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## **Evaluation of knowledge, attitude and practices about melanoma among pharmacy students in private institute – A web based cross-sectional study**

**J. Abel Joe Jacob**

Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai, Tamil Nadu, India

**S. Jayakumari**

Head of Department, Department of Pharmacognosy, School of Pharmaceutical Sciences, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai, Tamil Nadu, India

Corresponding author email: [hodpcognosy@velsuniv.ac.in](mailto:hodpcognosy@velsuniv.ac.in)

**Abstract**---Aim - To Evaluate and compare the Knowledge, Attitude & Practice about melanoma among pharmacy students in private institute. Material and Methods- The study is carried out with a sample size of 109 students in VISTAS, Pallavaram, at Chennai. It is a web based cross –sectional study. The data were collected by e-questionnaire of 25 questions into 4 domains, where demographic details and questions regarding knowledge, attitude and practice of Melanoma were asked among pharmacy students in Chennai. Results- In our study questionnaire was circulated to 109 pharmacy students totally, all 109 pharmacy students have responded giving response rate of (100%) who is studying in private institution at Chennai. The statistical analysis was calculated based on review performed the data were entered into Epidata 3.1 and exported to SPSS version 22 and analyzed using descriptive statistics and logistic regression. Conclusion- As per the study results the study participants have good knowledge, Attitudes and Practice towards melanoma. Most of our study participants were aware about melanoma, risk factors, causes and symptoms of melanoma. Both M.Pharm and pharm D have GOOD knowledge, Attitude, and practice. Compared to M.Pharm, pharm D have much better knowledge, Attitude and Practice. So more CME, seminaries, and pamphlets can be done to improve knowledge Attitude and Practice of the disease and help in the betterment of the society.

**Keywords**---Melanoma, Pharmacy students, knowledge, Questionnaire.

## Introduction

Melanoma, sometimes known as malignant melanoma, is a kind of skin cancer that arises from melanocytes, which produce pigment. <sup>[1]</sup> Melanomas are most commonly found on the skin, although they can also develop in the mouth, intestines, or eyes (uveal melanoma). <sup>[1][2]</sup> They usually affect women's legs, whereas they mostly affect men's backs. <sup>[2]</sup> Melanomas are formed by moles in about 25% of cases. <sup>[2]</sup> An increase in size, uneven margins, and change in colour, as well as itching or skin breakdown, are all signs of melanoma.

UV radiation (UV) exposure is the leading cause of melanoma. <sup>[2]</sup> <sup>[3]</sup> UV light can come from the sun or from other sources like tanning beds. <sup>[3]</sup> Those with a lot of moles, a history of diseased relatives, and a weak immune system are at a higher risk. <sup>[4]</sup> Several rare genetic disorders, including as xerodermapigmentosum, also raise the risk. <sup>[5]</sup>

Melanoma can be avoided by wearing sunscreen and avoiding UV radiation. <sup>[6]</sup> the most common treatment is surgical removal. <sup>[1]</sup> Patients with slightly larger tumours may have adjacent lymph nodes checked for spread (metastasis). <sup>[1]</sup> If the disease has not spread, the majority of persons are cured. <sup>[1]</sup> Immunotherapy, biologic therapy, radiation therapy, or chemotherapy may help people whose melanoma has spread. <sup>[1]</sup> <sup>[12]</sup>. Melanoma's proclivity to recur or spread is determined by its thickness.

Clinical monitoring for both deep lymph nodes and distant viscera poses a substantial problem for physicians. Melanoma is most commonly detected in adults over the age of 60, but a large number of those diagnosed with it are between the ages of 15 and 40 <sup>[2]</sup>.

## Symptoms

Melanomas can appear on any part of the body. They usually appear on areas of your body that have been exposed to the sun, such as your back, legs, arms, and face. Melanomas can also develop in locations that aren't exposed to the sun, such as the soles of your feet, palms of your hands, and the beds of your fingernails. People with darker skin are more likely to have concealed melanomas. The following are common melanoma signs and symptoms: A modification to an existing mole, A new pigmented or unusual-looking growth appears on your skin. Melanoma isn't necessarily the result of a mole. It can also emerge on skin that appears to be normal. <sup>[18]</sup> <sup>[19]</sup>

## Prevention

- Avoid the sun during the middle of the day. Between 10 a.m. and 4 p.m., the sun's rays are at their most powerful. <sup>[15][16][17]</sup>

- Wear sunscreen year-round. Even on cloudy days, use a broad-spectrum sunscreen with an SPF of at least 30. Use a lot of sunscreen and reapply every two hours.
- Wear protective clothing. Wear dark, tightly woven clothing that covers your arms and legs, as well as a broad-brimmed hat, to protect your skin.
- Avoid tanning lamps and beds. UV rays from tanning lamps and beds can raise your risk of skin cancer.<sup>[20][17]</sup>
- Become familiar with your skin. Examine your skin frequently for any new growths or changes in existing moles, freckles, lumps, or birthmarks.

## Diagnosis

Skin self-examination has a lot of potential as a simple and easy to check for melanoma and precancerous lesions.<sup>[17][18]</sup>

Dermoscopy: Various assistive optical equipment are becoming increasingly important in the diagnosis of melanoma. These devices include dermoscopes, dermatoscopes, and epiluminescent microscopes, which are high-resolution optical portable instruments.<sup>[8][9]</sup>

## Treatment

**Surgery:** Although excisional biopsies can eliminate tumours, further surgery is frequently required to limit the chance of recurrence. Standard procedures include complete surgical excision with acceptable surgical margins, screening for detected metastatic disease, and short- and long-term followup. When treating cutaneous melanoma, sentinel lymph node biopsies are commonly used.<sup>[11]</sup>

Chemotherapy: Dacarbazine, a chemotherapy medication, has become the cornerstone of metastatic melanoma treatment.<sup>[12]</sup>

Targeted therapy: Small-molecule targeted therapies function by inhibiting the expression of genes important in tumour proliferation and survival pathways. BRAF, C-Kit, and NRAS inhibitors are the most common therapy.<sup>[13][14][15]</sup>

Immunotherapy: Immunotherapy works by boosting the body's ability to recognise and kill cancer cells, which helps the immune system fight the tumour.<sup>[16][17]</sup>

## Radiation

Patients with locally or regionally advanced melanoma or unresectable distant metastases often get radiation therapy after surgical resection.<sup>[18]</sup> These therapies frequently employ kilovoltage x-ray beams, which have the advantage of delivering the maximal radiation dose near to the skin's surface. It may lower the rate of local recurrence, but it has little effect on overall survival.<sup>[19][20]</sup>

## Objectives

- To compare & assess Knowledge, Attitude & Practice about melanoma
- To study the prevalence & risk factors contributing to UV rays and melanoma

## Materials and Methods

The study is carried out with a sample size of 109 students in VISTAS, Pallavaram, and Chennai. The sample size is calculated according to the formula. The study was carried out via online. The study is a web based cross –sectional study using E- Questionnaires. Before conducting the study, ethical approval was obtained from the Institutional Ethical committee (IEC).

## Data collection and procedures

A physician validated Questionnaire containing 25 questions is made into a Google form for which the link will be shared to students to evaluate knowledge, attitude and practice about melanoma, to the students who are registered in Vels institute of science technology and advanced studies(VISTAS), Chennai will be sent the link to self-administered online questionnaires. The E-Questionnaires which is distributed among college students in department of pharmacy in a (VISTAS) through Google forms, the link was created and used to circulate among the students by social media such as WhatsApp, G-mail. The survey consists of demographic characteristics such as age, gender, education qualification, year of study and 3 sections contain question regarding knowledge, attitude, and practice about melanoma. The filled online questionnaires will be submitted to investigators mail. The inclusion criteria for selecting the participants in this study is only Pharmacy students above 18 years from VISTAS are included in the study. Only Pharm D IV,V& VI students and M.Pharm I & II year students from VISTAS are included. Other departments and other universities are excluded. Pharm D I ,II & III year and B.Pharm are excluded from the study. The statistical analysis was calculated based on review performed the data were entered into Epidata 3.1 and exported to SPSS version 22 and analyzed using descriptive statistics and logistic regression.

## Results

All the questions from the questionnaire provided the information needed to frame the results.

Table – 1  
Demographic characteristics of the study population

S.NO	CHARACTERISTICS	M.Pharm	Pharm D
		N%	N%
1	Age		
	20 Years	0.0%	17.5%
	21Years	44.0%	39.4%
	22Years	23.9%	20.2%
	23Years	12.8%	14.7%
2	Gender		
	Male	76.9%	52.6%
	Female	23.1%	47.4%
3	Occupation		

4	Pharm D	0.0%	52.3%
	M.pharm	47.7%	0.0%
	Year		
	1st year	46.2%	0.0%
	2nd year	53.8%	0.0%
	4th year	0.0%	50.9%
	5th year	0.0%	38.6%
6th year	0.0%	10.5%	

Table 2  
Knowledge of subject towards melanoma

S.N O	Knowledge of subject towards melanoma.	M.Pharm		Pharm D		CHI-SQUARE TEST	
		N	%	N	%	A- Significance	Symptamatic (2-Sided)
1.	What is happening to the incidence of melanoma worldwide?						
	It is increasing	42	80.8%	52	91.2%	.085	.039
	It is decreasing	4	7.7%	0	0.0%		
	There is no change	6	11.5%	5	8.8%		
2.	What are the risk factors of melanoma?						
	Fair skin	0	0.0%	0	0.0%	.029	
	Excessive ultraviolet (UV) light exposure	0	0.0%	5	8.8%	.010	
	Living closer to the equator	0	0.0%	0	0.0%		
	A family history of melanoma	0	0.0%	0	0.0%		
	All the above	52	100.0%	52	92.2%		
3.	What is the most common site of melanoma in men?						
	Back & chest	48	92.3%	51	89.5%	.065	.019
	Scalp	0	0.0%	5	8.8%		
	Limbs	2	3.8%	1	1.8%		
	Legs	2	3.8%	0	0.0%		
4.	What is the most common site of melanoma in women?						
	Back & chest	4	7.7%	1	1.8%		
	Scalp	10	19.2%	0	0.0%		
	Limbs	2	3.8%	5	8.8%		
	Legs	36	69.2%	51	89.5%	<.001	
5.	Which one of the following statements best reflects opinion about clinically diagnosing malignant melanoma?						
	There are no typical characteristics of melanoma	2	3.8%	0	0.0%	.318	.217
	Melanomas are always more pigmented than the	6	50.0%	6	50.0%		

	surrounding skin					
	A combination of shape, pigmentation, and regularity of shape and size can be used to help recognize melanoma clinically	44	84.6%	51	89.5%	
6.	Is there a relationship between skin cancer and exposure to sunlight?					
	Yes	44	84.6%	56	98.2%	.033
	No	2	3.8%	0	0.0%	.019
	May be	6	11.5%	1	1.8%	
7.	What are the symptoms of melanoma?					
	A mole that changes in color, size or feel or that bleeds.	0	0.0%	0	0.0%	.135
	A small lesion with an irregular border and portions that appear red, pink, white, blue or blue-black.	2	3.8%	0	0.0%	.083
	Painful lesion that itches or burns.	0	0.0%	0	0.0%	
	All the above	50	96.2%	57	100%	

Table 3  
Attitude of subjects towards Melanoma

S.NO	Attitude of subjects towards Melanoma	M.Pharm		Pharm D		CHI-SQUARE TEST A- Symptamatic Significance(2-Sided)
		N	%	N	%	
1	Melanoma is the most serious then other skin cancers.					
	Agree	50	96.2%	57	100%	.135
	Disagree	2	3.8%	0	0.0%	.083
2	Melanomas occurs when melanocytes start to grow out of control.					
	Agree	37	71.2%	57	100%	
	Disagree	15	28.8%	0	0.0%	<.001
3	Melanoma is not considered to be an epithelial cancer					
	Agree	43	82.7%	51	89.5%	.305
	Disagree	9	17.3%	6	10.5%	.304
4	Melanoma can be cured only with surgical excision					
	Agree	18	34.6%	6	10.5%	.002
	Disagree	34	65.4%	51	89.5%	.002

5	The diagnosis of melanoma is confirmed by excision biopsy.					
	Agree	36	69.2%	57	100%	
	Disagree	16	30.8%	0	0.0%	<.001
6	Most common symptom of melanoma is unusual growth or change in an existing mole.					
	Agree	42	80.8%	56	98.2%	.002
	Disagree	10	19.2%	1	1.8%	.001
7	The radial growth phase may not be evident in some melanomas.					
	Agree	31	59.6%	56	98.2%	
	Disagree	21	40.4%	1	1.8%	<.001

Table 4  
Practice of subjects towards melanomas

S.NO	Practice of subjects towards melanomas.	M.pharm		Pharm D		CHI-SQUARE TEST A-Symptamatic Significance(2-Sided)
		N	%	N	%	
01	Will you advice to use sunscreen when you are exposed to sun?					
	Yes	50	96.2%	57	100%	.135
	No	2	3.8%	0	0.0%	.083
02	Will you provide education about UV radiation, skin cancer, and modifiable risk factors, promote skin self-examination, encourage patients to reduce sun exposure?					
	Yes	38	73.1%	57	100%	
	No	14	26.9%	0	0.0%	<.001
03	Will you provide information about sun protection factor in sun cream?					
	Yes	44	84.6%	57	100%	.002
	No	8	15.4%	0	0.0%	.000
04	Do you advise the patient to take Homeopathic or Ayurveda treatment, if you realize a patient has melanoma?					
	Yes	12	23.1%	7	12.3%	.138
	No	40	76.9%	50	87.7%	.137
05	Will you provide counselling to improve medication use including chemotherapy and other high alert medications for patient with melanoma?					

	Yes	42	80.8%	57	100%	
	No	10	19.2%	0	0.0%	<.001
06	Will you help identify, prevent and manage any drug related problem including drug choice, dosage, interactions, administration and side effects?					
	Yes	50	96.2%	57	100%	.135
	No	2	3.8%	0	0.0%	.083
07	Will you try to treat by yourself, if you realize a patient has melanoma?					
	Yes	15	28.8%	0	0.0%	
	No	37	71.2%	57	100%	<.001

## Discussion

Melanoma, also redundantly known as malignant melanoma, is a type of skin cancer that develops from the pigment-producing cells known as melanocytes. Melanomas typically occur in the skin but may rarely occur in the mouth, intestines or eye (uveal melanoma).

Melanomas can develop anywhere on the skin, but they are more likely to start on the trunk (chest and back) in men and on the legs in women. The neck and face are other common sites. The exact cause of all melanomas isn't clear, but exposure to ultraviolet (UV) radiation from sunlight or tanning lamps and beds increases your risk of developing melanoma. The following study was conducted online with help of Google forms to acknowledge the knowledge, attitude, and practice about melanoma among pharmacy students in private institute. The Questionnaire is made in the form of Google form's link and the link was circulated to the private institute via social media. And the data's were collected and they were analyzed. Total number of participants is 109. The demographic details were collected were course wise M.pharm participants is 52 and pharm D participants is 57. This study on knowledge attitude and practice about melanoma among pharmacy students in private institute can help to assess the KAP status of melanoma among pharmacy students so that the information can be used to develop a better and need based program for the institute.

## Knowledge and understanding of subjects towards melanoma

The knowledge of participants towards melanoma is assessed and the results are following (80.8%) of M.Pharm and (91.2%) of pharm D populations states for what is happening to the incidence of melanoma worldwide, the chi-square test result showed not significant results between, M.Pharm and pharm D. (100.0%) of M.Pharm and (92.2%) of pharm D populations states for what are the risk factors of melanoma, the chi-square test result showed not significant results between, M.Pharm and pharm D. (92.3%) of M.Pharm and (89.5%) of pharm D populations states for most common site of melanoma in men, the chi-square test result showed not significant results between, M.Pharm and pharm D. (69.2%) of

M.Pharm and (89.5%) of pharm D populations states for most common site of melanoma in women, the chi-square test result showed significant results between, M.Pharm and pharm D. (84.6%) of M.Pharm and (89.5%) of pharm D populations states for which of the following statements best reflects opinion about clinically diagnosing malignant melanoma, the chi-square test result showed not significant results between, M.Pharm and pharm D. (84.6%) of M.Pharm and (98.2%) of pharm D populations states for is there a relationship between skin cancer and exposure to sunlight, the chi-square test result showed not significant results between, M.Pharm and pharm D. (96.2%) of M.Pharm and (100%) of pharm D populations states for symptoms of melanoma, the chi-square test result showed not significant results between, M.Pharm and pharm D.

### **Attitude and understanding of subjects towards melanoma**

The attitude of participants towards melanoma is assessed and the results are following (96.2%) of M.Pharm and (100%) of pharm D populations states positive response, where (3.8%) of M.Pharm populations states negative response for Melanoma is the most serious then other skin cancers, the chi-square test result showed not significant results between, M.Pharm and pharm D. (71.2%) of M.Pharm and (100%) of pharm D populations states positive response, where (28.8%) of M.Pharm population states negative response for Melanomas occurs when melanocytes start to grow out of control, the chi-square test result showed significant results between, M.Pharm and pharm D. (82.7%) of M.Pharm and (89.5%) of pharm D populations states positive response, where (17.3%) of M.Pharm and (10.5%) of pharm D populations states negative response for Melanoma is not considered to be an epithelial cancer, the chi-square test result showed not significant results between, M.Pharm and pharm D. (65.4%) of M.Pharm and (89.5%) of pharm D populations states positive response, where (34.6%) of M.Pharm and (10.5%) of pharm D populations states negative response for Melanoma can be cured only with surgical excision, the chi-square test result showed significant results between, M.Pharm and pharm D. (69.2%) of M.Pharm and (100%) of pharm D populations states positive response, where (30.8%) of M.Pharm populations states negative response for diagnosis of melanoma is confirmed by excision biopsy, the chi-square test result showed significant results between, M.Pharm and pharm D. (80.8%) of M.Pharm and (98.2%) of pharm D populations states positive response, where (19.2%) of M.Pharm and (1.8%) of pharm D populations states negative response for Most common symptom of melanoma is unusual growth or change in an existing mole, the chi-square test result showed significant results between, M.Pharm and pharm D. (59.6%) of M.Pharm and (98.2%) of pharm D populations states positive response, where (40.4%) of M.Pharm and (1.8%) of pharm D populations states negative response for the radial growth phase may not be evident in some melanomas, the chi-square test result showed significant results between, M.Pharm and pharm D.

### **Practice and understanding of subjects towards melanoma**

Among the study participants (96.2%) of M.Pharm and (100%) of pharm D population said they will advice to use sunscreen when person exposed to sun, the chi-square test result showed not significant results between M.Pharm and pharm D. (73.1%) of M.Pharm and (100%) of pharm D population said they will

you provide education about UV radiation, skin cancer, and modifiable risk factors, promote skin self-examination, encourage patients to reduce sun exposure, the chi-square test result showed significant results between M.Pharm and pharm D. (84.6%) of M.Pharm and (100%) pharm D population said they Will you provide information about sun protection factor in sun cream, the chi-square test result showed significant results between M.Pharm and pharm D. (23.1%) of M.Pharm and (12.3%) of pharm D population said they advise the patient to take Homeopathic or Ayurveda treatment, if you realize a patient has melanoma, which is the negative practice and (76.9%) M.Pharm and (87.7%) of pharm D population have a positive practice, the chi-square test result showed not significant results between, M.Pharm and pharm D. (80.8%) of M.Pharm and (100%) pharm D population said they Will provide counselling to improve medication use including chemotherapy and other high alert medications for patient with melanoma, the chi-square test result showed significant results between, M.Pharm and pharm D. (96.2%) of M.Pharm and (100%) of pharm D population said they Will help identify, prevent and manage any drug related problem including drug choice, dosage, interactions, administration and side effects, the chi-square test result showed not significant results between, M.Pharm and pharm D. (28.8%) of M.Pharm population said they Will try to treat by themselves, if realize a patient has melanoma, which is the negative practice and (71.2%) of M.Pharm and (100%) of pharm D population have positive practice, the chi-square test result showed significant results between, M.Pharm and pharm D.

### **Conclusion**

As regards the results of this study, KAP of melanoma among pharmacy students. Our study population included 109 participants of M.pharm and Pharm D in a private institute. As per the study results the study participants have good knowledge, Attitudes and Practice towards melanoma. Most of our study participants were aware about melanoma, risk factors, causes and symptoms of melanoma. Both M.Pharm and pharm D have **GOOD** knowledge, Attitude, and practice. Compared to M.Pharm, pharm D have much better knowledge, Attitude and Practice. So more CME, seminars, and pamphlets can be done to improve knowledge Attitude and Practice of the disease and help in the betterment of the society.

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