The Skin We are in- Knowledge and Practices regarding Skin Cancer in Pre- Clinical Medical Students

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Abstract

Objective: To assess the level of knowledge about skin cancer in youth and to explore the influence of gender and system of education on their knowledge and practices.
Materials and Methods: A questionnaire-based study was conducted at The Aga Khan University Medical College (AKUMC), on Year 2 pre-clinical medical students. Descriptive analyses to examine the frequency distribution, chi-square test and factor analysis were applied using SPSS.
Results: Seventyone students participated in the study; 90% scored >55% in the questions regarding knowledge of Malignant melanoma (MM), whereas in the questions assessing practice only 11% of the respondents scored >52%. They were largely unaware that appearance of a new mole is a risk factor for MM (56% respondents incorrect) and that skin cancer is one of the most common cancers (54% respondents incorrect). 73% reported being sunburned at feast once during childhood and 40% suffered sunburns at least once this summer, which points to the inadequacy of sun protection. The risk of MM may double if severe sunburns are experienced during childhood. Education system and gender did not affect the knowledge and practices. The popular sources of learning about skin cancer were magazines (52%) followed by television (42%).
Conclusion: There is a need for epidemiological studies in Pakistani population regarding skin cancer. For preventing excessive solar exposure which leads to sunburns, we recommend interventions like a Pilot Program for photoprotection education and Sun Awareness Week to improve knowledge and sun protection behavior (JPMA 51:373,2001).

Introduction

Skin is the largest organ of the body and over 800,000 new cases of skin cancer are diagnosed each year world wide[1]. They account for approximately 2,100 deaths each year. Studies on the population of Northern Pakistan, comprising Northern Punjab, Northern Baluchistan, NWFP and FATA indicate that skin cancer is among the top three causes for cancer in these regions[2,3]. In NWFP skin cancer was the commonest cancer in males, accounting for 8.9% of all cancers and the second most common cancer in fern ales[3].
Malignant melanoma (MM), is a less common albeit far deadlier variant of skin cancer. The incidence varies by race: 9.2/100,000 in whites, 1.9/100,000 in Hispanics and 0.7% to 1.2/100,000 in blacks and Asians[4]. MM is documented to become the “most important cancer of the 21st century[5]. Lifetime risk for MM has increased over the years. This rising trend could be because of greater lifetime exposure to ultraviolet radiation (UVR) due to the thinning ozone, longer life expectancy and increased activities in UV intense environments[6].
Discussions with consultant dermatologists suggest that the skin cancer is “no man’s land”. A patient with a malignant skin lesion is more likely to consult a general practitioner, surgeon, or an oncologist, and rarely a dermatologist. The Institute of Radiotherapy and Nuclear Medicine (IRNUM), Peshawar states that skin cancer is the commonest cause of cancer in males in NWFP (8.9% of all cancers) and

the second most common cause of cancer in women[3]. The Armed Forces Institute of Pathology (AFIP), Rawalpindi, reports skin cancer to be the fourth (6.68% of all cancers) and second (5.63 of all cancers) leading cause of cancer in males and females respectively in Northern Pakistan[2]. The frequency of skin cancer reported from the South is not high[7]. The higher frequency of skin cancer in the North and lower in the South of the country points to the possible North-South Gradient[7]. The skin colour of the people in this region is lighter. Majority of the people also live at higher altitudes and are outdoor workers. Skin cancer is also reported to be the most common tumour in Afghanistan[8] and Iran[9,10]. It may still be a misdiagnosed or an under-diagnosed condition. A study conducted at the AFIP states that 26.3 1% of skin cancer patients did not report to a doctor after 18 months or more of their illness[2]. Studies from African and Asian countries indicate that MM does occur in non-white populations[11]. Not only does MM occur in dark- skinned individuals, but is also documented to be more virulent. A study conducted in the fair skinned Ashkenazic Jews (AJ) who immigrated from Europe and dark-skinned Sephardic Jews (Si) who immigrated from the Orient and Africa, shows that MM is less common in the dark-skinned SJ than the fair-skinned AJ, but once MM occurs in SJ it appears to have a more virulent nature[12].

Studies indicate that MM is a preventable condition. Prevention of sun exposure is recommended to decrease the high incidence rates of melanoma. The risk of MM may double if severe sun burns are experienced during childhood. Because children are exposed to sunlight for the longest period of time before age 21, therefore sun protection practices can reduce a child's lifetime risk of developing skin cancer. Primary and secondary prevention strategies (sun awareness week[13], public education campaign[14], Sun Smart Day: a pilot program for photoprotection education[15]) can assist in reducing the occurrence of melanoma and deaths associated with this cancer.

If we are to make a serious effort in reducing the morbidity and mortality from MM, it is imperative to understand the knowledge, attitude and practices in our population about a condition that is life threatening.

The objective of this study therefore was to assess the level of knowledge about skin cancer in. youth not exposed to detailed and structured courses on dermatology. We subsequently want to explore the influence of gender and system of education on their knowledge and practices.

Materials and Methods

This study was conducted at The Aga Khan University Medical College (AKUMC), Karachi. Dermatology is taught during the fourth year of the undergraduate medical curriculum. Pre-clinical students of year 2, (class of 2002) were selected for the study. These students were eligible for the study, as they have no prior detailed knowledge of dermatological disorders. They were therefore less likely to be influenced in responding to the questionnaire because of their medical background.

The study instrument comprised of a questionnaire adapted and modified from two standard questionnaires. These were designed by the Cornell University and the American Academy of Dermatology on MM in 1995[16]. Our instrument had closed-ended questions of which eleven assessed level of knowledge, seven assessed practices regarding protection from the ultra-violet radiation, and two determined preferred source of learning. Age, sex and the type of school education received (A-level and equivalent or Intermediate) were also recorded for each study subject. The questionnaire was reviewed by a consultant dermatologist at The Aga Khan University Hospital. The draft questionnaire was pre-tested on ten first year students and revised accordingly.

A class list was used to ensure participation of the entire class. A repeat survey of 10% randomly selected respondents was done to explore the validity of their initial response.

Statistical software packages Epilnfo 6 and SPSS 8.0 were used for data entry and data analysis

respectively. Descriptive analyses were done to examine frequency distribution of responses to the knowledge, sun exposure and sun protection practices and reported and preferred sources of learning. The data is reported as frequencies, percentages and means with standard deviations (SD). Chi square test was applied to determine difference in proportion analyses[17].
Factor analysis was employed to explore the data for patterns. Only those factors with Eigen values greater than one were used to stack questions under a category or factor. This also assisted to reduce the number of questions to a more manageable number and to explore inter-relationships among the variables (gender and educational system) in terms of an underlying "factor", rather than individual questions.

Results

Of the 78 students, 71 (91%) participated in the study. The demographic data obtained is summarized in Table 1.

Table 1. Characteristics of 71 respondents in survey 1999 of AKU medical students' knowledge, attitude and practices regarding skin cancer.

Characteristics	No.	%
Sex		
Female	24	34
Male	47	66
Education System		
Pakistani	29	41
Non-Pakistani	42	59
Age		
Mean	20.3 years	
Median	20.0 years	
Range	18-25 years	

Eleven questions judged knowledge about skin cancer. The mean score was 77 ± 11.5%. Fifty percent of the respondents achieved a score of 80% or more. The highest score achieved was 91% and the lowest was 45%.

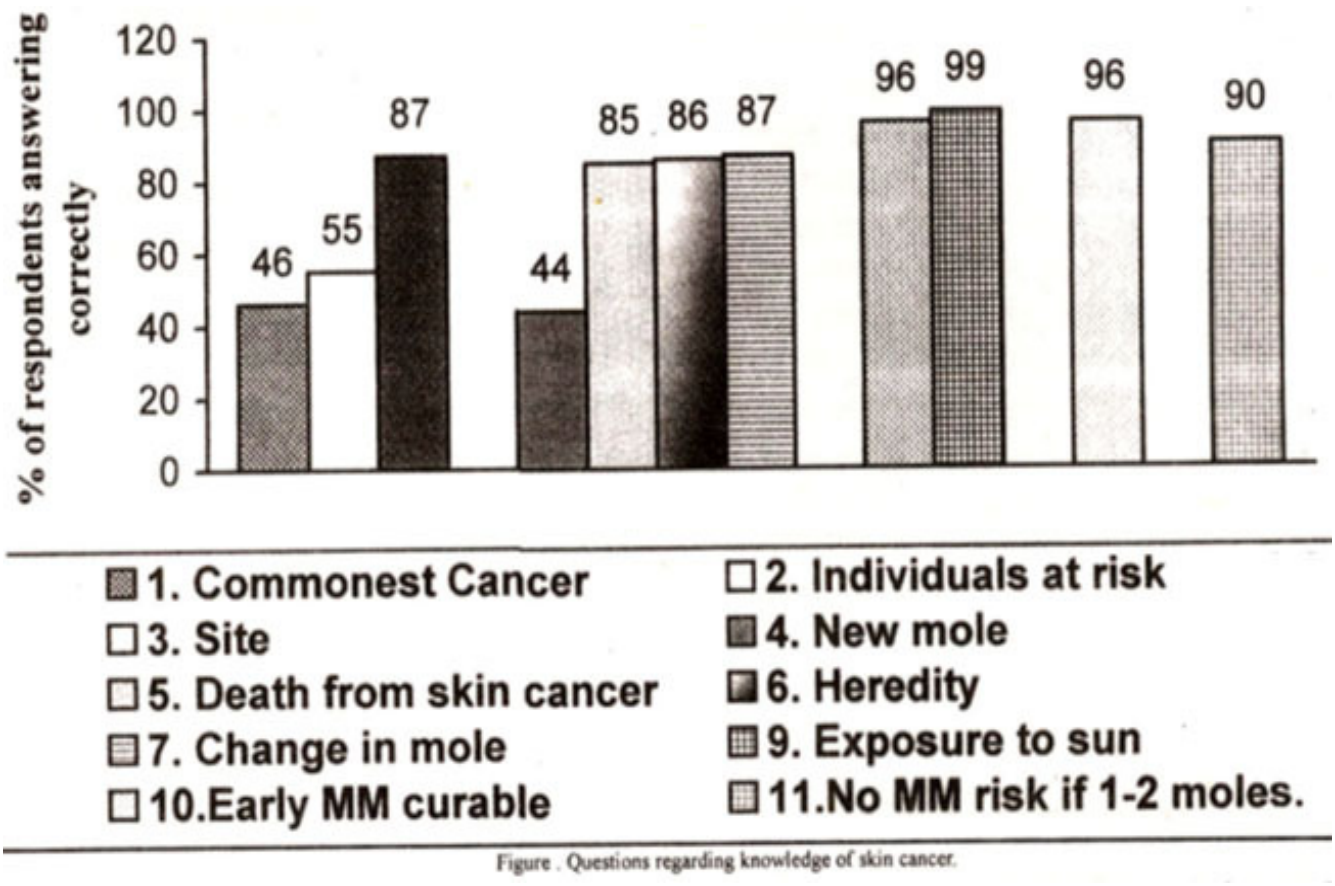

Figure . Questions regarding knowledge of skin cancer.

Figure illustrates the percentage of respondents who answered correctly. Noticeably even though more than 85% respondents were aware of the body site where MM could occur, less than 50% of the respondents were aware that it is the commonest of all cancers globally. Less than 60% of the respondents knew that redheads and blonde haired individuals were at an increased risk of developing MM. Similarly more than 50% of them were not aware that appearance of a new mole is associated with the risk of developing MM.

These responses determining the level of knowledge were also analyzed by sex and educational background of the respondents (Table 2).

Table 2. Knowledge regarding Malignant Melanoma (MM) by sex and educational background of respondents.

	Sex				Education			
	Males (N=47)		Females (N=24)		Pakistani (N=29)		Non-Pakistani (N=42)	
	n	%	n	%	n	%	n	%
Epidemiology								
Skin cancer commonest of cancers	24	51	9	37	14	48	19	45
Redheads at increased risk	25	53	14	58	16	55	23	55
Site on body	41	87	21	88	23	79	39	93
Risk factors associated with MM								
Appearance of a new mole	21	45	10	42	10	34	21	50
Change in appearance of mole	39	83	23	96	25	86	37	88
Inherited risk	39	83	23	92	23	79	39	90
Fatality	38	81	22	92	22	76	38	90
Individual risk of developing MM								
Skin complexion (dark skin)	46	98	24	100	28	97	42	100
Sun exposure	45	96	23	96	40	95	28	97

P values for Chi-statistic used to detect difference between two proportions were >0.05 for all questions asked.

Females and respondents from the Non-Pakistani system of education reported, having marginally better knowledge of risk factors such as change in appearance of a mole and heredity. However, none of these differences were statistically significant ($p>0.05$).

Table 3. Responses with exposure to practices associated with exposure to sun.

Practices	Never %	Always %	Sometimes %
Sun protection practices			
I wear sunglasses	64.8	5.6	29.6
I use sunscreen	64.8	11.3	13.9
I use sunblock year around	77.5	7.0	15.5
I wear protective clothing on beach	43.7	4.2	52.1
I wear a cap in the sun	52.1	4.2	43.7
History of sunburn			
I was sunburnt when young	26.8	8.5	64.7
I had sunburn this summer	59.2	11.3	29.5

Table 3 shows the sun protection practices and the history of sun exposure of our study population. It illustrates that even though 41% respondents reported getting sunburnt at least once, this summer and more than 70% gave a history of sunburn during childhood, a majority did not adopt practices that prevent excessive sun exposure. Generally less than 11.5% respondents reported always using a specific protective measure (such as sunglasses, sunscreen, protective clothing, cap) against sun exposure.

Scores of each of the five sun protective practices) were combined to determine if the respondent took holistic care against excessive exposure to sunlight. None of the respondents reported practicing all five sun protective measures indicating sketchy and inadequate practices.

Our results show no statistical variation ($p>0.05$) in practices according to gender, educational system or knowledge about epidemiology, risk factors or those individuals at risk of developing MM (Table 4).

Table 4. Factors influencing sun protective practices and history of sunburn.

	Total No.	Sunglasses Always		Sunscreen Always		Sunblock Always		Clothing Always		Cap Always		Childhood (3-15yrs) Sunburn		Sunburn this summer	
Sex		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Male	47	3	6	4	8	3	7	2	4	3	6	17*	36	27	57
Female	24	1	4	4	17	2	8	1	4	0	0	2*	8	15	63
Education															
Western	42	2	5	6	14	3	7	2	5	1	2	9	21	24	57
Pakistan	29	2	7	2	7	2	7	1	3	2	7	10	35	18	62
Knowledge of risk factors															
Complete	23	2	9	3	13	3	13	2	9	2	9	7	30	14	61
Incomplete	48	2	4	5	10	2	4	1	2	1	2	12	25	28	58
Knowledge of epidemiology															
Complete	24	1	4	3	13	2	8	1	4	1	4	6	25	14	58
Incomplete	47	3	6	5	11	3	6	2	4	1	4	13	28	28	60
Knowledge of individual risk															
Complete	67	3	5	7	10	4	6	3	5	3	5	18	27	38	57
Incomplete	4	1	25	1	25	1	25	0	0	0	0	1	25	4	100

All p-values>0.05 except the cell marked with an asterisk* which has a p-value of 0.026.

However a significantly greater proportion of males (3 6%) compared to females (8%) gave a history of being sunburnt in childhood (p=0.026).

Table 5. Sources of learning about MM and sun safety.

	Reported %	Preferred %
Magazines	52	98
Television	45	56
Newspaper	32	27
Internet	10	22
Others	25	15

(Multiple responses were allowed).

Table 5 illustrates the sources of learning about MM and sun safety.

Discussion

According to our study, 90% of respondents scored an aggregate of more than 55% in the questions regarding knowledge of MM, whereas in the questions assessing practice only, 11% of the respondents scored more than 52% (Table 3). Even though the respondent scored relatively better on questions pertaining to knowledge; there were some aspects of skin cancer like the appearance of a new mole of which they were largely unaware.

The relatively poor performance of the respondents on the questions assessing practices showed that they were not taking adequate sun-safety measures. Moreover, our study showed that the protective practices did not differ according to gender, which was contrary to our expectations, as we believed that the females would take better care of their skin. We also found that the education system did not affect the level of knowledge nor influenced the sun protection practices. This could be explained by the fact that the reported sources of learning were magazines.

There can be multiple reasons for their paradoxical practices. First, the respondents may not have the ability to translate knowledge into practice. For example, a respondent may know that sun exposure might eventually result in skin cancer but may not know that the use of skin screen would help to prevent that. Second, there may be a lack of perception about personal susceptibility. Third, peer pressure may also be a possible explanation for not adopting adequate sun safety practices.

International surveys of Knowledge, Attitude and Behavior have shown similar results showing a high level of knowledge but relatively poor practices. In Australia, where skin cancer prevention campaigning has been rather intensive, the desire to be tanned remained a barrier to the use of sun protection among boys and teenagers of higher grades[18,19]. Most teenagers neither used sunscreens nor wore any protective clothing in a consistent matter[18]. Studies in Norway and the USA show similar results[17,19,20].

In our study the inadequacy of sun protection was highlighted. It was also found that males had a greater incidence of sunburn during childhood than females (36% versus 8%; p-value <0.02). This frequency of sunburn in teenagers is alarming because sunburn in youth is a risk factor for the development of MM. Parents may be encouraged to actively demonstrate sun protection behaviors to

their children[21,22], especially young boys. Teenagers, who as a group remain very self-conscious about their looks, may respond to messages regarding sun protection to prevent early facial wrinkling.
While skin cancer prevention and control programs have been successful in increasing knowledge and awareness of skin cancer, there is varying success in bringing about major attitude and behavioral change. An important part of these campaigns, in particular in Australia, but more recently in Europe and the U.S. has been adoption of simple protective measures such as hats, sunglasses and protective clothing[23]. This can be effective in the largely rural and urban labor population of Pakistan who have the highest risk for skin cancer and cannot afford expensive means of sun protection.
In our survey, students indicated television (56%) as a source from which they would like to learn more about sun safety and therefore sun safety messages could be incorporated into televised programs or advertisements. These efforts could lower the lifelong sun exposure and could alter the patterns of sunburning behavior that appear to be consistent throughout a lifetime[24].
We recommend that there be more in-depth epidemiological studies in Pakistan, concentrating on all the different types of skin cancer and the risk factors for our population. We also need impact studies to verify the efficacy of interventions if carried out based on our recommendations.

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