

Prevalence of allergies among University students in Ajman, UAE

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ABSTRACT

Objective: Urbanization and globalization in UAE has resulted into drastic environmental changes and increase in the allergens present in the environment and the prevalence of allergies. Hence, this study aimed to assess the prevalence of allergies among undergraduate students of Gulf Medical University.

Materials and Methods: This cross-sectional survey was carried out among undergraduate students of Gulf Medical University. A self administered questionnaire was used as research instrument for data collection. The demographic data and the allergy characteristics were collected and analyzed using SPSS version 19. Descriptive and inferential statistics were performed.

Results: A total of 255 students (33.3% males and 66.7% females) were included. The commonest allergies among the students were allergic conjunctivitis [104 (40.8%)], allergic dermatitis [89(34.9%)], dust allergies [58 (22%)] and eczema in [38 (14.9%)]. A positive family history of allergies was reported by 62 (24.3%) for allergic dermatitis and 33 (12.9%) for allergic conjunctivitis. Allergies associated with pollen, food and drugs were less frequent. The distribution of allergies based on gender revealed female preponderance in all the types of allergy. Students with allergies reported interference with their daily activities, and academic, social and extra-curricular activities.

Conclusion: Overall higher proportion of students had allergies especially among the African and Pakistani students. Adequate preventive strategies should be initiated to curb this rising prevalence of allergies.

Key words: allergies, university students, dust

INTRODUCTION

Atopic diseases have a wide range of manifestations across the world, imposing heavy social and economic burdens due to their chronicity and effects on various functions of the body¹. Allergies impact the quality of life by interfering with the daily activities, poor attendance to college, sleep disturbances, and inability to perform academically as well as extracurricular activities. Studies have also documented that allergies are more common in the urban and industrialized societies than in less industrialized regions². In Finland, von Hertzen et al. reported an increase in the occurrence of allergies among individuals living in the city³. Previous studies carried out in the UAE revealed a prevalence rate of 7.3% of asthma and allergic rhinitis and caused mainly by pollen, mould spores and dust mite allergens in the air. Prevalence

of food allergy among children in UAE is 8% with a significant association with family history⁴.

The risk factors attributed to the increasing prevalence of allergies among the Arab countries are modernization or urbanization resulting in substantial environmental changes (i.e. increased exposure to pollen due to anti-desertification projects) and genetic factors⁵. Epidemiological studies from the Gulf region on allergic disorders have shown significant discrepancies in the prevalence of asthma and allergic disorders as well as variations in related risk factors⁶⁻⁸.

It is important to determine the prevalence of allergies among students and any association between gender, various ethnic groups and length of stay

in UAE to advocate suitable modification and suggestions to improve the health of the students. Hence, this study aimed to assess the prevalence of allergies among undergraduate students of Gulf Medical University.

MATERIALS AND METHODS

This cross-sectional survey was carried out over a period of 6 months among undergraduate students of the four colleges of Gulf Medical University (College of Medicine, College of Dentistry, College of Pharmacy, College of Allied Health Sciences). Approval for the study was obtained from the Gulf Medical University Ethics Committee before its start.

All students willing to participate in the study were included. Students not willing to participate and those who were not present in the class during the administration of questionnaire were excluded from the study. Data collection was performed using a self-administered pilot-tested questionnaire with the following domains: socio demographic characteristics (age, gender, nationality and length of stay in UAE); allergy characteristics; family history of allergies. Copies of the questionnaire were handed out to the students during their break.

The demographic data and the wheezing and bronchial asthma characteristics and family history were collected and descriptive analysis was done using SPSS version 19. Chi square test was used to test for any association between allergies and variables such as age, gender, nationality, length of stay, and quality of life.

RESULTS

A total of 255 students [85 (33.3%) males and 170 (66.7%) females] were included. The mean age was 20.1 ±2.58 years. The mean duration of stay in the UAE was about 104.9 ±90.4 months, the frequency varying from one month to 312 months. The characteristics of the study population are shown in Table 1.

The common allergies among the students included allergic conjunctivitis reported by 104 (40.8%), allergic

dermatitis by 89 (34.9%), dust allergies 58 by (22%) and eczema by 38 (14.9%) students. The self-reported allergic disorders (single and combination) among the students are illustrated in Figure 1. Only 54 (21.1%) students reported single allergic disorders. Allergic conjunctivitis and rhinitis were co-existent in 53 students (20.7%) and combination of allergic dermatitis and rhinitis in 40 (15.7%). A positive family history of allergies was reported by 62 (24.3%) for allergic dermatitis and 33 (12.9%) for allergic conjunctivitis.

The details of gender-based distribution of allergies are shown in Table 2. It is evident that there is a female preponderance in all the types of allergy. There was no association between the allergies and length of stay in the UAE or between the allergies and the nationality of students.

Students with allergies reported interference with their daily activities academic activities, social and extracurricular activities. Allergic conjunctivitis interfered with college attendance in 11(16.9%), academic performance in 13(19.4%), social activities and extracurricular activities in 25(35.7%) and daily activities in 32 (45.1%) students. Allergic dermatitis interfered with college attendance in 7(13.5%) students, academic performance in 11(19.6%) social and extracurricular activities in 9 (29.8%) and daily activities in 28 (46.7%) students. A statistically significant interference with the daily activities ($p<0.01$) by allergic conjunctivitis and dermatitis was observed.

Dust was the most common trigger for all the allergies (allergic rhinitis, conjunctivitis, dermatitis and eczema). Allergic conjunctivitis was co-existent with other allergies in 51 (49%) students, and observation that was statistically significant ($p<0.01$). The most common food allergies were associated with sea food and nuts. Drug allergies were reported by 18 (7%) students, most frequently to antibiotics especially the penicillin group of drugs.

Table.1 Socio-demographic characteristics of university students

Characteristic	Item	Number	Percentage
Gender	Male	85	33.3
	Female	170	66.7
Age	Mean \pm SD	20.1 \pm 2.58 years	
Course	MBBS	150	58.8
	DMD	59	23.1
	Pharm D	10	3.9
	BPT	36	14.1
Length of stay	<1 year	39	15.3
	1-5 years	61	23.9
	5-10 years	37	14.5
	10-15 years	23	9.0
	\geq 15 years	95	37.3
Nationality	India	37	14.5
	Pakistan	38	14.9
	Other Asian	12	4.7
	Africa	36	14.1
	UAE	31	12.2
	Other Middle East	54	21.2
	Europe	10	3.9
	Others	37	14.5

Table 2. Gender-based distribution of allergic disorders among university students

Allergies	Male No. %	Female No. %	Total	p value
Allergic Conjunctivitis	25 (24)	79(76)	104	<0.05
Allergic dermatitis	21(23.5)	66(76.5)	89	NS
Eczema	12(31.5)	26(68.5)	38	NS
Dust allergies	18(31)	40(69)	58	NS
Food allergies	6(25)	18(75)	24	NS
Drug allergies	6(33.3)	12(66.7)	18	NS
Pollen allergies	4(30.7)	9(69.3)	13	NS

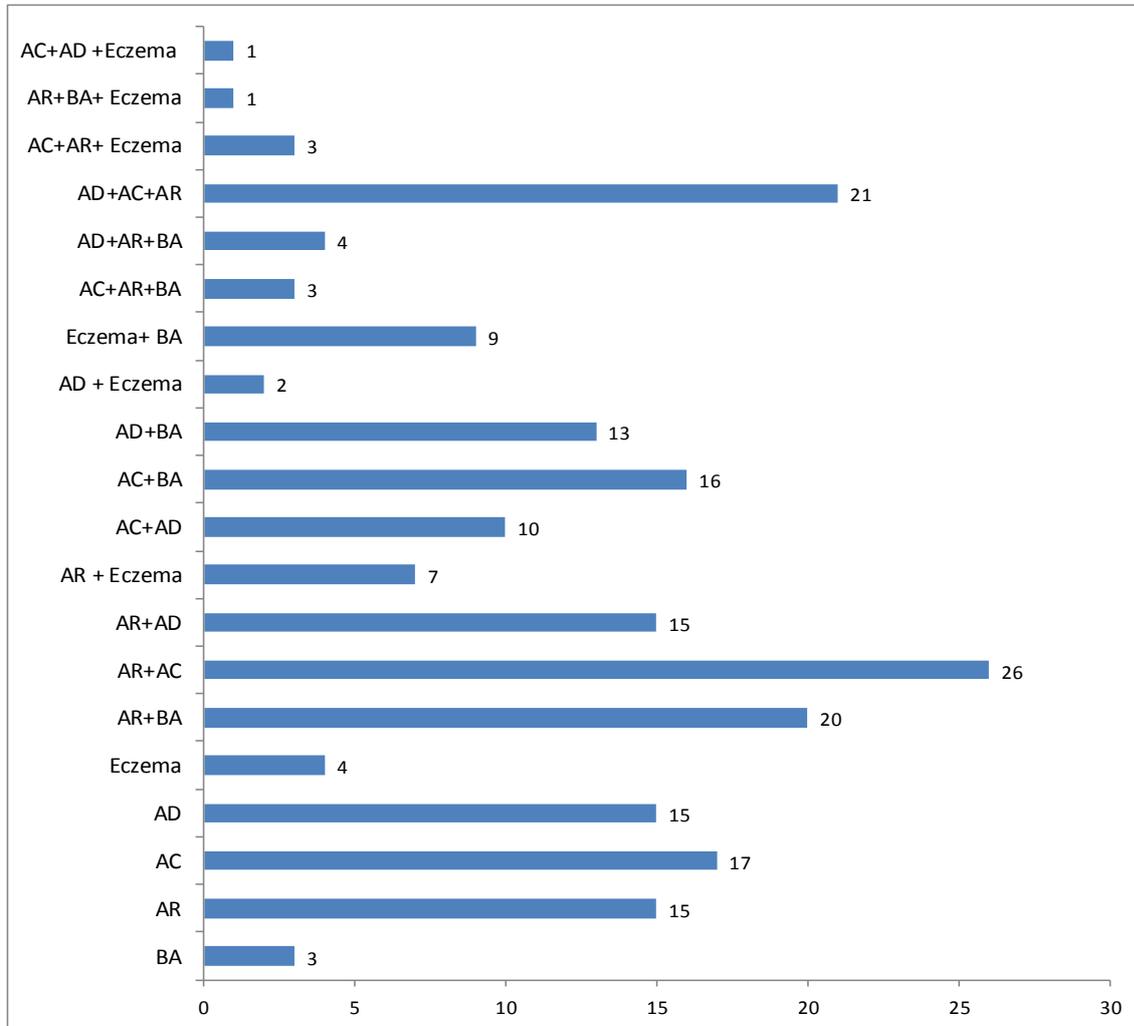


Figure 2. Distribution of allergic disorders among the university students

DISCUSSION

United Arab Emirates, as a country has been through a major transition shifting from traditional to a modern society with urbanization, industrialization, and associated environmental changes resulting in an increase in the allergens present in the environment and the prevalence of allergies. The present study aimed to determine the prevalence of allergies among the university students of Ajman, one of the northern emirates in UAE. In our study sample, the female students were predominant, with a majority of the students being below 20 years of age. This finding reflects the profile of undergraduate students at Gulf Medical University where the students are on the average 17–20 years old.

Dust was the most common trigger for all the allergies (allergic rhinitis, conjunctivitis dermatitis and eczema). These results indicate that dust plays

an important role in worsening allergic symptoms, as has been reported earlier by Bener et al⁹. Urbanization has also changed the home settings immensely with the introduction of soft furnishings, fitted carpets, central cooling, decreased indoor ventilation which lead to a considerable increase in indoor pollutants and airborne allergens. Health education should be imparted among the general population regarding the simple measures of reducing dust mites such as washing bedding and nightclothes in hot water, encasing mattress, and pillow in dust mite-proof covers, using washable blinds or curtains, regularly checking air conditioning units for contamination and pest control¹⁰.

The prevalence of allergic conjunctivitis, allergic dermatitis, dust allergies, eczema, food allergy, drug allergy and pollen allergy were 40.8%, 34.9%, 22%, 14.9%, 9.4%, 7% and 5% respectively. The majority of the students

had multiple co-existent allergies, allergic conjunctivitis co-existent with rhinitis being the most frequent. The prevalence of allergic rhino-conjunctivitis in a study in Bangkok was 26% and in the present study was about 21%¹¹. The prevalence of eczema in the present study was nearly 15%, in comparison to only 9.4% reported in the study from Bangkok¹¹. A report from Lebanon showed the prevalence of eczema to be 12.8%¹². The highest prevalence rate of cutaneous allergy in the Middle East was seen in Tehran (35.8%)¹³. Shahar et al. from Israel reported prevalence rates of 7%, 6% and 7% for food allergy, drug allergy, and skin allergy respectively¹⁴.

In the present study the commonest food allergy was to sea food (crab) followed by nuts, while Al- Hammadi et al from Al-Ain, UAE had reported eggs, fruits and fish as the main allergies in their study⁴. In their study the prevalence among the children was 8%. A report from Taiwan documented that protein-rich and fat-rich foods of animal origin were associated with a higher prevalence of allergies among the teenagers¹⁵. Some foods can cause severe illness and life threatening anaphylaxis. The most frequently reported drug allergies were to antibiotics, especially penicillin group of drugs. Allergic drug reactions have been reported to cause the highest number of documented deaths from anaphylaxis each year¹⁶. Hence it is critical for individuals with allergies to identify them and to avoid foods and drugs that may cause allergic reactions.

The effect of allergies on an individual's quality of life and the extent to which it may restrict daily activities is often ignored. Our study revealed that the allergies had significantly restricted the daily activities of the students. Early identification of the allergens and avoiding them is the primary measure to reduce the occurrence of allergies. Educating and creating awareness regarding the allergic and respiratory diseases especially among the school students would help them identify the allergens and adopt precautionary measures.

CONCLUSION

The observations of the study highlight the need to increase the knowledge and awareness of allergic disease prevalence and its risk factors particularly among the younger population. Adequate preventive strategies and treatment of allergies can bring down mortality, morbidity and disability caused by this major public health problem.

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