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# A Self-Reported Study Toward Melanoma Knowledge, Protective Behavior and Personal Risk Among Nursing Faculty Students at AAB University of Kosovo

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## ABSTRACT

**Introduction:** In nowadays, melanoma is one of the major problems of public health all over the world. In Kosovo, the incidence of melanoma has shown irregular tendency with significant increases and decreases in the last five years. **Aim:** The aim of this paper was to detect the knowledge level of nursing students in Kosovo's University (AAB University) regarding melanoma and its risk factors; to evaluate their knowledge about the protection and prevention methods of melanoma as one of the main topics of dermatology and major problems of public health worldwide nowadays. Of a great importance, it was to evaluate the necessity of establishing a dermatology course in nursing curricula in Kosovo universities, as nurses have a key role in educating and promoting health in the population. **Methods:** The training was conducted through slides, photos, videos and a questionnaire was used to collect the data before and after training. Data analysis was run through SPSS program version 20.0. Data were expressed through mean values and standard deviations. T-test, Anova and regression analysis were performed to test the relationship between the protective behaviors, knowledge, personal risk and level of concern. **Results:** Results indicated a low level of knowledge and a fairly poor protective behavior among the participants. **Conclusion:** On-going training and enrichment of school curricula emerged as an intervention to increase the awareness of the students toward potential risks of melanoma and ultimate change in the protective behavior.

**Keywords:** Melanoma, Risk factors, Nurses knowledge.

## 1. INTRODUCTION

In nowadays, melanoma is one of the major problems of public health all over the world. In the USA, people with melanoma have been doubled in the last three decades (1). On average 132,000 case encounter all over the world every year (7). In Kosovo, the incidence of melanoma has shown irregular tendency with significant increases and decreases in the last five years. However, melanoma remains the skin cancer with the highest mortality rate (2). Table 1 summarizes the number of persons treated with melanoma and other malignant skin neoplasms over the years 2012-2017 in Kosovo (3). As stated in many researches, early detection of melanoma may reduce mortality (4, 5).

The occurrence of melanoma is affected by many factors such as: skin colour; eyes colour; hair colour; the number of moles; previous family histories or previous sunburnt his-

tories (7). However, the emphasis is put on exposure to sunlight and skin sunburnt history of the patient. That's why skin colour is considered of a major importance factor. People with darker skin can face a higher exposure to the sun even without being burned. On the contrary, people with lighter skin or with freckles, red-haired or those with blue eyes represent the higher risk incidence group (7).

Furthermore, patient education about the influencing factors and checking their selves regularly, plays a critical role in the early detection of melanoma (8). Thus, a time series study based on education and the promotion of health care control resulted in a tendency to reduce mortality (9,10). Another study concluded that young people were aware about the consequences of excessive sun exposure but, they did not performed prevention measures proper-

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ly (11, 12). An educational programme is helpful regardless melanoma knowledge (13).

## 2. AIM

The purpose of this study was to test if the educational program offered to students of nursing faculty at AAB University would rather affect their behavior and to evaluate their knowledge level and protective behavior toward melanoma.

## 3. METHODS

This study was conducted at AAB University in Kosovo in October 2018. The sample was made up of a total of 200 participants. The majority of the participants, (90%, 180 individuals), aged between 18-27 years. Only 33 participants (16.5%) were men, females were dominant (162, 81%). As regards the job experience, only 31 (15.5%) had work experience as nurse, while 165 (82.5%) didn't have.

Data was collected using a questionnaire before and after. The inclusion criteria to the sample was: all the first year students of nursing faculty of AAB University of Kosovo. The same group of students answered the questionnaire before and after the training about Melanoma. The pre-questionnaire consisted of 24 questions while the post questionnaire consisted of 13 questions. The questionnaire was designed to gather information about potential personal risks, the knowledge level about melanoma, the level of concern and the behavior of the students toward preventive and examination methods. The study had a pre - post comparative, analytical and descriptive character. A 5 point Likert scale was used to measure the questions. The participation to the study was voluntary. The potential range score were 0-20 for the personal risk, level of concern (0-10 points), protective behavior (0-11 points) and knowledge of Melanoma (-7 to 20 points).

First of all, the ethical committee of AAB University gave the permission to conduct the training within the faculty of nursing. After granting permission, the researcher distributed questionnaire to 200 participants attached with a cover letter which included information about the time of the survey, assured confidentiality and voluntary participation.

### Statistical analysis

Data was analyzed using the Statistical Package for Social Science version 20.0 (SPSS). A confidence level of 95 % indicated the statistical significance. Responses were expressed by mean values, percentages and standard deviation where possible. Descriptive statistics, paired t-test, repeated measures Anova and linear regression were run to analyze the data statistically.

## 4. RESULTS

Two hundred participants completed the questionnaires (response rate 100%). Only 4 surveys did not meet the criteria and were eliminated from further analysis. As regards hair colour, 39 (19.5%) participants reported having black hair, 154 (77%) reported brown hair and 7 (3.5%) reported blonde hair. Further, when asked about the number of moles, 72 (36%) reported not hav-

2012	2013	2014	2015	2016	2017
383	282	670	464	614	433

**Table 1. Cases of melanoma and other malignant skin neoplasms during 2012-2017, in Kosovo**

	Pre		Post	
	N	%	N	%
The presence of many moles in the skin	115	18.6	125	16.3
Diet/meal	31	5	13	1.7
Fair skin colour	22	3.5	83	10.8
Alcohol	54	8.7	28	3.7
Sunburn	132	21.4	176	23
Long exposure to sun	134	21.7	173	22.6
Smoking	58	9.4	31	4
Red hair	5	0.8	41	5.4
Blonde hair	4	0.6	29	3.8
Dark hair	1	0.2	12	1.6
I don't know	28	4.5	2	0.3
Blue eyes	22	3.5	36	4.7
Green eyes	13	2.1	17	2.2
Total	619	100	766	100

**Table 2. Knowledge about melanoma risk factors**

ing moles, 100 people (50%) reported having less than 20 moles, and the rest of 19 (9.5%) participants reported having more than 20 moles. Of 119 students that had moles, 13 (6.5%) had moles with irregular shape or colour. Thirty nine participants (19.5%) had never been sunburnt, 92 (46%) participants had been sunburnt one or two times during their lives, while 68 (34%) participants stated that they had been sunburnt three times or more. However, only a few were aware to practice regular medical visits. Thus, only 7 (3.5%) students had a medical visit during the last 6 months, meanwhile 191 (95.5%) didn't.

Students demonstrated a low knowledge about melanoma with respective mean values of  $7.21 \pm 2.89$  points in the pre questionnaire and  $8.8 \pm 2.31$  points in the post questionnaire (within a score interval -2 to 13 and 1 to 14 out of the potential range -7 to 20 points). The difference was statistically significant ( $p < 0.05$ ). The training played an important role in increasing the knowledge and by thus the possibilities to perform protective behavior properly. Table 2 summarizes correct answers regarding risk factors of melanoma out of 196 participants before and after the melanoma training.

The same procedure was applied also for other sessions of the questionnaire. The potential scores for the level of concern were 0-10. The actual interval was 0 to 10 with a mean value of  $4.57 \pm 2.65$ . The level of concern highlighted the negligence of participants about self-care. As regards the personal risk, a moderate risk was stated based on self-reported answers of the participants. The

mean score was  $7.29 \pm 2.62$  and the actual range was 2-14 points (the potential range was 0 – 20).

The last session of the questionnaire reported a fairly poor protective behavior with a mean value  $5.8 \pm 2.14$  and actual interval 1-11 points (out of 0-11 potential score). Only 38 participants used a sun protection cream when exposed to the sun, and 159 didn't use it. Even though, more than half of the participants (113, 57.9%) were aware that a new mole should be checked within 1 to 3 months from its appearance, still only 57 participants (out of 190) visited a dermatologist when they noticed a new mole.

The regression analysis stressed out that the protective behavior toward melanoma was depended somehow by the level of concern, personal risk and knowledge. Higher knowledge, higher level of concern and lower personal risk would improve the protective behavior. Below is given the regression equation:

Protective behavior =  $5.233 + 0.159 * \text{level of concern} + 0.115 * \text{knowledge} - 0.124 * \text{personal risk}$

Thus, an increase by 1 point on the level of concern would increase the protective behavior by 0.159 points ( $t=2.961$ ;  $p=0.005$ ); an increase by 1 point on the knowledge would increase the protective behavior by 0.115 points ( $t = 2.334$ ;  $p = 0.021$ ) and an increase by 1 point on personal risk is related with -0.124 point decrease on protective behavior ( $t = - 2.234$ ;  $p = 0.027$ ).

As regards gender or age, it was not found any statistically difference related to knowledge, level of concern, personal risks and behavior ( $p > 0.05$ ). The knowledge score for men was  $6.78 \pm 3$  and for women  $7.21 \pm 2.9$  ( $p=0.587$ ). The training was profitable for both, men and women, resulting on a higher knowledge about the potential risks. But on the other hand, further in-depth interventions should be undertaken combined with other measures to strengthen awareness about rigorous change in protective behavior.

A one way Anova analysis ( $F=3.156$ ,  $p=0.26 < 0.05$ ) reported a significant difference on knowledge between those whose skin tanned easily and those whose skin never tanned. Those with darker skin scored a mean value of  $4.28 \pm 3.45$  (actual range from -1 to 10) while those with fair skin scored a mean value of  $7.5 \pm 2.81$  (actual range -1 to 13). A Turkey HSD test indicated a mean difference  $3.26 \pm 1.13$  score between two groups ( $F=3.156$ ,  $p=0.26 < 0.05$ ) and for 95 % CI a score interval of 0.31-6.21.

The number of moles was another risk factor that influenced the protective behavior. Repeated measures Anova analysis indicated that there was a significant difference between the participant who had less than 20 moles and those who hadn't and also, those with more than 20 moles and those who hadn't ( $F=7.308$ ,  $p = 0.001$ ). A following post hoc analysis using the Turkey test confirmed that the mean difference between two first groups was  $1.10 \pm 0.31$  score ( $p=0.002$ , CI 0.3573-1.8582) and between the second groups the mean difference was  $1.42 \pm 0.53$  ( $p=0.022$ ; CI 0.1703-2.6748).

## 5. DISCUSSION

Two hundred students of Nursing faculty of AAB University of Kosovo participated the study voluntary and answered two questionnaires about the knowledge toward melanoma, protective behavior, personal risk and level of concern. Knowledge about melanoma was very low similar to other studies (14). This may be as a result of insufficient education at university. In Kosovo, the dermatology course is not included in the nursing program. The results of this study stated the necessity of including the dermatology course in the nursing program, in order to increase the level of knowledge about this topic and aware students about causes and protective measures. Enrichment of school curricula with topics about melanoma risk and protective behavior within a dermatology course, and on-going training would improve their level of concern. Contrary to other studies, there were no significant differences between males and females as regards knowledge, behavior, personal risk and level of concern ( $p>0.05$ ) (11, 15, 16). A similar study conducted in France stated that 60 % of the participants examined their selves once a year by average, while in this study only 7 (3.5%) students had a medical visit during the last 6 months, meanwhile 191 (95.5%) didn't (17).

Results indicated that those with fair hair possessed a higher level of knowledge and practiced better protective behaviors than others ( $p<0.05$ ). Many similar studies toward melanoma knowledge and protective behavior have reported the same findings (15). No significant differences were reported between other combined groups (those whose skin tanned with difficulty and those whose skin tanned always;  $p>0.05$ ), similar to other studies (16). On one hand, these findings reflect that information was owned by the most vulnerable group, but on the other hand, the risk exists even for those with dark hair. Therefore, everyone should access the right information to perform protective behaviors properly.

From the statistical analysis was demonstrated that those participants who had a greater number of moles performed more protective behaviors compared to those who had less than 20 moles ( $p<0.05$ ). However, the general protective behavior was fairly low among all the participants. The majority, 157 (78.5%) participants tried to get tanned when exposed to the sun, while only 38 (19%) used protective cream, similarly to Maggie B, et al, where 78 % of students valued tanned skin (18).

The study had some limitations. Firstly, the sample size was small, not suitable to generalize the results for entire population. A further study may involve a larger sample, not only one university as in this study. Another limitation was the age of the participants. A diversification on the age would produce more realistic and representative results beyond the sample. Self-reported answers can be checked as an extra limitation of this study related to sample size.

## 6. CONCLUSION

A fairly low knowledge, protective behavior and level of concern was concluded from the results. The personal risk was at moderate level. The training highlighted the

need for further and on-going educational interventions to increase student awareness for periodic control to the dermatologist and by themselves.

- **Authors contribution:** S.S and I.S conceptualized, designed the study and acquired the data. S.S, I.S and O.D analyzed and interpreted the data. S.S, I.S and O.D drafted the manuscript. SS, I.S and O.D revised the manuscript. All authors read and approved the final manuscript.
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