% out of which only 72.5% were able to correctly expand it. About 40.2 % did not know the SPF value of their sunscreen product. Only 40% of students could name at least 1 ingredient present in a sunscreen. Figure 1 shows the different ingredients in sunscreen listed by the students. Around 12.5% admitted that they experienced side effects after sunscreen usage. The common side effects experienced to sunscreens were hyperpigmentation (5/15), oily skin (2/15), rash (4/15), itch (4/15).

Table 1: Demographic characteristics of students.

Variables	Percentage
Males	56
Females	44
Mean age (years) ± SD	19.9±0.73

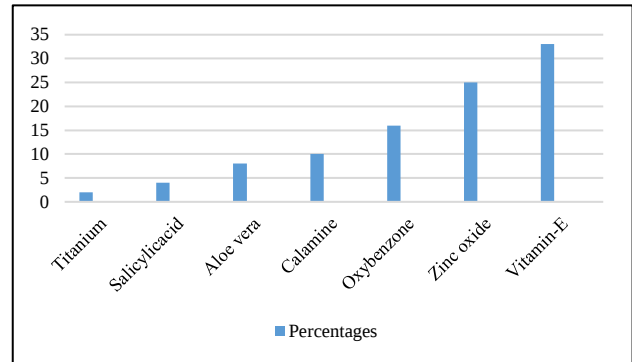


Figure 1: Knowledge about ingredients in sunscreen.

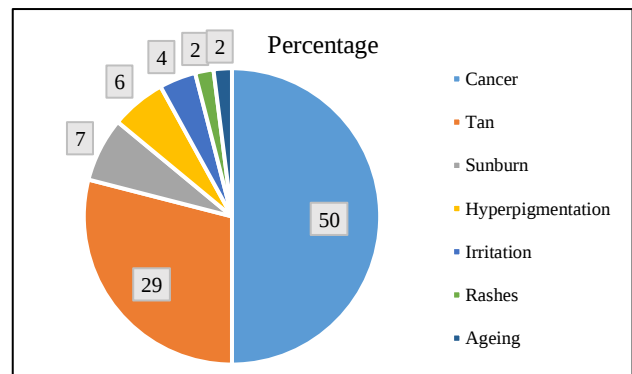


Figure 2: Long term effect of sunlight exposure.

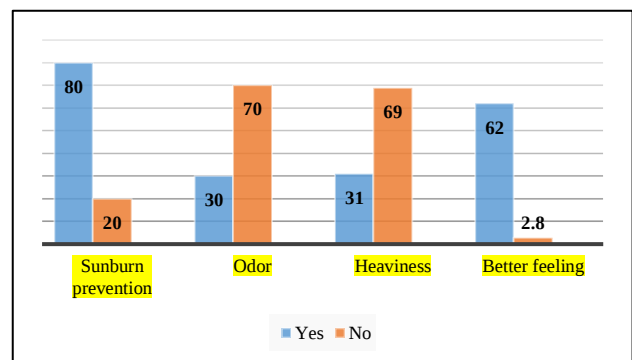


Figure 3: Attitude towards sunscreen use.

Most students (80%) agreed that sunscreen use could prevent sunburn. However, only 50 % of the study participants were aware of the association between long term sun exposure and skin cancer (Figures 2 and 3). The association of long-term sunlight exposure with hyperpigmentation was reported by 29% of students. The most commonly reported reasons for avoiding regular sunscreen usage were the odour (70%) and the heaviness

(69%) after application. A sense of better feeling after sunscreen application was reported by 62% (Figure 3). Majority of the students (82%) were aware that the period of sun exposure between 10 am to 2 pm was the most harmful.

Among the study participants, only 42% admitted to using sunscreen on a regular basis. Females who used sunscreen as a protective measure were 15% more than their male colleagues. The correct amount to be used was familiar in 18% of the students. Sunscreen was applied 30 minutes prior to stepping out by 34%. With regard to reapplication, a mere 2.5% reapplied the sunscreen. Hence, most of the students were not aware of the proper usage of sunscreens including correct amount and frequency of usage as reflected in Figure 4. About 70% of students believed that sunscreen use was not required on cloudy days.

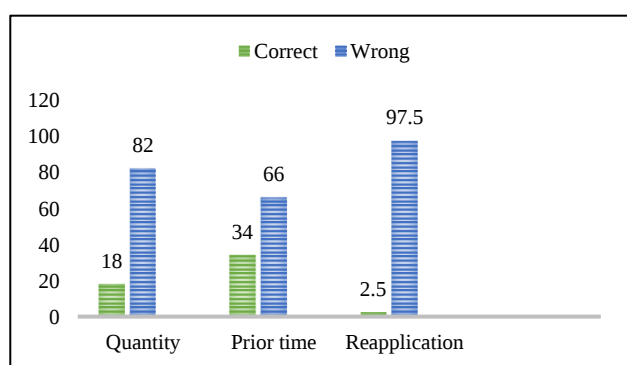


Figure 4: Sunscreen usage- correct practice.

DISCUSSION

This cross-sectional study comprising 100 medical students sought to assess the knowledge, attitudes and practices of these students regarding sunscreen use. Our survey showed that the students had varying levels of knowledge with an intermediate understanding regarding skin cancer and sunscreen use. The results of our study indicated that only half of the participants were aware of the association between long term sun exposure and skin cancer which is in concert with a previously published study in Indian population.¹¹

In our study most students agreed that sunscreen use could prevent sunburn. Regular use of sunscreen was admitted by only 42% of the participants which is a little higher when compared to a previous study.¹³ Female students were more aware of the protection offered by sunscreen against sunburn and used sunscreen more than their male counterparts. This is in accordance with previously published studies.¹⁴⁻¹⁶ The more image-conscious nature of women could be a likely explanation for this.¹⁷

Sunscreens are considered as the first line agents against protection from the harmful effects of radiation.¹⁸ The correct usage of sunscreens should be given adequate attention. In our study, approximately 82% of participants

were not aware of the appropriate quantity of sunscreen to be used and hardly 2.5% admitted that they reapplied the sunscreen regularly. Moreover, 40.2% of sunscreen users were not aware of the SPF value of their own products. This highlights that they did not consider SPF as an important aspect in the selection of their sunscreen besides being unaware of the optimal SPF required for adequate sun protection. Few studies are in accordance with our findings.¹⁸⁻²⁰ Many factors such as amount applied, how it is spread and UV absorbing properties of sunscreen determine the amount of UV exposure of sunscreen-protected skin. Due to inadequate application of sunscreen, the protection offered by it is also less than what is expected. Generally, the protection offered is one third of the SPF value of the sunscreen. Hence, to achieve 10-15-fold protection, it is ideal to use a sunscreen of SPF30-SPF50.²¹

Our results stress on the need to conduct educational campaigns to create awareness regarding the use of sunscreen products on a daily basis along with their correct application. Healthy sun protective habits should be inculcated at the school level. Health promotion including primary and secondary prevention regarding sun exposure and protection is of prime importance to improve health education.

As a limitation to this study, variables such as skin type, history of sunburns and other sun protective measures used were not included.

CONCLUSION

This study indicated that the awareness and level of knowledge of sunscreen use is not adequate among the medical personnel, thus requiring health education programs to emphasize the importance of regular and correct sunscreen use. It is imperative that the medical students are adequately informed regarding sunscreen benefits and skin cancer prevention as they form the future healthcare system.

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