

**RESEARCH ARTICLE****Exploration and prevalence of atopic dermatitis in adults**

Afra Malik\*, Muhammad Imran Qadir

*Department of Biotechnology, Institute of Molecular Biology and Biotechnology,  
Bahauddin Zakariya University, Multan, Pakistan***Received on: 28 Nov 2023; Revised on: 26 Dec 2023; Accepted on: 14 Jan 2023****ABSTRACT**

Human skin is the largest organ and therefore, it has the most chance to get affected at first, and it becomes important to go in-depth to check the dermatologic condition that can be done under the study of dermatology. There are various dermatologic conditions from mild to worst leading to skin cancer as well. This article covers the basic dermatologic conditions known as atopic dermatitis and a detailed overview on it, like what it is, what are its types, how it is diagnosis, and how it is treated. A research survey is conducted between the students from different cities and of different ages. The aim of this study is to know about the factor on which atopic dermatitis mainly attacks. Results claim that there must be some environmental conditions and genetic factors responsible for the prevalence of this disease.

**Keywords:** Skin, Disease, Atopic dermatitis, Medication, Eczema**INTRODUCTION**

Dermatology is a study, diagnosis, and research of skin that can also be normal or abnormal. Dermatology involves the management of health conditions that can directly or indirectly affect the skin, hair, nails, or membranes.

Skin is the largest organ of the human body which covers its internal organs from any external bacteria or infection. Skin acts as a barrier and protects the internal body against any injury, resulting in the skin getting infected. Hence, dermatology involves properly managing skin diseases caused by any injury, infection, bacteria, or other reason.

Skin disease comes in multiple variants and each variant has its own kind of severity. It can be associated with hair, nails, mucous membranes, etc. Most skin problems are physically visible and can cause psychosocial effects. Human skin has its own underlying structure and any disorder can be caused by the disturbance of the integumentary system.

The common type of skin problem is eczema mainly known as atopic dermatitis. Atopic dermatitis is a skin disease which causes skin to get inflamed, dry and itch. Mostly, we refer atopic dermatitis as eczema. Although it might occur at any stage of life, it is more frequent in kids who are young. Atopic dermatitis is ongoing (persistent) and occasionally swells up. Although it's not spreadable, but it may be annoying. Most typical rash that appears in young people and adults is a brownish-red flaky skin that may rupture and scab if it is touched. A link to a family history of eczema boosts the likelihood of acquiring the condition, indicating a potential inherited component.

**Atopic dermatitis/eczema**

Eczema is a kind of dermatitis, and it appears when the immune system of the skin is exposed to an inflammatory response that includes the epidermis and dermis. It causes red, dry patches on the skin. Eczema has been widely recognized worldwide for its adverse clinical and psychological effects.<sup>[1]</sup> The definition of eczema means a non-contagious

**\*Corresponding Author:**

Afra Malik,

E-mail: [ephrolic@gmail.com](mailto:ephrolic@gmail.com)

epidermal-dermatitis with typical clinical and dermatohistological signs and comprises irritative-toxic and allergic contact dermatitis, but also other forms like seborrheic dermatitis and nummular eczema.<sup>[2]</sup>

It can happen to any age group from children to adults, even a newborn child can experience eczema from mild symptoms to worst. Young children can have different severity and can have blisters as a result. It can happen in your 20's and in 50's also.

There are seven types of eczema depending on the nature of symptoms, intensity, or skin area.

The most common type of eczema is atopic dermatitis, which causes some painful, itchy, dry patches on the skin. If the skin tone is lighter reddish rash appears on the skin, and if the skin tone is darker brownish or purple rash appears under this type.

In addition, there is no specific cause of eczema, but there are certain factors that trigger eczema including environmental conditions, genetics, immune system, and emotional stress.

Some patients contain slight pain other than the additional encompass severe. Hence, the situation differs from person to person. Furthermore, in a lot of belongings the muscles might depreciate and turn into the tainted for the moment paralyzed, not capable on the way to stroll, sprint, find out of bed, or else still swallowing of muscles occurred.<sup>[3]</sup>

Mild eczema can be diagnosed by physical examination. Some other tests such as imaging studies, pulmonary function studies, together with diffusion studies and electrocardiography are completed for the complete diagnosis of the respective disease. Skin biopsy is also done for the diagnosis of dermatomyositis.<sup>[4]</sup>

Scientific workers are also trying to design new drugs and vaccines.<sup>[5-9]</sup> Therefore, computational drug-designing has helped us for the purpose to overcome the resistance and tolerance.<sup>[10-12]</sup>

Development of new drugs, either by the use of proteomics or genomics has been used for decades. The scientists are also trying to synthesize new drugs from viruses.<sup>[13-15]</sup> However, now a day, the trend is being changed to the use of herbal products or their extracts to control the diseases in human beings. A large number of drugs are constantly being explored for their possible pharmacological value particularly for their anti-inflammatory<sup>[16-21]</sup>

and anti-viral<sup>[20,22]</sup> drugs are the other groups being explored. Atopic dermatitis can be prevented by maintaining hygiene.

Hence, to know about the atopic dermatitis affecting different age groups, a research survey should be done to create a link between the disease and its prevalence. The aim of this study is to form a link between the disease and the patients.

## RESEARCH STATISTICS

### Materials and Methods

All kinds of survey do not require any special instrument other than a data book and a pen to note down the data. The precautionary measures are basic ones like not to touch the affected area of the patients. The patients are asked to calm down before filling out the survey.

### Study design

Research was conducted in Bahauddin Zakariya University among students from different backgrounds coming from different cities and of different ages, in multiple phases of the years engaging more than 300 people and more than five cities.

### Statistical analysis

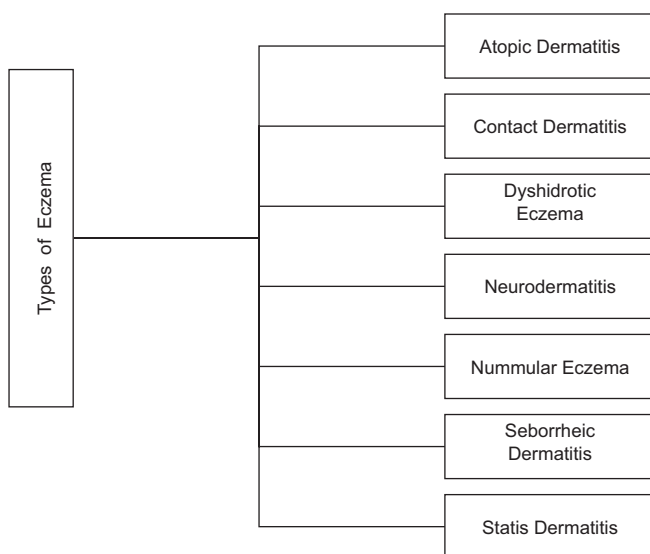
Atopic dermatitis is the most common form of eczema and the main cause of its spread is still unknown, but it is considered that genetics and environmental factors are the main cause of its development and its effect varies from person to person, according to research, there is an increase from 5% to 20% since 2021 in the age group of 18–22 years.

A survey was conducted by Institute of Molecular Biology and Biotechnology (IMBB) department in Bahauddin Zakariya University over a phase of years, and its first phase of survey that was conducted during 2021, where around 100 students from the same city were engaged to evaluate the extent of eczema, and the survey resulted in 0.6–20.5% of the population suffering from this atopic dermatitis. Students conducted another survey after 2021, and when the results of this survey revealed there was

**Table 1:** Results of the survey between different students from five cities of different ages

Age group	Cities	Prevalence (%)	Research conducted by
18–20 years	Multan	0.9–22.5	Students of IMBB
18–20 years	D.G. Khan	0.2–8	Students of IMBB
18–20 years	Lahore	2–25	Students of IMBB
22–24 years	Multan (Virtual University)	0.2–2.4	Other group of students
22–24 years	Multan (Bahauddin Zakariya University)	0.2–6	Students of IMBB
22–24 years	Islamabad	0.2–10.7	Students of IMBB
22–24 years	Muzaffargarh	3.9–11	Students of IMBB

IMBB: Institute of Molecular Biology and Biotechnology



**Figure 1:** Seven types of eczema

an increase of 7.9% from the last survey majorly in the age group of 18–20 year.

This survey was conducted in almost 200 people from around five cities. The prevalence varied by city and the maximum prevalence found in Lahore was 25%. In D.G. Khan, it was 0.2%, in Multan, it went from 0.9% to 22.5%.

Another study was carried out by the other group of students that released its 1-year statistics claiming that in Multan, the frequency of pervasiveness among 22–24-year-olds was 2.4% in Virtual University, and the rate of propagation was 6% in Bahauddin Zakariya University.

According to the survey conducted in the Islamabad, the extent of this disease in people was 10.7%.

In 2021 and 2022, survey was conducted in Muzaffargarh, and the prevalence of eczema increased from 3.9% to 11%.

## RESULTS AND DISCUSSION

The results tell us that eczema is not linked with any city or any specific age factor. If that was the case, then there will be more patients in Muzaffargarh as compared to other cities because of the unawareness of the people and the population. In Multan too, there are different percentages of patients in different areas, which means there must be some environmental condition and genetic condition responsible for the disease.

By getting a survey between different age groups of different cities, we came to know that the same age factor has different prevalence in different cities. However, same age factor living in the same city has different prevalence at different areas of the city. By the results, we came to a conclusion that there must be some environmental factors or some genetics that are influencing the disease to be spread less in some part of the city and spread more in other part of the city. Types of eczema are atopic dermatitis, contact dermatitis, dyshidrotic eczema, neurodermatitis, nummular eczema, seborrheic eczema and stasis dermatitis [Figure 1].

In Multan, 18-20 years age group has a prevalence of 0.9-22.5%. In D.G Khan, 18-20 years age group has a prevalence of 0.2-8%. In Lahore, 18-20 years age group has a prevalence of 2-25%. In Multan (Virtual University), 22-24 years age group has a prevalence of 0.2-2.4%. In Multan (Bahauddin Zakariya University), 22-24 years age group has a prevalence of 0.2-6%. In Islamabad, 22-24 years age group has a prevalence of 0.2-10.7%.

In Muzaffargarh, 22-24 years age group has a prevalence of 3.9-11%. Research was conducted by the students of IMBB (Institute of Molecular Biology and Biotechnology) [Table 1].

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As in Multan, Virtual University has less prevalence of the disease compared to the Bahauddin Zakariya University. Hence, there must be other factors which are influencing the prevalence of this disease in different areas of different age groups.

## CONCLUSION

In this article, dermatology was briefly and specifically discussed. Dermatologic conditions like eczema discussed in detail which is a kind of dermatitis and its types were explained shortly, main causes of eczema were highlighted and it was concluded that there is no main cause of eczema but it is triggered due to some environmental conditions, immune system, genetic problems or taking some allergic food or substance. It was important to share the main symptoms of eczema that how it looks like on different parts of bodies including the infants. Eventually, diagnosis, treatment, and how it can be prevented was discussed in detail. A research survey was conducted to show that the eczema does not depend on a specific location or some age factor rather, it depends on the environmental conditions to occur. In our case, it mostly targets the young students living in harsh environments in comparison to the remaining ones. Scientists are currently working to develop a probiotic (helpful bacteria) that can help ease in the symptoms of eczema and the need of steroid medicine in the children will be reduced. The future recommendation is to work on developing a probiotic for eczema.

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