Exploring the Prevalence and Risk Factors of Skin Disorders in Medical Students: A Cross-Sectional Study

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ABSTRACT

Background: Although skin conditions are more prevalent, they are typically chronic and non-fatal. A sizable amount of the worldwide illness burden is caused by dermatological disorders.

Aims and Objectives: The goal of this study were to ascertain the frequency of skin conditions among medical students, contributing variables identification, and outline preventative measures.

Material & Methods: A cross-sectional study was conducted at Al-Bayan University / Baghdad / Iraq. A pre-tested self-administered semi-structured questionnaire was used to collect the data. Questions likethe type of food consumption, frequency of head baths, exposure to sunlight,& usage of sunscreen were asked& recorded.

Results: Most participants were aged 18-20 years old (56.8%). The majority were females (65.3%). Most of the participants were pharmacy students (73.7%), and the majority were in their second year of the study (64.2%). The most reported skin condition was acne (64.2%), followed by skin allergies such as hives and contact dermatitis (14.7%) and sunburn (13.7%). There isa large proportion of the participants occasionally consumed fast food (46.35%), fruits and vegetables (35.8%), sugary foods (34.7%), and dairy products (36.8%). Moreover, exposure to environmental factors revealed close results for occasional exposed to pollution (29.5%), Direct sunlight (27.4%), and chemical products (31.6%). Most of the participants (42.1%) had 5-6 hours of sleep on average,and more than half never exercised. Also, (85.3%) were smokers, and only one participant was alcoholic. Most participants rated their stress levels between 5-7 out of 10 (45.3%), with a close percentage of 8-10 out of 10 stress levels (42.1%). (70.5%) claimed the use of skincare products when (65.7%) of them used daily.

Conclusion: This study highlights the substantial influence of lifestyle and environmental variables on skin health and offers insightful information about the incidence of skin problems among university students in Iraq / Baghdad. The results show that acne, which affects a significant percentage of students, is the most frequently reported skin issue. The study also finds important lifestyle factors that are strongly linked to a number of skin diseases, especially dermatitis and acne, including sun exposure, pollution exposure, and dietary practices.According to the statistics, a sizable portion of participants frequently encounter environmental contaminants and follow poor eating habits, consuming a lot of fast food and sugary meals.

Keywords: Skin disorder, Dermatitis, Skin conditions

INTRODUCTION:

Skin conditions are prevalent worldwide and represent a substantial public health burden in both industrialized and developing nations. People of various ages are impacted [1].A significant section of the Iraqi population suffers from skin problems, which are a serious health issue [2]. Patients who suffer from skin illnesses may experience an emotional and psychological toll that is significantly worse than the physical toll [3]. Young people's increased awareness of their bodies and appearance exacerbates their worry [4]. Numerous factors, including gender, race, food, personal cleanliness, skin care quality, and environmental milieu, influence the pattern & prevalence of cutaneous disorders in young people [5]. In many cases, patients seem to create skin lesions as a way to release tensions brought on by interpersonal disputes and/or unsolved emotional issues [6].

According to prevalence surveys, the majority of skin disorders fall into fewer than ten categories, despite the fact that dermatology is defined by a vast array of disease/reaction patterns [7]. These kinds of observations are helpful when creating health and education initiatives for college students. It's critical to properly manage them early in pupils' schooling to avoid deformity issues and psychological effects later in life [4]. In 2013, 41.6 million Disability Adjusted Life Years (DALYs) & 39.0 million Year Lost due to Disability (YLDs) were caused by skin and subcutaneous illnesses, making them the 18th most common cause of DALYs worldwide. Skin conditions were the 4thmost common cause of disability globally. Between 1990 and 2017, the number of skin and subcutaneous diseases increased by 46.8% [1]. Between 21 and 87% of skin illnesses were documented in a survey of 18 prevalence studies [8]. However, the proportional impairment of skin disorders is not matched by funding or research initiatives. The majority of dermatological disorders cause suffering and incapacitations but do not cause mortality. It affects patients' friends, lovers, and families in addition to their physical, social, and emotional well-being [9,10]. Significant discomfort & shame are experienced by young individuals, which causes needless absences from college [8]. Both doctors and health authorities frequently fail to consider the impact that skin diseases have on individuals' lives. They were redirected to illnesses that are thought to be more severe.

Skin disorders prevalence has increased due to a number of factors, including Human Immunodeficiency Virus (HIV) pandemic, shifting societal lifestyles, relocation, the use of chemical products in industry, global warming, and more [11]. When stratified by age & geographic location, the illness burden varies as well. As example, eczema is prevalent in industrialized nations, whereas infection & infestation are more common in developing nations [12,13].

Significant improvements in patient & public health can result from the cost-effective and

sustainable management of the majority of dermatological cases at peripheral health units. Nevertheless, there haven't been many systematic initiatives to create these public health treatments [14]. However, not much research has been done in Iraq to understand the issue of skin diseases, particularly among medical students. The low mortality rate of most skin illnesses compared to other diseases may be the cause of this carelessness. As a result, dermatological morbidities are now considered a low priority by both local and international health policy makers [15]. The potential underestimation of the advantages of public health initiatives in lowering the incidence, morbidity, & death of skin disorders is another worry [16]. Therefore, greater research on dermatological morbidity in a growing nation like Iraq is required.

Aims and Objectives:

In light of this, a study was conducted to determine the prevalence and severity of skin conditions among students at a private university in Baghdad, Iraq, as well as how these conditions relate to different sociodemographic characteristics.

MATERIALS AND METHODS:

This cross-sectional study was done in October 2024 at Al-Bayan University. The ethical approval for conducting this study was obtained from institutional ethics clearance committee. The students participating in the study were chosen from various colleges of the university and represented different academic levels & they briefed about the objective of the study. A pre-tested self-administered semi-structured questionnaires was used to collect the data. The face validity of these questionnaires was done by an expert in dermatology who reviewed the contents of the questionnaires.

Participants were asked about the presence of any skin conditions they had experienced in the past year, the types of conditions reported (e.g., acne, eczema, psoriasis), and the frequency of these occurrences (e.g., daily, weekly, monthly). Additionally, questions explored whether they consulted a healthcare professional for their skin conditions. Dietary habits were also investigated, including the frequency of consuming fast food, fruits, sugary foods, and dairy products. Lifestyle and personal habits were assessed through questions about the average number of sleeping hours per night, the frequency of engaging in physical exercise per week, smoking habits, and alcohol consumption. To evaluate environmental and stress-related factors, participants were asked about their perceived stress levels (1 = No stress, 10 = Extremely stressed), the frequency of exposure to pollution such as vehicle exhaust or industrial smoke, and the frequency of direct sunlight exposure. Furthermore, the questionnaire inquired about the usage of chemical-based products like harsh soaps and detergents, as well as the frequency of their use. Skincare practices were addressed by asking about the use of sunscreen lotions and moisturizers, along with the overall frequency of using skincare products. This

approach aimed to gather comprehensive data to explore potential associations between these factors and the prevalence of skin conditions.

Data entry & analysis were done using Statistical Package for Social Sciences software package (SPSS Inc., Chicago, IL) version 22. Chi-square test was used to find out the association of socio-demographic variables with the presence of skin morbidities, quality of skin care and life style habits $P < 0.05$ was taken as statistically significant association.

RESULTS:

Most participants were aged 18-20 years old (56.8%). The majority of participant were females (65.3%). Most of the participants were pharmacy students (73.7%), and the majority were in their second year of the study (64.2%). The most reported skin condition was acne (64.2%), followed by skin allergies [such as hives and contact dermatitis] (14.7%), and sunburn (13.7%), shown in table (1).

Table 1: Socio-demographic data.

		Frequency	%
Age	18-20	54	56.8
	21-23	30	31.6
	> 23	11	11.6
Gender	Male	33	34.7
	Female	62	65.3
College	Dentistry	7	7.4
	Pharmacy	70	73.7
	Others	18	18.9
College level	Second	61	64.2
	Third	3	3.2
	Fourth	8	8.4
	Fifth	23	24.2
Skin conditions experienced	Acne	61	64.2
	Dermatitis	6	6.3
	Eczema	9	9.5
	Skin Allergies (e.g., hives, contact dermatitis)	14	14.7
	Fungal Infections (e.g., athlete's foot, ringworm)	3	3.2
	Sunburn	13	13.7
	Others	14	14.7

Table 2 shows that a large proportion of the participants occasionally consumed fast food (46.35%), fruits and vegetables (35.8%), sugary foods (34.7%), and dairy products (36.8%). Moreover, exposure to environmental factors revealed close results for occasional exposed to pollution (29.5%), Direct sunlight (27.4%), and chemical products (31.6%).

Table 2: Assessment of consumption and exposure to several factors that could affect skin condition. frequency percentage

Questions	Daily	Frequently	Occasionally	Rarely	Never
How often do you consume fast food?	5 (5.3)	14 (14.7)	44 (46.3)	24 (25.3)	8 (8.4)
How often do you consume fruits and vegetables?	15 (15.8)	23 (24.2)	34 (35.8)	22 (23.2)	1 (1.1)
How often do you consume sugary foods?	19 (20)	11 (11.6)	33 (34.7)	30 (31.6)	2 (2.1)
How often do you consume dairy products?	17 (17.9)	16 (16.8)	35 (36.8)	22 (23.2)	5 (5.3)
How often are you exposed to pollution?	19 (20)	27 (28.4)	28 (29.5)	0 (0.0)	21 (22.1)
How often are you exposed to direct sunlight?	20 (21.3)	25 (26.3)	26 (27.4)	0 (0.0)	24 (25.3)
How often you use chemical products?	25 (26.3)	16 (16.8)	30 (31.6)	0 (0.0)	24 (25.3)

Table 3 revealed that most of the participants (42.1%) had 5-6 hours of sleep on average, and more than half never exercised. Also, (85.3%) were smokers, and only one participant was alcoholic. Most participants rated their stress levels between 5-7 out of 10 (45.3%), with a close percentage of 8-10 out of 10 stress levels (42.1%). (70.5%) claimed the use of skincare products when (65.7%) of them used daily.

Table 3: Assessment of factors' frequency and percentage that could affect skin condition.

Questions		Frequency	%
How many hours of sleep do you get on average per night?	<5	10	10.5
	5-6	40	42.1
	7-8	34	35.8
	>8	11	11.6
How often do you exercise per week?	1-2	24	25.3
	3-4	21	22.1
	5 or more	2	2.1
	Never	48	50.5
Do you smoke?	Yes	14	14.7
	No	81	85.3
Do you consume alcohol?	Yes	1	1.1
	No	94	98.9
How would you rate your stress level on a scale from 1 to 10?	1-4	12	12.6
	5-7	43	45.3
	8-10	40	42.1
Do you use skincare products (e.g., moisturizer, sunscreen)?	Yes	67	70.5
	No	28	29.5
If yes, how often do you use skincare products?	Daily	44	65.7
	weekly	13	19.4
	Occasionally	10	14.9

Table 4 shows the chi-square test results between different reported skin conditions and consumption and exposure factors; the results suggested a significant association between acne and skin allergies (e.g., hives, contact dermatitis) with daily exposure to pollution (e.g., vehicle exhaust, industrial smoke) (*P*-value = 0.004 and 0.039, respectively). Moreover, a significant association was found between exposure to direct sunlight and dermatitis (*P*-value = 0.044). Also, low dairy product intake was significantly associated with eczema skin conditions (*P*-value = 0.022). Other factors were insignificant (>0.05).

Table 4: The association between consumption, exposure and skin conditions.

Skin conditions	Fast food	Fruits & vegetables	Sugary foods	Dairy products	Exposure to Pollution	Exposure to direct sunlight	Exposure to chemical products
Acne	>0.05	>0.05	>0.05	>0.05	**0.004**	**0.044**	>0.05
Dermatitis	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Eczema	>0.05	>0.05	>0.05	**0.022**	>0.05	>0.05	>0.05
Skin Allergies	>0.05	>0.05	>0.05	>0.05	**0.039**	>0.05	>0.05
Fungal Infections	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Sunburn	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Others	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

Table 5 shows the chi-square test results between different reported skin conditions and other assessed factors; the results suggested a significant association between acne and no skincare product use (*P*-value = 0.5). Moreover, a significant association was found between smoking and dermatitis (*P*-value = 0.012). Also, as expected, more weekly exercise was significantly associated with fungal infections (e.g., athlete's foot, ringworm) (*P*-value = 0.001). Other factors were insignificant (> 0.05).

Table 5: The association between other factors and skin conditions.

Skin conditions	Hours of sleep per night	Exercise per week	Smoking	Consume Alcohol	Stress level (1 to 10)	Use of skincare products	Frequency of using skincare
Acne	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	**0.05**
Dermatitis	>0.05	>0.05	**0.012**	>0.05	>0.05	>0.05	>0.05
Eczema	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Skin Allergies	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Fungal Infections	>0.05	**0.001**	>0.05	>0.05	>0.05	>0.05	>0.05
Sunburn	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Others	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

DISCUSSION:

This study's main goal was to find out how common skin conditions and the factors that play a role in them are among Iraqi university students in Baghdad. This study differs from comparable research conducted in Egypt (86.93%), Nigeria (39.6%), & North India in Lucknow (42.3%) on the general prevalence of skin disease [17-21]. This significant variance in the prevalence of skin diseases could be explained by a number of factors.

The differences between the population's financial status and the location of the data collection will serve as one potential explanation. In contrast to the current study, some earlier research was carried out in high- and middle-income nations, where the health care system & service utilization are marginally better than in heavily polluted nations like Iraq [22,23]. Non-uniformity in sample size, study design, diagnostic criteria, and disease description may be additional significant factors. For example, data was gathered for two years, from December 1994 to December 1996, in a research conducted in Upper Egypt. This led to a high frequency of the illness because skin diseases typically do not cause death & do not have a quick recovery period.

According to research, at least one-fourth of us have a common skin condition, which adds significantly to the worldwide burden of disease [24]. In addition to the high economic cost of skin conditions, the widespread public awareness of dermatological conditions has resulted in a decline in quality of life and social disability [25,26]. Skin illnesses were found to have mortality rates and disability-adjusted life years comparable to some non-communicable and communicable illnesses in some regions of the world [15]. In a regression model, rheumatism and skin conditions were more closely linked to depression than angina pectoris, diabetes, and asthma [27].The relevance of these disorders for public health is underestimated, given their profound effects on the patient, their family, their social lives, and their substantial financial burden [16].

Medical students frequently have a variety of skin conditions, according to this study as well. According to reports, adult females experience greater skin issues than adult males [27]. Therefore, reducing skin diseases will undoubtedly improve people' quality of life. Acne being the most often reported morbidity in this study, followed by skin allergies including hives and contact dermatitis, both of which were corroborated by earlier studies [4,28]. Sweating and scorching temperatures have been linked to acne, which is highly compatible with Baghdad's hot and muggy climate [29].Medical students frequently have a variety of skin conditions, according to this study as well. According to reports, adult females experience greater skin issues than adult males [27]. Therefore, reducing skin diseases will undoubtedly improve people' quality of life.

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With more and more data showing that medical students have experienced high levels of stress related to their medical education, medical school has long been characterized as a setting with numerous stressors that might affect students' wellbeing [30]. Academic, psychological, and environmental stressors are among the many stressors that impact the lifestyles of medical students [31].

According to this study, stress accounts for 45.2% of the stress that the medical students in the study group experience. These findings are consistent with those of numerous studies from institutions in the UK, India, Malaysia, and Thailand, who also pointed out that students viewed exams and the volume of material delivered over the academic year as stresses [32-36]. Furthermore, 78% of the variation in medical school students' subjective stress was predicted by academic stressor characteristics [37].

The percentages for a demanding academic program, exam frequency, test anxiety, and lack of leisure are 87.3%, 85.7%, 77.3%, and 75.7%, respectively. The second-ranking stresses were psychological stressors, which include family issues (32.3%), loneliness (48.3%), and high expectations from parents (45%). For medical students, financial difficulties cause the least level of stress (12.7%). Environmental stressors rank last among things like the quality of the food, living conditions in a home or hostel, transportation between the faculty and home, and lodging away from family.

According to the study's findings, smoking is linked to a higher incidence of dermatitis in adults [38-40]. Unknown is the mechanism underlying the link between smoking and dermatitis. Smoking probably affects immune responses and skin barrier function in a number of ways, which could lead to dermatitis.Negative childhood experiences have been linked to poorer health behaviors later in life and may increase smoking rates, according to prior research [41]. Perhaps AD has comparable negative consequences. In fact, according to one study, persons with AD started smoking far sooner than those without the disease [39]. Interestingly, adults were more affected by passive smoke exposure than children were, possibly because of the cumulative dose-response effect of smoke exposure and delayed illness presentation.

It would be helpful to investigate this finding further by looking into how exposure to passive smoke affects the age at which AD onset occurs. There is a good chance that smoking is linked to

more severe AD since it is linked to a higher prevalence of AD. Almost no research, meanwhile, evaluated how smoking affected the severity of AD. Therefore, more research is necessary to ascertain whether smoking is linked to more severe AD and whether quitting smoking lessens the severity of the disease.

CONCLUSIONS:

This study highlights the substantial influence of lifestyle and environmental variables on skin health and offers insightful information about the incidence of skin problems among university students in Iraq / Baghdad. The results show that acne, which affects a significant percentage of students, is the most frequently reported skin issue. The study also finds important lifestyle factors that are strongly linked to a number of skin diseases, especially dermatitis and acne, including sun exposure, pollution exposure, and dietary practices.According to the statistics, a sizable portion of participants frequently encounter environmental contaminants and follow poor eating habits, consuming a lot of fast food and sugary meals. The study also emphasizes how crucial regular physical activity, getting enough sleep, and managing stress are to preserving skin health.

Universities must put in place instructional programs that encourage healthy lifestyle choices and increase understanding about skin care because of the high frequency of skin diseases and their potential to negatively affect students' quality of life. In order to better understand the causal links between lifestyle factors and the state of the skin, as well as the efficacy of intervention measures meant to lower the prevalence of skin diseases among young adults, future investigations should concentrate on longitudinal studies. All things considered, this study highlights the necessity of a comprehensive strategy for skin health that takes into account both personal habits and external factors.

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