

## A Study on the Prevalence of Allergic Skin Disorders among Students Of Majma'ah University, Majmaah, Saudi Arabia

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### ABSTRACT

**Introduction:** Allergic disorders are a group of immune-mediated disorders that are associated with considerable morbidity and ill health. Allergies affecting students in their college years greatly affects the quality of life by affecting their daily activities, personality development, sleep, academic performances and overall their outlook towards a meaningful life.

**Objective:** To assess the prevalence of allergic skin disorders among male students and determine the knowledge, attitude and practice among the students regarding its prevention and control.

**Methodology:** This is a cross-sectional questionnaire based study among male students studying in Majmaah University. SPSS version 20 has been used for statistical analysis and to find out the significance of the variables.

**Results:** Total no. of participants who actually participated in this study was 324 out of which 73.4% were males and 26.6% were females. A total of 84 (21.9%) participants both males and females responded positively when asked whether they had any allergic disorders or not. It was found that compared to males (19.6 %) the prevalence of allergic disorders in females

was higher (28.4%). A study on the association of causative factors with allergic disorders showed some interesting facts. Among males 18.6% and females 32.8% who took bath daily complained of having allergic disorders.

**Conclusion:** Allergic disorders are a common phenomenon and found more in boys than in girls. Most of the causative factors are easily identifiable and they are preventable too.

**Keywords:** Allergy, Majmaah, Prevalence, Skin Disorders.

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### INTRODUCTION

Allergic diseases can be expressed in many different organs and in any age group, having a significant impact on the quality of life of patients and their families.<sup>1</sup> Atopic dermatitis (AD) is an important chronic or relapsing inflammatory skin disease that often precedes asthma and allergic disorders.<sup>2</sup> Many things can cause Rashes, including plants (poison ivy, for example), allergic reactions to a medication or a food, or an illness (measles or chickenpox, for example). Eczema and hives, both of which are related to allergies, are two of the most common skin rashes. Many skin conditions that are common can cause itchy skin. ... Eczema: a chronic skin disorder that includes itchy, scaly rashes. Psoriasis: an autoimmune disease that causes skin redness and irritation, usually in the form of plaques. Dermatographism: a raised, red, itchy rash caused by pressure on the skin. An allergic reaction is the body's way of responding to an "invader." When the body senses a foreign substance, called an antigen, the immune

system is triggered. The immune system normally protects the body from harmful agents such as bacteria and toxins. Many people will have some problem with allergies or allergic reactions at some point in their lives. Allergic reactions can range from mild and annoying to sudden and life-threatening. Most allergic reactions are mild, and home treatment can relieve many of the symptoms.

Since there are very few studies done on allergic skin conditions specifically in Saudi Arabia, this study would provide a good opportunity to develop baseline knowledge on this health disorder, particularly among students who are affected the most by its occurrence during their formative years.

### LITERATURE REVIEW

A large number of skin diseases, including atopic dermatitis and psoriasis, appear to be precipitated or exacerbated by

psychological stress.<sup>3</sup> In one study it was found that skin disorders were reported in 33% of catering staff and >5% of women cleaners who returned a questionnaire, and were employed in a large hospital. Hand dermatitis occurred in 15% of the caterers and 12% of the cleaners.<sup>4</sup> A. O. Ogunbiyi et al (2005) found in their study that fungal infections and scabies were the most common allergy causing skin diseases in our study population.<sup>5</sup>

Skin is at the interface between the complex physiology of the body and the external, often hostile, environment, and the semipermeable epidermal barrier prevents both the escape of moisture and the entry of infectious or toxic substances. Common inflammatory skin disorders such as atopic dermatitis and psoriasis exhibit decreased barrier function, and recent studies suggest that the complex response of epidermal cells to barrier disruption may aggravate, maintain, or even initiate such conditions.<sup>6</sup> On the one hand psychological factors (stress, negative emotions) can influence the generation and aggravation of skin disorders (urticaria, atopic dermatitis, vitiligo), on the other hand psychological disorders can result in some skin diseases (psoriasis, atopic dermatitis).<sup>7</sup>

A study by Hywel Williams et al found that the epidemic of eczema seems to be leveling or decreasing in some countries with previously high prevalence rates but many formerly low-prevalence developing countries experiencing substantial increases, especially in the younger age group.<sup>8</sup> Another study by J. Harrop et al discovered that there is quite a geographical variation in the prevalence of eczema in adults both within and between countries.<sup>9</sup> The misery of living with atopic eczema cannot be overstated for it may have a profoundly negative effect on the health-related quality of life of children and their family unit in many cases. Embarrassment, comments, teasing and bullying frequently cause social isolation and may lead to depression or school avoidance. S Lewis Jones (2006) in her study specifically stated that education of all individuals involved in the care of children with eczema is fundamental in its successful management.<sup>10</sup> Multiple studies have declared that the prevalence of allergic skin disorders has risen substantially in many countries in recent decades, and this increase has been attributed mainly to changes in lifestyle, nutrition, and environmental factors.<sup>11-13</sup>

A number of studies on the prevalence of allergic skin disorders have been conducted, although few were performed in Mediterranean and Middle Eastern populations.<sup>14-18</sup> This study will try to develop a baseline information on the prevalence and associated risk factors for allergic skin disorders among students of Majmaah University. This will help in further exploration of the skin disorders in terms of causes, socio-economic impact and awareness among the young population.

## PROBLEM STATEMENT AND JUSTIFICATION

Allergic diseases can be expressed in many different organs and in any age group, having a significant impact on the quality of life of patients and their families. Many people will have some

problem with allergies or allergic reactions at some point in their lives. Allergic reactions can range from mild and annoying to sudden and life-threatening. Most allergic reactions are mild, and home treatment can relieve many of the symptoms. Therefore, since there are very few studies done on allergic skin conditions specifically in Saudi Arabia, this study would provide a good opportunity to develop baseline knowledge on this health disorder, particularly among students who are affected the most by its occurrence during their formative years.

## OBJECTIVES

**General Objective:** To study the prevalence of allergic skin disorders among medical students in Majmaah University

### Specific Objectives

1. To determine prevalence of common allergic skin disorders among medical students
2. To assess the prevalence of causative factors associated with the allergic skin disorders
3. To assess the knowledge, attitude and practice of the students in prevention and control of these allergic skin disorders

## METHODOLOGY

**Study Design:** An observational, cross sectional, institutional based study.

**Study Area:** The study was conducted in Majmaah University, Majmaah city, Saudi Arabia.

**Study Population:** Undergraduate male students who were between 19-25 years of age at Majma'ah University. The study was conducted in Majmaah University in the following colleges: college of medicine, college of applied medical sciences and college of business administration.

**Study Duration:** The study has been conducted in March to May 2017.

**Sampling Technique:** A simple random sampling technique was used to choose the participants from each academic batch in the college for the study.

### Sampling Size

$$N = Z^2 \times PQ / D^2$$

$$\text{Where: } Z = 1.96, D = 0.05, Q = 1 - P, P = 0.5$$

So, the sample size for this research is 384 people

N: Sample size; Z: standard normal deviate = 1.96; P: prevalence; Q: 1-P; D: Error accepted = 0.05

**Data Collection:** A Self-administered questionnaire for the assessment of allergic skin disorder was used containing 5 demographic questions (Age, Specialty, Academic year, Place of residence and gender) and 27 questions to evaluate the following domains (Knowledge about allergic skin disorders, Trigger that causes allergic skin disorders, Health related questions).

**Data Analysis:** The data was entered and analyzed using SPSS software. A p-value of **0.05** will be considered as statistically significant.

**Table 1: Distribution of study population**

Age group	Gender		Total
	Male	Female	
18-20	59 (67.8%)	28 (32.2%)	87
20-25	207 (75.5%)	67 (24.5%)	274
Over 25	16 (69.6%)	7 (30.4%)	23
<b>Total</b>	<b>282 (73.4%)</b>	<b>102 (26.6%)</b>	<b>384</b>

**Table 2: Distribution of the study population according to the prevalence of allergic disorders**

Gender	Allergic skin disorders			Total
	No	Yes	No response	
Male	222 (79.0%)	55 (19.6%)	4 (1.4%)	281
Female	73 (71.6%)	29 (28.4%)	0 (0.0%)	102
<b>Total</b>	<b>295 (77.0%)</b>	<b>84 (21.9%)</b>	<b>4 (1.0%)</b>	<b>383</b>

(Chi square = 4.67, df = 2, p = 0.097)

**Table 3: Distribution of causative factor associated with allergic disorders**

Causative factors	Gender	Responses	Allergic disorders			Total (%)	p value
			Yes (%)	No (%)	NR (%)		
Do you take bath everyday	Male	Yes	39 (18.6)	168 (80)	3 (1.4)	210 (100)	0.866
		No	11 (23.9)	34 (73.9)	1 (2.2)	46 (100)	
		NR	5 (20)	20 (80)	0 (0.0)	25 (100)	
	Female	Yes	22 (32.8)	45 (67.2)	0 (0.0)	67 (100)	
		No	7 (25.0)	21 (75.0)	0 (0.0)	28 (100)	
		NR	7 (100)	0 (0.0)	0 (0.0)	7 (100)	
Do you have any addiction	Male	Yes	9 (33.3)	17 (63)	1 (3.7)	27 (100)	0.084
		No	46 (18.1)	205 (80.7)	3 (1.2)	254 (100)	
		NR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
	Female	Yes	6 (46.2)	7 (53.8)	0 (0.0)	0 (0.0)	
		No	23 (25.8)	66 (74.2)	0 (0.0)	0 (0.0)	
		NR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Do you use deodorant or perfume daily	Male	Yes	37 (17.5)	172 (81.5)	2 (0.9)	211 (100)	0.006
		No	16 (35.6)	27 (60.0)	2 (4.4)	45 (100)	
		NR	2 (8.0)	23 (92.0)	0 (0.0)	25 (100)	
	Female	Yes	22 (27.5)	58 (72.5)	0 (0.0)	80 (100)	
		No	7 (41.2)	10 (58.8)	0 (0.0)	17 (100)	
		NR	0 (0.0)	5 (100.0)	0 (0.0)	5 (100)	
Do you wear clean clothes daily	Male	Yes	46 (20.0)	181 (78.7)	3 (1.3)	230 (100)	0.642
		No	7 (22.6)	23 (74.2)	1 (3.2)	31 (100)	
		NR	2 (10.0)	18 (90.0)	0 (0.0)	20 (100)	
	Female	Yes	22 (27.5)	58 (72.5)	0 (0.0)	80 (100)	
		No	7 (43.8)	9 (56.3)	0 (0.0)	16 (100)	
		NR	0 (0.0)	6 (100)	0 (0.0)	6 (100)	
Do you eat outside food most times of the week	Male	Yes	45 (21.4)	161 (76.7)	4 (1.9)	210 (100)	0.495
		No	8 (14.0)	49 (86.0)	0 (0.0)	57 (100)	
		NR	2 (14.3)	12 (85.7)	0 (0.0)	14 (100)	
	Female	Yes	15 (29.4)	36 (70.6)	0 (0.0)	51 (100)	
		No	14 (29.2)	34 (70.8)	0 (0.0)	48 (100)	
		NR	0 (0.0)	3 (100)	0 (0.0)	3 (100)	
Do you drink sweetened fruit juice/ aerated drinks daily	Male	Yes	40 (20.0)	157 (78.5)	3 (1.5)	200 (100)	0.939
		No	14 (19.7)	56 (78.9)	1 (1.4)	71 (100)	
		NR	1 (10.0)	9 (90.0)	0 (0.0)	10 (100)	
	Female	Yes	19 (30.2)	44 (69.8)	0 (0.0)	63 (100)	
		No	10 (27.0)	27 (73.0)	0 (0.0)	37 (100)	
		NR	0 (0.0)	2 (100)	0 (0.0)	2 (100)	
Do you have dandruff in your hair	Male	Yes	24 (18.8)	102 (79.7)	2 (1.6)	128 (100)	0.948
		No	27 (19.6)	109 (79.0)	2 (1.4)	138 (100)	
		NR	4 (26.7)	11 (73.3)	0 (0.0)	15 (100)	
	Female	Yes	19 (40.4)	28 (59.6)	0 (0.0)	47 (100)	
		No	10 (18.9)	43 (81.1)	0 (0.0)	53 (100)	
		NR	0 (0.0)	2 (100)	0 (0.0)	2 (100)	
Do you frequently have running nose or dry cough	Male	Yes	19 (27.5)	49 (71.0)	1 (1.4)	69 (100)	0.380
		No	33 (16.6)	163 (81.9)	3 (1.5)	199 (100)	
		NR	3 (23.1)	10 (76.9)	0 (0.0)	13 (100)	
	Female	Yes	12 (38.7)	19 (61.3)	0 (0.0)	31 (100)	
		No	15 (25.0)	45 (75.0)	0 (0.0)	60 (100)	
		NR	2 (18.2)	9 (81.8)	0 (0.0)	11 (100)	
Do you have any food allergy	Male	Yes	25 (48.1)	25 (48.1)	2 (3.8)	52 (100)	0.000
		No	29 (13.2)	190 (86.8)	0 (0.0)	219 (100)	
		NR	1 (10.0)	7 (70.0)	2 (20.0)	10 (100)	
	Female	Yes	9 (39.10)	14 (60.9)	0 (0.0)	23 (100)	
		No	19 (25.0)	57 (75.0)	0 (0.0)	76 (100)	
		NR	1 (33.30)	2 (66.7)	0 (0.0)	3 (100)	

NR: No response

Table – 4: Distribution of knowledge, attitude and practice in controlling or preventing allergic disorders

Causative factors	Gender	Responses	Do you have any allergic skin disorders?			Total	P value	
			No (%)	Yes (%)	NR (%)			
It is a common condition among young people?	Males	No	65 (76.5)	20 (23.5)	0 (0.0)	85 (100)	0.468	
		Yes	133 (81.1)	28 (17.1)	3 (1.8)	164 (100)		
		NR	24 (75.0)	7 (21.9)	1 (3.1)	32 (100)		
	Females	No	14 (100.0)	0 (0.0)	0 (0.0)	14 (100)		0.033
		Yes	55 (67.9)	26 (32.1)	0 (0.0)	81 (100)		
		NR	4 (57.1)	3 (42.9)	0 (0.0)	7 (100)		
Are the allergic disorders easily treatable	Males	No	69 (73.4)	24 (25.5)	1 (1.1)	94 (100)	0.045	
		Yes	118 (80.3)	28 (19.0)	1 (0.7)	147 (100)		
		NR	35 (87.5)	3 (7.5)	2 (5.0)	40 (100)		
	Females	No	36 (73.5)	13 (26.5)	0 (0.0)	49 (100)		0.893
		Yes	29 (69.0)	13 (31.0)	0 (0.0)	42 (100)		
		NR	8 (72.7)	3 (27.3)	0 (0.0)	11 (100)		
It is associated with serious health disorders?	Males	No	102 (77.9)	28 (21.4)	1 (0.8)	131 (100)	0.796	
		Yes	91 (81.3)	19 (17.0)	2 (1.8)	112 (100)		
		NR	29 (76.3)	8 (21.1)	1 (2.6)	38 (100)		
	Females	No	21 (61.8)	13 (38.2)	0 (0.0)	34 (100)		0.284
		Yes	35 (77.8)	10 (22.2)	0 (0.0)	45 (100)		
		NR	17 (73.9)	6 (26.1)	0 (0.0)	23 (100)		
It is inherited from parents	Males	No	68 (77.3)	18 (20.5)	2 (2.3)	88 (100)	0.840	
		Yes	116 (79.5)	29 (19.9)	1 (0.7)	146 (100)		
		NR	38 (80.9)	8 (17.0)	1 (2.1)	47 (100)		
	Females	No	27 (79.4)	7 (20.6)	0 (0.0)	34 (100)		0.317
		Yes	31 (64.6)	17 (35.4)	0 (0.0)	48 (100)		
		NR	15 (75.0)	5 (25.0)	0 (0.0)	20 (100)		
Medicines are easily available for its treatment?	Males	No	118 (80.3)	28 (19.0)	1 (0.7)	147 (100)	0.143	
		Yes	81 (77.9)	22 (21.2)	1 (1.0)	104 (100)		
		NR	23 (76.7)	5 (16.7)	2 (6.7)	30 (100)		
	Females	No	39 (67.2)	19 (32.8)	0 (0.0)	58 (100)		0.409
		Yes	19 (73.1)	7 (26.9)	0 (0.0)	26 (100)		
		NR	15 (83.3)	3 (16.7)	0 (0.0)	18 (100)		
Is the food a trigger that causes allergic skin disorders?	Males	No	44 (84.6)	8 (15.4)	0 (0.0)	52 (100)	0.683	
		Yes	170 (78.0)	44 (20.2)	4 (1.8)	218 (100)		
		NR	8 (72.7)	3 (27.3)	0 (0.0)	11 (100)		
	Females	No	1 (33.3)	2 (66.7)	0 (0.0)	3 (100)		0.263
		Yes	67 (73.6)	24 (26.4)	0 (0.0)	91 (100)		
		NR	5 (62.5)	3 (37.5)	0 (0.0)	8 (100)		
Is the bad hygiene of the body a trigger that causes allergic skin disorders?	Males	No	35 (76.1)	10 (21.7)	1 (2.2)	46 (100)	0.673	
		Yes	170 (80.6)	38 (18.0)	3 (1.4)	211 (100)		
		NR	17 (70.8)	7 (29.2)	0 (0.0)	24 (100)		
	Females	No	13 (61.9)	8 (38.1)	0 (0.0)	21 (100)		0.217
		Yes	57 (76.0)	18 (24.0)	0 (0.0)	75 (100)		
		NR	3 (50.0)	3 (50.0)	0 (0.0)	6 (100)		
Is Dust, smoke, pollution etc. triggers that causes allergic skin disorders?	Males	No	40 (76.9)	12 (23.1)	0 (0.0)	52 (100)	0.511	
		Yes	163 (80.7)	36 (17.8)	3 (1.5)	202 (100)		
		NR	19 (70.4)	7 (25.9)	1 (3.7)	27 (100)		
	Females	No	12 (70.6)	5 (29.4)	0 (0.0)	17 (100)		0.281
		Yes	55 (69.6)	24 (30.4)	0 (0.0)	79 (100)		
		NR	6 (100)	0 (0.0)	0 (0.0)	6 (100)		
Are the Medications triggers that causes allergic skin disorders?	Males	No	29 (69.0)	13 (31.0)	0 (0.0)	42 (100)	0.112	
		Yes	169 (82.0)	33 (16.0)	4 (1.9)	206 (100)		
		NR	24 (72.7)	9 (27.3)	0 (0.0)	33 (100)		
	Females	No	7 (77.8)	2 (22.2)	0 (0.0)	9 (100)		0.149
		Yes	58 (68.2)	27 (31.8)	0 (0.0)	85 (100)		
		NR	8 (100)	0 (0.0)	0 (0.0)	8 (100)		
Does it occur due to frequent infections?	Males	No	48 (75.0)	15 (23.4)	1 (1.6)	64 (100)	0.649	
		Yes	141 (82.0)	29 (16.9)	2 (1.2)	172 (100)		
		NR	33 (73.3)	11 (24.4)	1 (2.0)	45 (100)		
	Females	No	13 (68.4)	6 (31.6)	0 (0.0)	19 (100)		0.531
		Yes	49 (70.0)	21 (30.0)	0 (0.0)	70 (100)		
		NR	11 (84.6)	2 (15.4)	0 (0.0)	13 (100)		
Is it an immunity related disorders?	Males	No	44 (78.6)	12 (21.4)	0 (0.0)	56 (100)	0.061	
		Yes	148 (82.7)	29 (16.2)	2 (1.1)	179 (100)		

Are you unable to concentrate in studies	Females	NR	30 (65.2)	14 (30.4)	2 (4.3)	46 (100)	0.286	
		No	15 (83.3)	3 (16.7)	0 (0.0)	18 (100)		
		Yes	49 (67.1)	24 (32.9)	0 (0.0)	73 (100)		
	Males	NR	9 (81.8)	2 (18.2)	0 (0.0)	11 (100)		0.085
		No	100 (77.5)	28 (21.7)	1 (0.8)	129 (100)		
		Yes	86 (77.5)	24 (21.6)	1 (0.9)	111 (100)		
Females	NR	36 (87.8)	3 (7.3)	2 (4.9)	41 (100)	0.207		
	No	31 (66.0)	16 (34.0)	0 (0.0)	47 (100)			
	Yes	23 (69.7)	10 (30.3)	0 (0.0)	33 (100)			
Do you lose sleep due to having this disorder	Males	NR	19 (86.4)	3 (13.6)	0 (0.0)		22 (100)	0.088
		No	116 (76.8)	34 (22.5)	1 (0.7)		151 (100)	
		Yes	60 (76.9)	17 (21.8)	1 (1.3)		78 (100)	
Females	NR	46 (88.5)	4 (7.7)	2 (3.8)	52 (100)	0.002		
	No	32 (59.3)	22 (40.7)	0 (0.0)	54 (100)			
	Yes	14 (70.0)	6 (30.0)	0 (0.0)	20 (100)			
Are you unable to enjoy your normal day to day activities?	Males	NR	27 (96.4)	1 (3.6)	0 (0.0)		28 (100)	0.024
		No	107 (81.1)	24 (18.2)	1 (0.8)		132 (100)	
		Yes	76 (72.4)	28 (26.7)	1 (1.0)		105 (100)	
Females	NR	39 (88.6)	3 (6.8)	2 (4.5)	44 (100)	0.012		
	No	31 (62.0)	19 (38.0)	0 (0.0)	50 (100)			
	Yes	16 (66.7)	8 (33.3)	0 (0.0)	24 (100)			
Are you taking any treatment for your condition?	Males	NR	26 (92.9)	2 (7.1)	0 (0.0)		28 (100)	0.000
		No	168 (87.0)	23 (11.9)	2 (1.0)		193 (100)	
		Yes	0 (0.0)	30 (100)	0 (0.0)		30 (100)	
Females	NR	54 (93.1)	2 (93.4)	2 (3.4)	58 (100)	0.000		
	No	46 (79.3)	12 (20.7)	0 (0.0)	58 (100)			
	Yes	0 (0.0)	14 (100)	0 (0.0)	14 (100)			
		NR	27 (90.0)	3 (10.0)	0 (0.0)		30 (100)	

## RESULTS

Total no. of participants who actually participated in this study was 324 out of which 73.4% were males and 26.6% were females. The reason for the less number of females was because at the time of the study that was the total number of students enrolled in the female medical college in Majmaah. Most of the participants were in the age group 20 – 25 years (71.4%) in this study. (Table 1)

A total of 84 (21.9%) participants both males and females responded positively when asked whether they had any allergic disorders or not. It was found that compared to males (19.6%) the prevalence of allergic disorders in females was higher (28.4%) within their own gender but it was not statistically significant ( $p = 0.097$ ). (Table 2) Table 3 shows that among males 18.6% and females 32.8% who took bath daily complained of having allergic disorders. Similar positive associations were seen in other risk factors like use of deodorant [males - 17.5% ( $p < 0.05$ ), females – 27.5%], wearing clean clothes daily (males – 20.0%, females – 27.5%), eat outside food regularly (males – 21.4%, females – 29.4%), drink sweetened/aerated drinks daily (males – 20.0%, females – 30.2%), presence of dandruff in the hair [males - 18.8%, females - 40.4% ( $p < 0.05$ )], frequently having running nose of dry cough (males – 27.5%, females – 38.7%) and presence of any food allergy [males - 48.1% ( $p < 0.001$ ), females - 39.1%]. Except for association between presence of dandruff and allergic disorders where the prevalence was more in the males, all other risk factors showed higher association among the females.

Table – 4 shows the distribution of the knowledge, attitude and practices of the participants associated with allergic disorders. More number of females [32.1% ( $p < 0.05$ )] who had allergic disorders knew what they were than males (17.1%). This was statistically significant. Males who had allergic disorders (25.5%) but didn't know that it was easily treatable were significantly

( $p < 0.05$ ) more than those who knew (19.0%). Both males and female participants having allergic disorders claimed to not losing sleep due to the allergic disorders but the difference was statistically more significant among females ( $p < 0.05$ ). Again, more males (26.7%) ( $p < 0.05$ ) responded that they were unable to enjoy normal day to day activities than girls (33.3%) ( $p < 0.05$ ) who were afflicted with the disorders. On being asked about taking treatment for the allergic conditions both males and females with allergic disorders agreed and it was statistically significant ( $p < 0.001$ ).

Other queries in which both males and females had better knowledge (not statistically significant) were allergic disorders associated with serious disorders, inherited from parents (males > females), medications easily available for its treatment (males > females), whether food is a trigger for allergic disorders (males > females), bad hygiene or pollutions are the reasons (males > females), both the genders answered in the negative when asked whether it is due to infections but more percentage of females said yes when enquired if it was due to lower immunity than males.

A study on the attitude towards the allergic disorders showed that there was not much difference among both the groups when asked if they were unable to concentrate in studies. When asked if they were unable to sleep because of the allergic disorders, more percentage of males and females ( $p < 0.05$ ) replied in the negative.

## DISCUSSION

There were 384 participants in this study out of which 282(73.4 %) were males and 102(26.6%) were females. Majority of them were between the age group 20-25 years.

The major findings showed that most of the participants 344 (89.58%) did not have any addiction and 40 participants (10.4%) admitted to having some kind of addictive behavior. Previous

studies have shown the prevalence of addictive behavior among college goers to be between 7 – 10%.<sup>1-3</sup>

Furthermore, this study showed that the prevalence of allergic disorder was 14.4% in males and 7.6% in female participants. This difference was not statistically significant. Similarly, a study done in Turkey showed that 58.9% of the participants were suffering from one or the other allergic disorder.<sup>4</sup> Other similar studies done in Saudi Arabia have showed this prevalence of allergic disorders ranging from 20% - 50%.<sup>5-8</sup>

A study of the causative factors like inability to sleep properly at night, inability to enjoy normal day to day activities, taking medicine for any health disorders, not taking bath daily, use of deodorant/perfume daily, wearing clean clothes daily, eating outside food most days of the week, drinking aerated/sweetened drink/fruit juice daily, presence of dandruff in the hair, frequently having running nose or dry cough, and presence of any food allergy was done. The result shows that most of the causative factors are more prevalent among boys than girls except for presence of dandruff (46.1% females, 45.7% males), frequently having running nose or dry cough (30.4% females, 24.5% males which is statistically significant) and presence of food allergy (22.5% females, 18.4% males). Causative factors like inability to enjoy normal day to day activities, not taking bath daily and eating outside food most days of the week were significantly higher among boys than among girls. The prevalence of allergic disorders among boys (51%) is more than girls (28%). A study on allergic diseases established a correlation between eczema and food allergies showing a prevalence rate of 33% and 63% among children.<sup>9</sup> Another study on cleanliness and allergic disorders found no strong evidence associated with daily bathing ritual.<sup>10</sup> Use of deodorant and contact allergy cases have been established in many studies which have shown significant association during first and subsequent use.<sup>11-13</sup> One of the important determinants of allergic disorder was food associated which ranged from 5% to 30% in other studies.<sup>14-17</sup> This and other studies have established the importance of determining the risk factors that can have implications in the development of allergic disorders in young men and women.<sup>18</sup>

In our study, most of the study participants had knowledge about the allergic condition being a common condition among young people. There was a statistically significant difference in the prevalence of knowledge among males and females. Also, they were well aware that allergic conditions are easily treatable and more male students than female students knew it which was again statistically significant. More number of boys (46.1%) than girls (33.3%) believed that it is usually not associated with serious health disorders and the difference was statistically significant. An interesting finding was that most of the boys and girls believed that medicines are not easily available for its treatment. Most of them agreed that some foods have the tendency of triggering allergic reaction (statistically significant) and bad hygiene also is a risk factor for allergic disorders.

## CONCLUSION

Allergic disorders are a common phenomenon and found more in boys than in girls. Most of the causative factors are easily identifiable and they are preventable too. Some of the risk factors associated with the allergic disorders are found in the lifestyle choices of an individual which can be modified to reduce the

chances of having any allergies. The morbidity associated with allergic disorders is disruptive to the daily activities associated with a healthy body and mind.

## RECOMMENDATIONS

1. To increase the awareness of skin allergic disorders among students by conducting seminars for them.
2. To conduct more researches about skin allergic disorders all over the kingdom.
3. To conduct medical follow up for patients they have skin allergies.
4. To make medicines easily available for patients they have skin allergies.

## SOURCE OF SUPPORT

Majmaah University, Al Majmaah, Saudi Arabia.

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**Conflict of Interest:** None Declared.

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