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Psychological Impact on the Parents of Children Affected with Atopic Dermatitis in a Tertiary Care Centre

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ABSTRACT

Atopic dermatitis (AD) is a pruritic, chronic relapsing, eczematous, inflammatory, non-infectious skin illness that affects up to 20% of the population and has a wide range of clinical characteristics. Atopic dermatitis is linked to a variety of co-morbidities, such as food allergies, asthma, allergic rhinitis, and mental health issues. Complex interactions between predisposing genes, the immune system, and the environment have been connected to the pathogenesis. The pathophysiology is complicated, with a strong hereditary susceptibility, epidermal malfunction and T-cell-driven inflammation all playing a role. It is characterized by a constellation of findings like pruritus, macular erythema, papules, excoriation, oozing, crusting, xerosis, lichenification and secondary infection. The initial diagnosis is rarely by investigations. Total Serum IgE, Specific serum IgE and prick tests help to detect the atopic nature of the individual. Although the disease is self-limiting, still it has many psychological impacts like rage, anxiety, sadness. It has a great psychological impact on the family and it affects the quality of life also. Along with socially impacting the life of children, it has psychologically hit the family especially the mothers of such children. An observational study shall be done in the Dept of Dermatology and Venerology in Terna hospital and specialty center at Nerul. The aim of our research is to study the psychological effects on the parents of children affected with Atopic Dermatitis in a tertiary care Centre. Hanifin and Rajka criteria are considered the standard for clinical diagnosis. For diagnosis, we must have 3 or more major as well as 3 minor criteria. To determine the extent and severity, SCORAD system shall be clinically used for the patients. Hamilton Anxiety Rating Scale and Questionnaire is used to assess the response of the patients. A proforma shall be given to the patients to fill with their consent.

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Key Words

Macular erythema, papules, excoriation, Serum IgE

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INTRODUCTION

Atopic dermatitis (AD) is a pruritic, chronic relapsing, eczematous, inflammatory, non-infectious skin illness that affects up to 20% of the population[1] and has a wide range of clinical characteristics. Atopic dermatitis is linked to an increased risk of a variety of co-morbidities, such as food allergies, asthma, allergic rhinitis, and mental health issues. Complex interactions between predisposing genes, the immune system and the environment have been connected to the pathogenesis. The pathophysiology is complicated, with a strong hereditary susceptibility, epidermal malfunction, and T-cell-driven inflammation all playing a role. It is characterised by a constellation of findings like pruritus, macular erythema, papules ,excoriation ,oozing, crusting, xerosis, lichenification and secondary infection. The initial diagnosis is rarely by investigations. Total Serum IgE, Specific serum IgE and prick tests help to detect the atopic nature of the individual. Although the disease is self-limiting, still it has many psychological impacts like rage, anxiety, sadness. Atopic dermatitis (AD) is a chronic skin disorder affecting between 5% and 20% of children at one time or other[2-3]. Although psychological factors are widely considered to be important in atopic eczema, there have been only a few studies to assess the extent of disturbance caused by persistent itching and sleep deprivation in affected children and the problems experienced by their parents[4-6]. In fact, the link between atopic dermatitis (AD) and emotional disturbance has been well documented over the last 50 years[6]. Pre-school children with AD are excessively dependent, shy, and fearful and have more behavioral problems than children with normal skin[5]. It was also observed that fewer mothers of preschool children with AD work (27% versus 65%) or feel supported socially (34% versus 65%) and maternal distress is greater when a pre-school child has AD (85% versus 31%). Similarly, an increased rate of psychological disturbances has been observed even in school-going children with AD[4]. These may include time off-school and impaired performance because of sleep deprivation, which may become habitual and persist even when the eczema is less severe[7]. It may also be associated with a poor self-image and lack of self-confidence[8]. Atopic dermatitis may also have a negative impact on the interactions between the child and the mother, as one of the conduits for physical contact between the two is the skin[9]. A dysfunctional mother-child relationship can lead to physical and emotional developmental arrest. In earlier studies, as well, stressed mothering, maternal rejection, hostility, neglect and rough handling or a lack of holding and caressing, have also been demonstrated in mothers of children with AD. The personality of the mother may be greatly affected by the demands the child's eczema makes on her, due to the impact of the disease on the child's appearance, the additional restlessness and irritability, more disturbed nights, the time-consuming nature of the skin care routine and her inability to cure or soothe the child, as these will add to the stresses and exhaustion of motherhood[9]. The child's behavioral disorders or emotional disturbance may also cause maternal distress. On the other hand, maternal mood disorders are known to cause psychological problems in children and such disorders to exacerbate the atopic dermatitis as well as psychological disorders in children[11]. In India, the emotional dimensions of AD have been left largely un-addressed and there is a paucity of controlled studies to assess the excess of disturbance in affected children and the problems experienced by parents, So the current study was undertaken to assess psychological stress among parents of children with atopic dermatitis.

Aim and Objectives of the study

To study the psychological effects on the parents of children affected with Atopic Dermatitis in a tertiary care centre.

To study the prevalence and aggravating factors of Atopic dermatitis in children, in a tertiary care centre.

- To study the prevalence of Atopic dermatitis in children, in a tertiary care centre and its aggravating factors
- To study the effect that Atopic Dermatitis has on the social behavior, lifestyle and acceptance of the children in their social sphere.
- The secondary objective will include the diseased child's difficulties, if any, in gaining social acceptance or receiving any differential treatment that may be linked to Atopic Dermatitis, as well as the parents' perspectives on the subject.
- The afflicted child's challenges, if any, in acquiring social acceptance or receiving any differentiated care that may be linked to AD, as well as the parents' thoughts on the matter, will be the secondary purpose.

MATERIALS AND METHODS

The retrospective and prospective study will be conducted in the out-patient and inpatient departments of the Department of Dermatology, Venereology Nerul. The children with AD who are being treated and their psychological effects will be the focus of the research.

Patients are diagnosed and then assessed using Hanifin and Rajka criteria after receiving consent.

Hanifin[13] cited three essential features of 1. pruritis, 2. typical morphology and distribution of eruptions 3. chronic course of dermatitis. A questionnaire based on the Hamilton Anxiety Rating Scale (HARS) will be given to the participants and their responses will be recorded[14].

Hamilton Anxiety and Rating Scale and Questionarre: There are numerous proposed scoring systems for assessing the severity of Atopic Dermatitis. There are three, that are most commonly used for scoring- SCORAD, Eczema Area and Severity Index (EASI), Patient Oriented Eczema Score (POEM).

SCORAD[15]**:** stands for SCORing Atopic Dermatitis. It is a clinical tool for determining the severity and extent of eczema.

SCORAD Index Formula is- A/5 + 7B/2 + C

- A is the Extent of Eczema based on body surface area. And it is measured on a scale from 0-100.
- B is the Intensity Score of Eczema. And it is measured on a scale from 0-18.
- C is the Subjective symptoms of Eczema. And it is measured on a scale from 0-20.

Therefore, the maximum score of SCORAD Index can be 103.

The rule of 9 is used to calculate the affected area (A) as a percentage of the whole body.

The score for each area is added up.

Intensity: In an area of eczema, the intensity of each of the following signs is assessed as none (0), mild (1), moderate (2) or severe (3). The following clinical findings are assessed to measure the intensity- Erythema, Edema/ Papulations, Oozing/ Crusting, Excoriation, Lichenification, Dryness.

The intensity scores are added together to give 'B' (maximum 18).

Subjective Symptoms which include Daily Pruritis (0-10) and Sleeplessness/Insomnia (0-10).

0-Lowest possible score, 10-Highest possible score

Interpretation as-

<25- Mild Atopic Dermatitis

25-50- Moderate Atopic Dermatitis

>50- Severe Atopic Dermatitis

Study Plan

Study Duration: The duration of this study is 2 years (May 2022-April 2023)

Study Setting: The study will be conducted in Department of Dermatology, Venerology and Leprosy in Terna hospital and research institute situated in Nerul, Navi Mumbai.

Both prospective and retrospective components are included in this study.

Study Group: Children (under the age of 18) with Atopic Dermatitis attending OPD in TSHRC hospital and who meet the inclusion criteria are eligible to participate in the study.

All parents of children (under the age of 18) with Atopic Dermatitis who meet the inclusion criteria are eligible to participate in the study. Interaction with parents of children with Atopic Dermatitis and receiving their responses on various aspects of psychological stresses they confront will be part of the current study.

This will entail the creation of a proforma that such parents will fill out in order to achieve the primary goal.

Inclusion Criteria:

- Children with Atopic Dermatitis who are<18 years of age.
- Mothers of children with Atopic Dermatitis who are <18 years of age.
- Individuals who are willing to give written and informed consent for the study.

Exclusion Criteria:

- Mothers of children who have preexisting anxiety disorders.
- Children with other dermatological disorders apart from Atopic Dermatitis.

RESULTS AND DISCUSSIONS

In the present study, we aimed to assess the psychological impact on parents of children affected with atopic dermatitis in a tertiary care center. Atopic dermatitis not only affects the physical health of children but also has significant implications for the emotional well-being and quality of life of their parents. Understanding the psychological burden experienced by parents is crucial for providing comprehensive care and support to families dealing with this chronic skin condition.

Prevalence: The prevalence of atopic dermatitisin (Table 3) was 1.3% among the 6095 children who took part in our study. It was significantly lesser than an American study done by Jonathan[16] in 2019 where the prevalence of atopic dermatitis was 7.3 percentamong 1,278 people. The low prevalence in our study could be attributed to a hot and humid climate

Demographic Information: The age distribution of the study subjects in (Table 4) revealed that the majority belonged to the age group of 6-10 years (41.56%). This suggests that atopic dermatitis tends to affect children during their early school years. The second most prevalent age group was 11-15 years (32.47%). This finding indicates that the condition continues to be a significant concern for adolescents. Furthermore, subjects below the age of 5 years accounted for 19.48% of the study population, emphasizing that atopic dermatitis can also affect infants and toddlers. The mean age of the study subjects was calculated to be 9.32 years while the mean age of mothers was 34.32 years which is comparable to earlier studies

Regarding the gender-wise distribution in (Table 5), our

Table 1: Hamilton anxiety and rating scale

0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe.

1 Anxious mood [0] [1] [2] [3] [4]

Worries, anticipation of the worst, fearful anticipation, irritability.

2 Tension [0] [1] [2] [3] [4]

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3 Fears [0] [1] [2] [3] [4]

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4 Insomnia [0] [1] [2] [3] [4]

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

5 Intellectual [0] [1] [2] [3] [4]

Difficulty in concentration, poor memory.

6 Depressed mood [0] [1] [2] [3] [4]

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7 Somatic (muscular) [0] [1] [2] [3] [4]

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8 Somatic (sensory) [0] [1] [2] [3] [4]

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9 Cardiovascular symptoms [0] [1] [2] [3] [4]

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.

10 Respiratory symptoms [0] [1] [2] [3] [4]

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11 Gastrointestinal symptoms [0] [1] [2] [3] [4]

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12 Genitourinary symptoms [0] [1] [2] [3] [4]

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.

13 Autonomic symptoms [0] [1] [2] [3] [4]

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14 Behavior at interview [0] [1] [2] [3] [4]

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.

Table 2: Rule of 9

Body Part	% Area
Head and Neck	9%
Upper limbs	9% each
Lower limbs	18% each
Anterior trunk	18%
Back	18%
Genitals	1%
Total	100%

Table 3: Prevalence

Disease	Number of subjects	Percentage
With Atopic Dermatitis	77	1.3
Without Atopic Dermatitis	6018	98.7
Total	6095	100

Table 4: Age distribution

Age distribution	Number of subjects	Percentage
Less than 5 years	15	19.48
6-10 years	32	41.56
11-15 years	25	32.47
>15 years	5	6.49
Total	77	100

Table 5: Gender wise distribution

Gender wise distribution	Number of subjects	Percentage
Females	39	50.65
Males	38	49.35
Total	77	100

Table 6: Duration of symptoms

Duration of symptoms	Number of subjects	Percentage
Less than 6 months	12	15.58
7-12 months	23	29.87
13-24 months	15	19.48
25-36 months	10	12.99
<36 months	17	22.08
Total	77	100

Table 7: Aggravating factors for AD

Aggravating factors for AD	Number of subjects	Percentage
Food allergens	13	16.88
Outdoor sports like gymnastics and swimming	9	11.69
Family history of AD	7	9.09
Similar history in siblings	5	6.49
Previous history of AD	8	10.39
History of Asthma in family	7	9.09

Table 8: Type of fabric used

Type of fabric used	Number of subjects	Percentage
Cotton	37	48.05
Nylon	13	16.88
Synthetic	27	35.06
Total	77	100

Table 9: Previous psychological symptoms in mother

Any previous psychological symptoms in mother Gender wise distribution	Number of subjects	Percentage
NO	35	45.45
YES	42	54.55
Total	77	100

Table 10: Preexisting psychological disorders

Preexisting psychological disorders	Number of subjects	Percentage
NO	77	100
YES	0	0
Total	77	100

Table 11: Parameter of HAMA scale of anxiety

Parameters	Score				
	0	1	2	3	4
ANXIOUS MOOD	26	45	6	0	0
TENSION	21	49	7	0	0
FEARS	20	49	8	0	0
IMSOMNIA	35	42	0	0	0
INTELLECTUAL	31	46	0	0	0
DEPRESSESED MOOD	32	44	1	0	0
SOMATIC SYMPTOMS MUSCULAR	2	49	1	0	0
SENSORY SYMPTOMS	40	37	0	0	0
CARDIOVASCULAR SYMPTOMS	32	34	0	0	0
RESPIRATORY SYMPTOMS	35	42	0	0	0
GI SYMPTOMS	28	49	0	0	0
GENITO-URINARY SYMPTOMS	34	42	1	0	0
AUTONOMIC SYMPTOMS	35	41	1	0	0
BEHAVIOUR AT INTERVIEW	29	48	0	0	0

Table 12: HAM-A grading of anxiety

HAM-A grading of anxiety	Score	Number of subjects	Percentage
Mild anxiety	6-14	76	98.70
Moderate Anxiety	15-28	1	1.30
Severe anxiety	29-52	0	0.00
Total		77	100

Table 13: Hanifin rajka criteria

Hanifin Rajka Criteria	Score	Number of subjects	Percentage
Mild anxiety	7	27	35.06
Moderate Anxiety	8	29	37.66
Severe anxiety	9	21	27.27
Total		77	100

Table 14: Recurrence of lesions

Recurrence of lesions	Number of subjects	Percentage
Absent	32	41.56
Present	45	58.44
Total	77	100

Table 15: Comparison of recurrence of symptoms with other clinical parameters

Parameters	Recurrences		p-value
	Present	Absent	
Mean HAM-A score	8.93	8.62	0.18
Mean duration of symptoms	25.42	25.21	0.48
Mean Hanifin Rajka score	8.12	7.77	0.028

Table 16: Comparison of Studies

Studies	Mean age of mother
Present study	34.32 years
Tan W F[19]	31 years
Silverberg[20]	46.6 years
Dieris-Hirche[21]	27.6 years
Lim VZY[22]	25.7 years

Table17:Studies and Mean HAM-Score

Studies	Mean HAM-A score
Present study	8.805
Tan WF[19]	5.3
Silverberg[20]	7.7
Dieris-Hirche[21]	8.2
Lim VZY[22]	7.2
Chiesa Fuxench[23]	7.0

study demonstrated a nearly equal representation of males and females among the study subjects. Females accounted for 50.65% of the participants, while males constituted 49.35% of the study population. This gender parity suggests that atopic dermatitis does not exhibit a significant gender bias, affecting both sexes similarly. Similar observations were reported by Tan WF[19] where they found 47.9% males and 52.1% subjects were females.

By recognizing that the majority of affected individuals fall within the age range of 6-10 years, healthcare professionals can tailor their efforts to address the specific needs and challenges faced by this age group.

Duration of Symptoms: Our findings as shown in Table 6 revealed that the majority of the study subjects had a duration of symptoms ranging from 7-12 months, accounting for 29.87% of the total participants, while 22.08% of the study subjects had a duration of symptoms greater than 36 months. This observation suggests that atopic dermatitis is often characterized by a relatively long-lasting course, with symptoms persisting for almost a year in a significant proportion of individuals and may last for three years or more. This finding highlights the chronic nature of the condition and underscores the challenges faced by patients and healthcare providers in managing the symptoms over an extended period. The presence of such long-standing symptoms has significant implications for the quality of life and psychological well-being of affected individuals. The mean duration of symptoms among the study subjects was calculated to be 25.33 months.

Aggravating Factors for AD: In the present study as shown in (Table 7), several factors were identified among the participants which contribute to the development of Atopic Dermatitis. Firstly, a notable percentage (16.88%) of the study subjects reported a history of exposure to food allergens. This finding suggests that dietary factors, specifically allergenic foods, may play a significant role in triggering or exacerbating AD symptoms. It is well-established that certain food allergens, such as cow's milk, eggs, peanuts and wheat, can act as triggers for AD in susceptible individuals. The high prevalence of food allergen history among the study subjects underscores the importance of dietary interventions in the management of AD.

Secondly, outdoor sports like gymnastics and swimming were reported by 11.69% of the study subjects. This observation indicates that physical activities in certain environmental conditions may contribute to AD symptoms. Factors such as excessive sweating, exposure to chlorinated water and friction from sportswear could potentially irritate the skin and trigger AD flares. Therefore, individuals with AD engaging in outdoor sports should be cautious and take necessary precautions to minimize potential aggravation of their condition.

Furthermore, we found that a proportion of study subjects (9.09%) had a positive family history of AD. This finding supports the role of genetic predisposition in the development of AD. Family history has long been recognized as a significant risk factor for AD, suggesting a hereditary component in the pathogenesis of the disease. The presence of AD in close relatives may indicate a shared genetic susceptibility to allergic conditions and underscores the importance of genetic counseling and early intervention for individuals with a family history of AD. Tan WF[9] in their study observed that family history of atopy was found among 67.3% study subjects.

Additionally, a small percentage (6.49%) of the study subjects reported a similar history of AD in their siblings. This finding suggests that sibling history of AD could also contribute to an increased likelihood of developing the condition. Shared environmental factors, genetic predisposition and potentially similar lifestyles within families could all play a role in the observed association. Further research exploring the interplay between familial and environmental factors is warranted to better understand the mechanisms underlying sibling-related AD risk.

Moreover, 10.39% of the study subjects had a previous history of AD, indicating a relapsing nature of the condition. AD is known to exhibit a chronic and recurrent course, with periods of remission and exacerbation. The presence of a previous history of AD among a significant proportion of the study subjects highlights the importance of continuous management and long-term follow-up to prevent relapses and maintain optimal skin health. Tan WF[9] in their study observed that personal history of atopy was found among 66.4% study subjects from Malaysia.

Finally, we noted that 9.09% of the study subjects reported a history of asthma in their family. This observation suggests a potential association between AD and asthma, which is consistent with previous research demonstrating a close relationship between these two allergic conditions. The shared pathophysiological mechanisms and underlying

immune dysregulation in AD and asthma may contribute to the observed co-occurrence.

Type of Fabric Used: In the present study as shown in (Table 8), we assessed the type of fabric used by individuals with atopic dermatitis. Our findings revealed that different types of fabrics were utilized by the participants, with notable variations in their prevalence. Cotton was found to be the most commonly used fabric among the study subjects, with 48.05% reporting its usage. Cotton is often recommended for individuals with AD due to its soft, breathable, and hypoallergenic properties. The natural fiber of cotton allows for better air circulation and moisture absorption, reducing the likelihood of skin irritation and facilitating a more comfortable wearing experience. The high prevalence of cotton usage suggests that individuals with AD are aware of the benefits associated with this fabric and actively choose it to minimize potential skin irritation and exacerbation of AD symptoms.

Nylon was reported to be used by 16.88%, while Synthetic fabrics were used by 35.06% of the study subjects. Nylon fabrics are known for their durability, stretchability, and ability to wick away moisture whereas Synthetic materials, such as polyester, rayon, and spandex, are commonly found in various clothing items due to their afford ability, versatility, and ease of maintenance. However, Nylon & Synthetic fabrics are generally less breathable and have a higher potential for trapping moisture compared to natural fibers. The increased moisture and reduced air circulation can contribute to skin irritation and exacerbation of AD symptoms. The relatively high prevalence of nylon together with synthetic fabric usage in our study raises concerns regarding the potential impact of these materials on individuals with AD. It highlights the need for education and awareness regarding the choice of fabrics to minimize potential skin irritation and promote skin health in individuals with AD.

Preexisting Psychological Disorders or Any Previous Psychological Symptoms in Mother: Among the study subjects as shown in (Table 9 and10), we observed that 54.55% of the mothers reported the presence of previous psychological symptoms. These symptoms could include a range of psychological distress, such as anxiety, depression, stress, or other related symptoms. The prevalence of psychological symptoms among the mothers highlights the potential impact of maternal mental health on the well-being of their children, including those with the condition under investigation. The presence of psychological symptoms in a significant proportion of mothers underscores the importance of considering the potential psychological burden they may experience and the need for appropriate support and intervention to ensure their well-being and ability to effectively care for their children.

Interestingly, in our study, we did not observe any preexisting psychological disorders among the study subjects. This finding suggests that the study population of mothers did not have a diagnosed psychological disorder prior to participating in the study. It is worth noting that this finding does not necessarily imply the absence of psychological disorders in the general population or among mothers in different contexts. The absence of preexisting psychological disorders among the study subjects reflects the inclusion criteria applied in the study.

Maternal psychological symptoms can potentially impact parenting practices, emotional bonding and overall family dynamics, which in turn may influence the outcomes and management of AD. Therefore, it is crucial to consider the psychological well-being of mothers and provide necessary support, early identification, and intervention. Interventions targeting maternal mental health and well-being may be valuable in improving overall family functioning and optimizing the care provided to children with the studied condition.

Parameters of HAM-A Scale of Anxiety: Through our analysis as shown in (Table 11), we explored multiple parameters included in the HAM-A scale like anxious mood, tension, fears, insomnia, intellectual depressed mood, somatic symptoms (muscular), sensory symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, genito-urinary symptoms, autonomic symptoms and behavior at interview, to gain a comprehensive understanding of the anxiety experienced by the study subjects. The HAM-A scale is designed to capture the multifaceted nature of anxiety and provides a structured approach to evaluate its different dimensions. Our findings, as presented in the accompanying table, provide valuable insights into the distribution and severity of anxiety symptoms among the study subjects. The results for each parameter reveal the prevalence and intensity of anxiety symptoms within the sample population. For instance, the parameter "anxious mood" assesses the presence of a persistent sense of apprehension or tension, while "tension" evaluates the level of motor restlessness and inability to relax. Similarly, "fears" examines the presence of specific phobias or irrational fears that may contribute to anxiety levels. The assessment of insomnia is essential, as sleep disturbances are commonly associated with anxiety disorders. Intellectual depressed mood explores the cognitive aspect of anxiety, such as feelings of hopelessness, low self-esteem and pessimism. Somatic

symptoms, including muscular tension and sensory symptoms, provide insights into the physical manifestations of anxiety experienced by the study subjects. Furthermore, the evaluation of cardiovascular, respiratory, gastrointestinal and genito-urinary symptoms allows for a comprehensive understanding of the physiological impact of anxiety on various body systems. Autonomic symptoms, such as increased heart rate, sweating, and trembling, reflect the body's physiological response to anxiety. Lastly, the parameter "behavior at interview" provides an overall assessment of the subject's demeanor and presentation during the evaluation process.

HAM-A Grading of Anxiety: Our analysis as shown in (Table 12), revealed that the majority of the study subjects (98.7%) exhibited a milder form of anxiety, indicating relatively lower levels of anxiety symptoms. This finding suggests that the overall anxiety burden among individuals with atopic dermatitis in our study population was generally mild. Furthermore, a small proportion of the study subjects (1.3%) exhibited a moderate form of anxiety. This suggests that a minority of individuals with atopic dermatitis experienced more pronounced anxiety symptoms, which may require additional attention and intervention to address their psychological well-being effectively.

Hanifin Rajka Criteria: In addition to assessing anxiety severity, we also evaluated the presence of atopic dermatitis according to the Hanifin Rajka criteria as shown in (Table 13). The Hanifin Rajka criteria provide a standardized approach for diagnosing atopic dermatitis based on specific clinical features. By applying these criteria, we aimed to identify the distribution of scores among the study subjects, which can offer insights into the clinical presentation and severity of atopic dermatitis in our study population. Our findings demonstrated that the most common score observed among the study subjects was 8, accounting for 37.66% of the individuals. This suggests that a significant proportion of the study subjects had moderate to severe manifestations of atopic dermatitis, as indicated by the Hanifin Rajka criteria. Furthermore, a score of 7 was observed in 35.06% of the subjects, indicating a substantial number of individuals with moderately severe atopic dermatitis. Finally, a score of 9 was noted among 27.27% of the study subjects, representing a smaller proportion with severe forms of atopic dermatitis. The distribution of scores according to the Hanifin Rajka criteria provides valuable information about the clinical spectrum and severity of atopic dermatitis in our study population. By considering these scores, healthcare professionals can better understand the clinical profile and tailor treatment strategies to address the specific needs of individuals with different severity of atopic dermatitis.

Recurrence of lesions: In the present study as shown in (Table 14) we assessed recurrence of lesions among the study subjects. We observed that recurrence of lesions was noted among 58.44% study subjects.

Comparison of recurrence of symptoms with other clinical parameters

We specifically examined the association between the severity of anxiety symptoms measured by the HAM-A score, the duration of symptoms, and the recurrence of lesions. Interestingly, our analysis as shown in (Table 15) did not reveal any statistically significant association between the HAM-A score and the recurrence of lesions or the duration of symptoms. This suggests that the severity of anxiety symptoms, as measured by the HAM-A scale, did not directly influence the likelihood of recurrence or the duration of symptoms in subjects with atopic dermatitis. These findings imply that while anxiety symptoms and atopic dermatitis may coexist, they may not have a direct causal relationship in terms of symptom recurrence or duration.

Additionally, we explored the relationship between the severity of atopic dermatitis based on the Hanifin Rajka criteria and the recurrence of lesions. Our study did find a significant association between the severity of atopic dermatitis based on the Hanifin Rajka criteria and the recurrence of 80 lesions. This indicates that individuals with more severe forms of atopic dermatitis, as determined by the Hanifin Rajka criteria, were more likely to experience recurrent lesions. This finding aligns with previous research suggesting that the severity of dermatological manifestations in atopic dermatitis is a significant factor contributing to the recurrence of symptoms. These results highlight the importance of considering the clinical severity of atopic dermatitis when evaluating the likelihood of symptom recurrence. Individuals with more severe forms of the condition may require more intensive management strategies and targeted interventions to reduce the frequency and intensity of lesion recurrences.

Summary:

- The majority of the study subjects fell within the age group of 6-10 years, followed by 11-15 years and <5 years. The mean age of the study subjects was 9.32 years.
- The study subjects were nearly evenly split between males and females, with 50.65% females and 49.35% males.
- Most study subjects reported a duration of - symptoms between 7 to 12 months. A significant

percentage of subjects had symptoms persisting for over 36 months. The mean duration of symptoms among the study subjects was 25.33 months.

- Various aggravating factors were identified, including a history of food allergens, participation in outdoor sports like gymnastics and swimming, family history of AD, similar history in siblings, previous history of AD and a history of asthma in the family.
- The study subjects primarily used cotton fabric, followed by nylon and synthetic materials.
- A high proportion of study subjects experienced the recurrence of lesions.
- Approximately 54.55% of mothers of the study subjects exhibited psychological symptoms.
- None of the study subjects had preexisting psychological disorders.
- Parameters of HAM-A Scale of Anxiety such as anxious mood, tension, fears, insomnia, intellectual depressed mood, somatic symptoms (muscular and sensory), cardiovascular symptoms, respiratory symptoms, GI symptoms, genito urinary symptoms, autonomic symptoms, and behavior at the interview were 87 assessed. The majority of the study subjects had a milder form of anxiety, while a small percentage had a moderate form.
- Hanifin Rajka Criteria**:** The study subjects were evaluated based on the Hanifin Rajka criteria, and scores of 8, 7 and 9 were the most prevalent.
- No statistical association was found between HAM-A score and recurrence of lesions or duration of symptoms.
- A significant association was observed between Hanifin Rajka criteria and recurrence of lesions.

CONCLUSIONS

The present study concludes that AD affects children across various age groups, with a higher prevalence observed in the 6-10 years age range. AD can affect both males and females without a significant gender difference. AD can persist for a significant period, with the majority of subjects experiencing symptoms between 7-12 months and some subjects having symptoms for over 36 months. Environmental and genetic factors such as food allergens, outdoor sports, family history of AD, and asthma were identified as potential aggravating factors for AD. Cotton was the most commonly used fabric among the study subjects, followed by synthetic fabrics and nylon. More than half of the mothers of the study subjects exhibited psychological symptoms, highlighting the emotional burden they experience. None of the study subjects had pre-existing psychological disorders, suggesting that the observed psychological effects are primarily related to their child's AD. The majority of study subjects experienced recurrent lesions, emphasizing the chronic and relapsing nature of AD. The study used the HAM-A scale to assess various parameters of anxiety, indicating that AD can contribute to increased levels of anxiety in affected individuals, predominantly in milder forms. There was a significant association between the Hanifin Rajka criteria and the recurrence of lesions, underscoring the clinical relevance of these criteria in monitoring and managing AD symptoms.

Need for Research: Though it is a widespread illness, the psychological impacts it has on Indians are poorly understood. Despite the fact that it is a self-limiting disease, it is associated with psychological symptoms such as sadness, low self-esteem and anxiety and many others. As a result, this research is being carried out in order to gain a better understanding of the psyche of parents affected by it, as well as what can be done to better manage it when the parents come to our hospital for the treatment of their children,

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