

Sunscreen Awareness in Medical Undergraduates

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ABSTRACT

Introduction: Many international studies have been conducted to assess the knowledge, attitude and practices of the public towards sun exposure and sun-protection measures but very few such studies have been conducted in medical students especially in India. This study was conducted to assess awareness and proper use of sunscreens among medical undergraduates in Kashmir division of Jammu and Kashmir State in North India.

Material and Methods: A cross-sectional survey using a specially designed questionnaires was conducted on medical undergraduates of Skims Medical Collage Srinagar Kashmir. Descriptive and inferential statistics were used where appropriate.

Results: The questionnaire was completed and returned by 450 medical undergraduates including 210 males and 240 females in the age range of 18 yrs to 27 yrs. 220 out of 450 (48.88%) were using sunscreen. The sunscreen use was more among female medical undergraduates (66.66%) as compared to males (28.57%). The cosmetic type sunscreens (77.27%) were used more commonly especially by females as compared to medicated sunscreens (22.73%). The proper knowledge of time, amount, frequency, sites and seasonal use of sunscreens was very poor in medical undergraduates both males and females.

Conclusion: This study shows the use and proper method of use of sunscreens is low among medical undergraduates and suggests in need of proper training to medical undergraduates about sunscreens and their usage and also need for general public health education programs.

Keywords: Sunscreen, Awareness in Medical Undergraduates

INTRODUCTION

Ultraviolet radiation (UVR) composes only a small region of the electromagnetic radiation spectrum and is divided into three subdivisions. UVC (200-290nm), UVB (290-320nm) and UVA (320-400nm). UVA is further subdivided in UVA1 (340-400nm) and UVA2 (320-340nm). Ozone in earths atmosphere absorbs 100% of UVC, approximately 90% of UVB and virtually no UVA and hence depletion of ozone layer has lead a substantial increase in ultraviolet radiation transmission to earths surface.¹

Regulated sun exposure is beneficial to human beings because it prevents autoimmune diseases, helps to produce Vitamin D3, is beneficial in many skin diseases like psoriasis, vitiligo and increases the serum levels of endorphins. However, excessive sun exposure is related to development of skin damage, photo ageing, eye problems, DNA mutations, immune system damage and skin cancers.²

Many skin diseases are caused by excessive and unprotected sun exposure. High cumulative levels of ultraviolet

radiation can damage skin cells, affect the normal growth and appearance and cause acute skin damage like erythema, burning and tanning. Furthermore, more complicated chronic skin problems can occur with long term exposure, such as pigmentry changes (melasma, freckles, lentigenes,), skin ageing and skin cancers. The number of skin cancers has increased progressively during the past few decades. The individual risk of skin skin cancer has a robust relation with skin type, with high risk among skin type which burn easily and do not tan well. Although skin cancers are less common in dark skinned people, the prognosis is worse because the cancers tend to be diagnosed late in patients with dark skin.

All of the consequences of chronic sun exposure are likely avoidable if suitable type of sun-protection measures are taken. Avoiding sun exposure between 10:00 am to 2:00pm, seeking shade, using proper clothes and wide brimmed hat, sunglasses, avoiding tanning beds and use of topical sunscreens are main recommendations for efficient sun protection. Sunscreens reduce the transmission of UV radiation into the skin by reflecting, absorbing, or dispersing such emissions. Thus sunscreen is a form of safeguard against sunlight.^{3,4,5,6}

There are very few studies of sunscreen awareness especially in medical students.

The medical undergraduates represent the all districts of jammu and Kashmir and are well educated to give proper information. so the study of sunscreen awareness in medical undergraduates was conducted in skims medical collage bemina Srinagar to know the awereness of sunscreen usage in medical undergraduates and to infer from it the general population usage.

MATERIAL AND METHODS

The present study was a single point Cross-Sectional study conducted at SKIMS Medical Collage Bemina, Srinagar.

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The study included medical undergraduates of collage from different districts of jammu and Kashmir state. The questionnaire was composed of twenty questions regarding the participant's knowledge about the harmful effects of sun exposure, duration of sun exposure, usage of sunscreen, use of any other method of sun protection, whether sunscreen use was considered necessary, type of sunscreen used, knowledge about SPF, sun burn experience, amount of sunscreen used in tsf, frequency of application, reapplication of sunscreen, regularity of usage of sunscreen, whether used before sun exposure, duration of its usage, whether used on a rainy or cloudy day, whether sunscreen usage done by the participant himself or prescribed by the doctor, any side effects observed, sites of usage, any recreational activity, whether exposure to sun was considered harmful, whether used indoors, whether sunscreen usage changed sun exposure behavior of participant.

STATISTICAL ANALYSIS

The statistical package for the social sciences program (SPSS) version 18 (SPSS Inc., Chicago, IL) was used.

RESULTS

The present study was conducted in SKIMS Medical Collage, Bemina Srinagar. There were 450 medical undergraduates who completed study. The study included 240 females and 210 males in the age range of 18yrs to 25 yrs. The most common skin type was 3 followed by 4 and 2.

The answer was yes by most of medical undergraduates 86.66% (390/450) when questioned about whether excessive sun exposure is harmful. 220/240 (91.66) females and 170/210(80.75%) males answered yes.

The usage of sunscreens was low among medical undergraduates. Only 48.88% of medical undergraduates were using sunscreens. Among medical undergraduates, sunscreen usage was more in females (66.66%) as compared to males which was very low (28.57%). 85 (41.48%) of male medical undergraduates even did not find sunscreen usage necessary and answered no when questioned whether sunscreen usage was necessary or not as compared to 30 (13.5%) of females. Only 15.55% of medical undergraduates that mostly females (25%) were using other methods of sun protection as compared to males (4.76%).

Both cosmetic and medicated sunscreens were used by medical undergraduates. Cosmetic sunscreens (77.27%) were used more commonly than medicated ones (22.75%). Although sunscreen usage was more common in female medical undergraduates the medicated sunscreen usage was more in males (33.33%) as compared to females (18.75%) who mostly use cosmetic sunscreens (81.25%). Although most of medical undergraduates both males (85.21%) and females (83.33%) knew the full form of SPF but most of them did not know what exactly that means and what impact it has on quality of sunscreens.

The most of medical undergraduates did not knew the proper usage of sunscreens, when questioned about amount and frequency of sunscreen usage, among female medical

students most (100/160) were using $\frac{1}{4}$ tsf (30/160) $\frac{1}{2}$ tsf followed by 1tsf (20/160) and 2tsf (10/160). Among males most (30/60) were using $\frac{1}{4}$ tsf followed by $\frac{1}{2}$ tsf (20/60) and 1tsf (10/60). The most of males (56/60) were using sunscreens only once in morning and only 4/60 were using more than once in a day. Among females most (150/160) were using only once, followed by twice (5/160) and more than twice a day (5/160). All of the males (60/60) were using sunscreen just before going out in morning. similarly most females (150/160) were using just before going out and very few (10/160) were using 30 minutes before going out.

The seasonal use of sunscreen was common in both male and female medical undergraduates. Most males (58/60) and females (120/160) were using sunscreens only during summers and 40(25%) females and 2/60 (3.33%) males were using both during summers and winters. The duration of sunscreen usage extended from minimum of one month to maximum of 8yrs in both male and female medical undergraduates. The average duration of sunscreen usage was 1-5 yrs in females and less than 1 yr in females. Only 5 of 60 males and 20 of 160 females were using sunscreens during rainy and cloudy days. The face and hands were the most common sites of application of sunscreen in both males (58/60) and females (120/160) followed by neck and arm in few and none was using on body, ears, legs in both males and females. Among females self prescription was most common (80/160) followed by doctor (40/160) and acquaintance (40/160) and in males similarly among males 30/60 was self followed by doctor (20/60) and acquaintance (10/60).

The common side effects experienced to sunscreens were flare of acne (6/60), burning (2/60) and allergic contact dermatitis (2/60) in males and flare of acne (20/160), burning (12/160) and allergic contact dermatitis (10/160) in females. The use of sunscreen has changed the sun exposure behavior in 80% males and 50% females the recreational activities were common in males (200/210) than females (40/240). The cost of sunscreen used by medical undergraduates was in range of 150-700 rupees.

DISCUSSION

Many skin diseases are caused by excessive and unprotected sun exposure. High cumulative levels of ultraviolet radiation (UVR) can damage skin cells, affect the normal growth and appearance of skin and causes acute skin damage including burning and tanning. Furthermore, more complicated chronic skin problems can occur with long term exposure, such as pigmentary changes, skin ageing, and skin cancer. Individual hazard of skin cancer has a robust relation with skin type, with higher risk among skin type which burns easily and didn't tan well. Although skin cancers are less common in dark skinned people, the prognosis is worse because the cancers tend to be diagnosed late in them. All of these consequences of chronic sun exposure can be prevented if suitable type of sun protection behaviors are used. Avoiding sun exposure between 10:am to 2:pm, seeking shade, using sunscreen, minimizing sunburn, protective clothing and wide primed hats, sunglasses and use of sunscreens. Clothing

and sunglasses are main recommendations for efficient sun protection.

The sunscreens are most common used method of sun protection. The sunscreens reduce the transmission of UV radiation into skin by reflecting, absorbing and dispersing such emission, thus, sunscreen is a form of safeguard against sunlight.^{7,8,9}

There are very few studies in literature about the awareness of sunscreen usage among medical students so this study of awareness of sunscreen usage in medical undergraduates was conducted in SKIMS MCH Bemina Srinagar Kashmir.

In this study it was found that usage of sunscreen was low among medical undergraduates. Only 48.08% of medical undergraduates were using sunscreens. Among medical students sunscreen usage was more common in females (66.6%) as compared to males (28.57%). The main reason for using sunscreens was preventing skin cancer and sunburn. 85 (41.48%) of males and 30 (13.5%) females even didn't find sunscreen usage was necessary. Other methods of sun protection were used very less that too mainly by females. In a study by Al Awadh et al 2016.¹⁶ similarly low sunscreen usage was medical students as compared pharmacy students and also in this study it was seen like in our study that females were more commonly using sunscreens as compared to males. Similarly in a study by Khalid M et al found low sunscreen usage among general population.³

The students who used sunscreens mentioned that sunscreens are important to prevent sunburn and skin cancer. According to results of previous studies, there are many more benefits of sunscreen usage in addition to preventing sunburn and skin cancer, these are preventing wrinkling, ageing, pigmentary disorders, photodermatoses etc.⁶ The students who didn't find sunscreen usage necessary mentioned reason that sunlight is necessary for Vit D production but the time needed to expose skin to sun for vit D synthesis is very less and sunscreen don't prevent the same.²¹ The use of sunscreens in more females as compared males might be because females are more concerned about their appearance and are cosmetically more aware. Ideally all medical students should have been using sunscreens. Males should have been using more as males are more outdoor activities like sports and had more recreational activities and as males use less any other methods of sun protection.

The knowledge of proper use of sunscreens was very low among medical undergraduates, all males (60/60) and most females (150/160) were using sunscreens just before going out and only 10 of females and none of males were using 30 minutes before going out to sun. Ideally sunscreen should be applied 30 min before going out to sun. Most males (56/60) and females (150/160) were using sunscreens only once in morning and very few males and females twice and none of males and very few of females more than twice a day. The amount of sunscreen used by most of medical undergraduates was low with most males and females were using ¼ tsp. The sites where sunscreen was applied commonly by medical students was face and hands in both males and females and very few applied on neck and arm and none was

applying on ears, body, legs and arms.

Ideally the sunscreens should be applied properly to all sun exposed areas in a concentration of 2mg/cm² thirty minutes before going out to sun. It should be reapplied every 2 hours and after swimming, vigorous activity, excess perspiration or toweling.^{18,22}

The less amount of sunscreen use was because most of the students didn't like the white film left on skin after sunscreen application. Sunscreens containing mineral pigments can leave a white film on skin and can affect and encourage use less amount.¹⁹

The seasonal use of sunscreen was common in medical undergraduates both males and females. Most (58/60) males and females (120/160) were using sunscreen only during summers and thought there is no need to apply during winters or cloudy and rainy days. Only few males and females were using both during summers and winters or on cloudy and rainy days.

On cloudy days 80% of UV rays reach to earth as on other days so there is risk of UV induced damage on cloudy days so it is important to use sunscreen throughout year whether summer or winter and also on rainy and cloudy days.²³

The cosmetic (77.27%) type of sunscreens was used more commonly than medicated (22.73%) ones both by male and female medical undergraduates. Although sunscreen use was less common in males but medicated sunscreens were used more by males (33.33) as compared to females (18.25%). The self prescription was most common followed by prescribed by doctor and acquaintance.

Most of medical undergraduates were aware of full form of SPF but very few knew the importance of SPF and its implication on sunscreen and very few were knowing SPF of the sunscreen they were using. SPF is sun protection factor and is index of protection against sunburn or UVB induced erythema and not UVA protection. It is noteworthy that a sunscreen with SPF of 15 blocks about 93% of UVB radiation, while SPF 30 blocks 97% of UVB.²⁰ This difference of 4% makes the difference between aesthetically pleasing sunscreen and undesirable one. As most undergraduates were using less quantity of sunscreen so sunscreen with high SPF was needed. The use of sunscreen has changed sun exposure behavior in both male and female medical undergraduates because of false protection phenomenon. The duration of sunscreen extended from one month to 8 years but overall average duration of sunscreen use was more common in females as compared to males as females are cosmetically more aware. The cost of sunscreen ranged from 150 -600.

CONCLUSION

This study shows the Sunscreen use and other methods of sun protection are low in medical undergraduates especially males and cosmetic type of sunscreens are used more commonly as compared to medicated ones and knowledge of proper method of use of sunscreens is low among medical undergraduates and suggests in need of proper training to medical undergraduates about sunscreens and their usage and also need for general public health education programs.

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