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PATTERN OF SKIN CANCER IN PATIENTS ATTENDING AL-YARMOUK TEACHING HOSPITAL FROM JANUARY 2021 TO DECEMBER 2022

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INTRODUCTION

Skin cancer is one of the most common forms of cancer globally. It's primarily characterized by the uncontrolled growth of abnormal skin cells, this growth can lead to tumors, which are either benign (noncancerous) or malignant (cancerous). Understanding the patterns of skin cancer involves an exploration of its types, causes, risk factors, symptoms, diagnosis, treatment, and prevention strategies.[1] Skin cancer is broadly categorized into three main types: Basal cell carcinoma (BCC), Squamous cell carcinoma (SCC), and Melanoma. BCC and SCC, collectively known as non-melanoma skin cancers, are the most common and are typically less aggressive. Melanoma, although less common, is more aggressive and likely to spread to other parts of the body. Basal Cell Carcinoma is the most common type of skin cancer, it arises from the basal cells, located in the lowest part of the epidermis. BCCs often appear as raised, smooth bumps on sun-exposed areas like the head and neck. Squamous Cell Carcinoma originates from the squamous cells, which are found in the upper part of the epidermis. It often appears as scaly, reddish patches, which may crust or bleed. Melanoma develops from melanocytes, the cells responsible for skin pigmentation. It is the deadliest form of skin cancer due to its tendency to spread (metastasize) to other parts of the body.[2,3] The primary cause of skin cancer is ultraviolet light radiation from the sun or tanning beds. Ultraviolet light radiation damages the DNA in skin cells, leading to mutations that can result in cancer. Other risk factors include: fair skin, light hair, and eye color, history of sunburns, especially early in life, excessive sun exposure, large number of moles or atypical moles, family history of skin cancer, and weakened immune system.[4] Skin cancer symptoms vary depending on the type of cancer but generally include changes in the skin that persist for weeks and evolve over time. The signs to look for include: new growths or sores that do not heal, changes in existing moles (size, shape, color), itchy or painful lesions, and the appearance of a scaly or crusty lesion.[5] Early detection of skin cancer is crucial for successful treatment. Dermatologists use various methods for diagnosis, including: Visual Examination by checking the skin for changes or abnormalities, dermoscopy : using a special magnifying tool to examine suspicious moles or lesions, or by taking biopsy (incisional or excisional) for histopathological study to confirm diagnosis.[6] Treatment options depend on the type and stage of skin cancer. Common treatments include: Surgical Removal by excision of the cancerous tissue, mohs Surgery which is precise surgical technique used primarily for BCC and SCC, radiotherapy by using high-energy rays to destroy cancer cells or by chemotherapy: by using drugs to kill cancer cells. For skin cancer, topical chemotherapy may be used and immunotherapy by stimulating the immune system to fight cancer cells, Targeted Therapy: drugs that specifically target cancer cell mutations.[7] Preventive measures are key to reducing the risk of skin cancer. These include: Avoiding excessive sun exposure, especially during midday, using sunscreen with suitable sun protection factor, wearing protective clothing, hats, and sunglasses, avoiding tanning beds and regular skin examinations by a healthcare professional especially if there is high risk factor.[8]

The aim of study is to determine the pattern of skin cancer in patients attending Al-Yarmouk teaching hospital from January 2021 to December 2022.

METHOD

Cross sectional study done from January 2021 to December 2022 on patients attending Al-Yarmouk teaching hospital, we depend on histopathology for diagnosis the patients visit the dermatology and plastic

consultant clinic at Al-Yarmouk teaching hospital, all the involved patients (40 sample size) also take the following data; gender, age groups (years), education, family history of skin cancer, skin types, history of naves, site of malignancy and smoking. All patients diagnosed definitely as skin cancer by Histopathological Diagnosis as BCC, SCC, melanoma and other. Statistical analysis done by SPSS 22, frequency and percentage used for categorical data, Chi-square used for assessed association between categorical variables. P-value less or equal to 0.05 is consider significant. Total of patients collected are 40.

RESULTS
Mean age of all patients are 62.9 ± 16 years, 45% of patients are females while 55% of them are males, 60% of patients at age group 60 years and more, 40% of patients have primary school education while 32.5% of them have elementary or high school completed. Only 20% of patients have family history of skin cancer, 72.5% of patients with type III skin type, 42.5% of patients have History of naves, 55% of patients have skin cancer with exposed area and 60% of patients are smoking. As shown in table 1.

Table 1: Demographical Distribution of Skin Cancer in Patients Attending Dermatological and Plastic Consultation Department in Al-Yarmouk Teaching Hospital During Period of the Study.

variables		frequency	percentage
Gender	*Female*	18	45.0
	Male	22	55.0
Age groups (years)	≤40	4	10.0
	>40	36	90.0
Education	*collage degree or higher education*	4	10.0
	elementary or high school completed	13	32.5
	primary school	16	40.0
	illiteracy	7	17.5
Family history of Skin Ca.	*No*	32	80.0
	Yes	8	20.0
Skin types	*Type II*	11	27.5
	Type III	29	72.5
History of naves	*no*	23	57.5
	yes	17	42.5
Site of malignancy	*Exposed*	22	55.0
	Non Exposed	18	45.0
Smoking	*no*	16	40.0
	yes	24	60.0

As shown in fig 1: 45% of patients with basal cell carcinoma (BBC), 22.5% of patients have squamous cell carcinoma (SCC), 5% of them have melanoma and 27.5% of patients have other types of skin cancer.
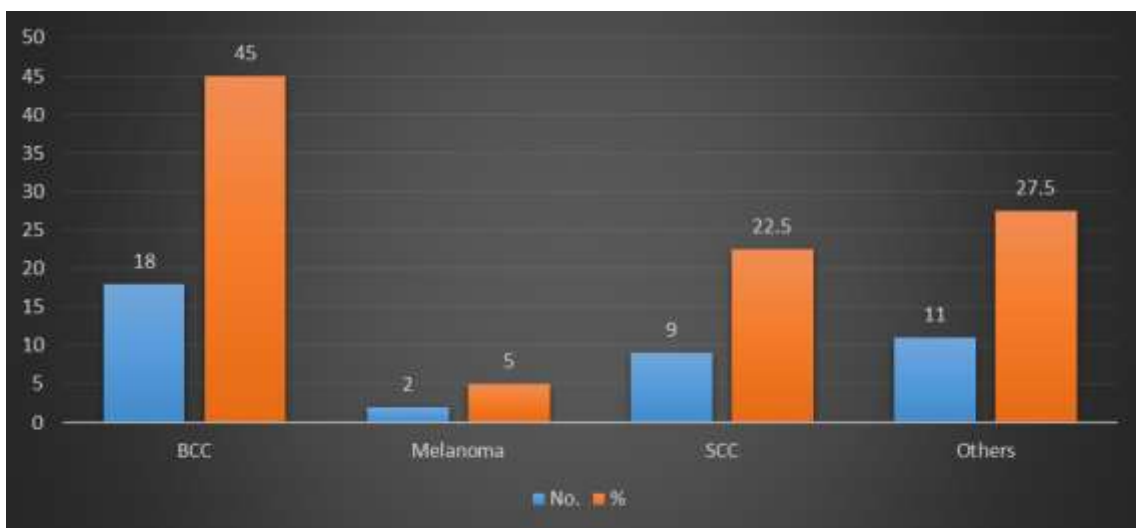

Fig 1: Distribution of Patients According to Histopathological Types.

In table 2; there is significant association between histopathological diagnosis of skin cancers types and (Education, Site of Cancer). 50% of patients with college education have SCC, 46.2% of patients with high school

education have other types of cancers, 75% of illiterate patients have BCC. 63.6% of patients with exposed site of cancer have BCC, while 50% of patients with non-exposed site of cancer have other types of cancer. There is no significant association between histopathological diagnosis of skin cancers types and (Gender, Age groups (either 40 ≥ or more than 40 years), Family History of Skin cancer, Skin Types, History of Naves and Smoking).

Table 2: Association between histopathological types of skin cancers and risk factors considered in the study.

Variables		Histopathological Diagnosis				P-value
		BCC	**SCC**	**Melanoma**	**Others**	
Gender	*Females*	7	5	1	5	0.9
		38.9%	27.8%	5.6%	27.8%	
	Males	11	4	1	6	
		50.0%	18.2%	4.5%	27.3%	
Age groups (years)	*40 ≥*	0	1	1	2	0.9
		0.0%	25.0%	25.0%	50.0%	
	>40	18	8	1	9	
		50.0%	22.2%	2.8%	25.0%	
Education	*collage*	1	2	0	1	**0.009**
		25.0%	50.0%	0.0%	25.0%	
	high school	4	3	0	6	
		30.8%	23.1%	0.0%	46.2%	
	primary school	1	3	2	1	
		14.3%	42.9%	28.6%	14.3%	
	illiteracy	12	1	0	3	
		75.0%	6.3%	0.0%	18.8%	
Family History of Skin ca.	*No*	14	8	1	9	0.6
		43.8%	25.0%	3.1%	28.1%	
	Yes	4	1	1	2	
		50.0%	12.5%	12.5%	25.0%	
Skin Types	*Type II*	6	3	0	2	0.6
		54.5%	27.3%	0.0%	18.2%	
	Type III	12	6	2	9	
		41.4%	20.7%	6.9%	31.0%	
History of Naves	*No*	8	6	1	8	0.4
		34.8%	26.1%	4.3%	34.8%	
	Yes	10	3	1	3	
		58.8%	17.6%	5.9%	17.6%	
Site of Cancer	*Exposed*	14	5	1	2	**0.02**
		63.6%	22.7%	4.5%	9.1%	
	Non Exposed	4	4	1	9	
		22.2%	22.2%	5.6%	50.0%	
Smoking	*No*	8	3	0	5	0.6
		50.0%	18.8%	0.0%	31.3%	
	Yes	10	6	2	6	
		41.7%	25.0%	8.3%	25.0%	

P-value ≤ 0.05 (significant).

DISCUSSION

Total cases of current study is 40 patients collected over 2 years, the prevalence of skin cancer in current study is 0.5%, shows that the most common type of skin cancer is basal cell carcinoma (BBC), then squamous cell carcinoma (SCC), and only 5% of them have melanoma this is goes with study done in KSA that stated the most common skin cancer is BBC then SCC and then melanoma[9], **Mean Age**: The mean age of 62.9 ± 16 years aligns with findings that skin cancer risk increases with age due to cumulative UV exposure and other factors.[10] **Gender Distribution**: 45% of cases females and 55% of them males, this suggests a slightly higher prevalence in males, this is going with study done in USA that stated men might be less likely to use sun protection, leading to increased risk and more with outdoor workers.[11] **Prevalence in Older Adults**: 60% of patients are aged 60 years and this is more consistent with existing literature done in China which shows increased incidence of skin cancers in older populations.[12] Significant association between skin cancer types and education levels this might reflect

differences in lifestyle, occupational sun exposure, and awareness. For instance, the higher prevalence of SCC among college-educated individuals could be related to greater occupational or recreational sun exposures and more seeking for help, this agreed with study done in USA.[13] 20% of cancer cases is with positive family history that indicates a genetic component in skin cancer risk, as supported by genetic study done in USA.[14] The high prevalence of skin cancer in type III skin (72.5%) is significant since most Iraqis persons have type III skin as in study done in USA also stated that skin cancer occurs mostly in type III skin.[14] In current study the presence of naves in 42.5% of patients. Agreed with other study done in Austria, stated that nevus is a known risk factor for melanoma[15], while in current study smoking in 60% of patients points to potential risk factors and highly associated with squamous cell carcinoma this is similar to study done in China.[16] The association between BCC and exposed sites (63.6%) reinforces the role of UV exposure in its etiology. The finding that 50% of non-exposed site cancers have other types of cancer these cancers might be influenced by factors other than UV exposure.[17] The observation that 50% of patients with college education have SCC, this might be due to lifestyle factors associated with higher education, such as increased occupational or recreational sun exposure and seeking for doctor help. **High School Education and Other Cancers**: The 46.2% prevalence of 'other types of cancers' in patients with high school education is intriguing. It could be due to a variety of factors, including occupational exposures or lifestyle differences not specifically captured in the data. **Basal Cell Carcinoma (BCC) and Illiteracy:** The high prevalence (75%) of BCC in illiterate patients might point towards socio-economic factors, potentially including outdoor work or limited access to sun protection and healthcare resources as study done in USA that stated Basal Cell Carcinoma (BCC) more occur in illiterate patients might point towards socio-economic factors.[18] **BCC and Exposed Sites**: The finding that 63.6% of patients with an exposed site of cancer have BCC aligns with existing knowledge. BCC is known to be more common in areas of the skin frequently exposed to the sun. **Other Types of Cancer and Non-Exposed Sites**: The 50% prevalence of other cancer types in non-exposed sites could indicate the influence of factors other than UV exposure, such as genetic predispositions or other environmental factors also these results agreed with study done in New Haven stated that genetic predispositions or other environmental factors are most common causes for other types of skin cancers.[19] **Gender, Age, Family History, Skin Types, Nevi, Smoking**: The lack of significant association with these factors in current study does not necessarily contradict existing literature. For example, while smoking is a well-established risk factor for many cancers, its direct association with specific skin cancer types is less clear.[20] **Age and Skin Cancer**: Typically, age is a risk factor for many cancers, including skin cancer, due to the cumulative effect of sun exposure and other risk factors over time. The absence of this association in our study might be due to the sample size or demographic characteristics of the study population.[21] As well as taking in consideration it is across sectional which describe the situation at time of study.

CONCLUSION
The study indicates a significant link between skin cancer types and patients' education levels and the cancer's site, with basal cell carcinoma being more prevalent in less educated individuals and those with exposed site malignancies. Surprisingly, there's no notable association between the type of skin cancer and factors like gender, age, family history, skin type, history of naves, or smoking. This highlights the importance of targeted education and prevention strategies, tailored screening, and nuanced understanding of risk factors in skin cancer management. So most **recommendations** are: using SPF, avoid sun exposure and visiting family doctors periodically especially if there is risk factors.

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