



Impact of Atopic Dermatitis on the Quality of Life among School Age Group (6-14) Years in Khartoum Dermatology and Venereology Hospital

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Abstract

Background: AD is the most common chronic inflammatory skin disease, characterized by purities, eczematous lesions and recurrent episodes. A complex genetic disease with environmental influence, associated with other allergic disease, usually beginning during infancy (early onset) & first developing in adulthood (late onset), a proactive approach to the management of disease recommended. Education, gentle skin care, avoidance of triggering factors and use of emollient and topical agents represent the mainstay of the disease.

Methods: In a descriptive cross-sectional hospital based study, 89 AD study participants were enrolled in this study fulfilling all inclusion criteria, SPSS version 25 used for analysis and obtaining the results. Eighty nine AD patients of school age group between (6-14) years and their parents completed specific QoL questionnaire in AD patients in KDVBH.

Result: Majority of the study participants were females, hundred percent of participant student, jaly most tribe affected, itching has severe effect on daily activity severe effect school performance, severe effect on the sleep, also treatment has severe effect on QOL, effect of AD on mood mild, health care effect moderate, has moderate social effect, sport & playing sever affected, clothing and hygiene has severe effect in QOL, lack of knowledge about disease.

Conclusion: A strong association was found between AD and poor quality of life, that Atopic dermatitis affect many aspect of life style, and there is deep impact on school age children between 6-14 years that need long term workup for treatment and follow up, and further genetic studies needed to determine why AD is found more in specific tribe more than other.

Keywords: Atopic Dermatitis; Eczematous Lesions; Pruritus; Skin Lesions

Abbreviations

AD: Atopic Dermatitis; QOL: Quality of Life; HRQOL: Health Related Quality of Life; KDVBH: Khartoum Dermatology & Venereology Hospital; GADIS: German Atopic Dermatitis Intervention Study.

Introduction

Atopic dermatitis (AD) is the most common chronic inflammatory disease, represent major health problem worldwide, the term "atopy" originates from Greek word mean unusual things, AD associated with other allergic

disease. Three subsets of AD based on age of onset, infantile AD age less than 2 years most common on cheek, childhood AD between age 2 to 12 years most common site antecubital & popliteal fossae, adult AD age more than 12 years, senile AD more than 60 years characterized by marked xerosis. AD can make life miserable especially in children that affect their life style. The treatment of AD has some difficulties not only due to the difficulty in relation to the clinical aspects but also because of the financial investment hard for families to maintain long term care and treatment which must continue with the continued treatment. The objective of this study was to assess how AD affects the QoL of the school- age group between (6-14) yrs & find a solution to it.

Problem Statement

Atopic Dermatitis is one of the commonest skin diseases which are neglected in my country, there are many effects e.g. psychological effects and financial costs to the patient's family and government. Which makes life terrible for patients. Especially school age group children between 6-14 years.

Literature Review

Atopic dermatitis (AD) is the most common chronic inflammatory skin disease. Characteristic features of AD pruritus & chronically relapsing course and eczematous lesions. The site usually depends on patient age [1]. Usually beginning during infancy but occasionally first developing adulthood (late onset) but can occur at any age [2]. Its prevalence increase become major health problem & the reasons not established, but believed that in addition to complicated genetic factor, environmental factors, pollutants, exposure to allergies and infections might be involved [3]. The diagnosis is usually clinically made by the morphology and distribution of skin lesions, associated with personal or family history of atopy. The clinical criteria used are the one by Hanifin and Rajka [4]. Most cases of AD is associated with other atopic disorders such as asthma, food allergy and allergic rhinitis which characterizes the genetic predisposition of these individuals to exaggeratedly synthesize Immunoglobulin E (IgE) specific for various antigens, especially for those inhaled [5,6]. The sensitivity to allergens through the skin seems to predispose patients to atopic respiratory diseases [7].

There is a common physiological path among severe AD, asthma and allergic rhinitis confirming the multiple factors in its etiology [8]. The concepts of quality of life (QoL) and quality of life related to health (HRQoL) are used to define treatment and evaluate the cost / benefit of the procedures employed in the health sector [9-11]. The instruments used to measure QoL questionnaires are based on data collected

to assess physical, psychological and patient intervention results [12,13]. This method has been widely used, especially in chronic diseases cause great impact on the lives of patients [12-14]. AD is one of the diseases responsible for the negative impact on the patients QoL [15]. Several aspects of the patient's life affected by AD, such as sports, sleep or study and other many life style depend on age, sex and professional life. The patients frequently experience significant psychological changes that often develop to severe depression [15,16]. In fact, AD causes changes in the QoL of the patient and family socially, emotionally and financially. The overload of caring for patients with AD may lead to conflicts between parents and healthy siblings which alters the family's structure [17,18].

Related Studies

- Males constituted majority of the patients, Sleep, monthly expenditure, and food preparation were the activities showing the highest level of disturbance. The disturbance in quality of life was significantly correlated to increasing severity of the disease. The study has emphasized the importance of investigating the quality of life of atopic dermatitis families [19].
- There is a psychological and psycho-social effect of childhood eczema across all aspects of life. Sleep deprivation leads to tiredness, mood changes and impaired psychosocial functioning of the child and family, particularly at school and work. The child's lifestyle is often limited, difficulties with complicated treatment regimens and increased work in caring for a child with eczema lead to parental exhaustion and feelings of hopelessness, guilt, anger and depression [20].
- There is study demonstrate that AD has a significant negative impact on infants' QoL as well as on QoL of their parents [21].
- Current atopic dermatitis diagnostics and treatment have to be extended to the factors influencing both children' as their caregivers' quality of life and adapting management accordingly. Itching/scratching, emotional distress and sleep disturbance deserve attention [22].
- There is evidence that different treatment modalities may be effective in improving HRQoL in adults, children, and parents, which is supported by the patients' own evaluation of treatment benefit in an observational study [23].
- The German Atopic Dermatitis Intervention Study (GADIS), There were significant but low correlations between the severity of atopic dermatitis and the itch intensity. Itch and sleeplessness were significantly correlated. Significant correlations of itch with the coping behavior and quality of life in parents of children with atopic dermatitis showed a significant negative correlation with itch intensity and coping strategies

should be considered when treating patients with AD [24].

- Not all aspects of QoL are affected equally in children with AD. The disease seems to affect personal domains of itch and sleep more than the interpersonal issues. Age and gender are relevant factors in QoL, with the issue of clothes/shoes being more troublesome for girls. Itch and sleep disturbance seem to be a problem mainly in younger children [25].

Objective of the Study

This study aims to determine & evaluate the impact of Atopic Dermatitis on the quality of life among school age group (6-14) years in KDVH.

Patients & Methods

Descriptive cross-sectional hospital based study; study was done in Khartoum Dermatological & Venereology Teaching Hospital. Eighty nine participants were enrolled in this study fulfilling the criteria we included children and teenagers from (6-14) years of age diagnosed with AD according to the criteria of Hanifin and Rajka [4]. The measurement of QoL was performed using questionnaires It consists of ten questions that assess symptoms and feelings, sport, school, mood, family relationships, health care, sleeping Treatment, hygiene, and awareness about disease. Each question has four choices no effect, mild, moderate, and severe. Sample size calculation (Calculator.net) was used for 115 population size the total number of patients visiting 3 month to hospital to be treated from atopic dermatitis between age 6- 14 years, confidence level =95%, margin of error= 5%, population proportion= 50% . Verbal permission from the hospital to work in the research and consent from parent of the patients was obtained. SPSS version 25 for analysis of data was collected (Figures 1-4).

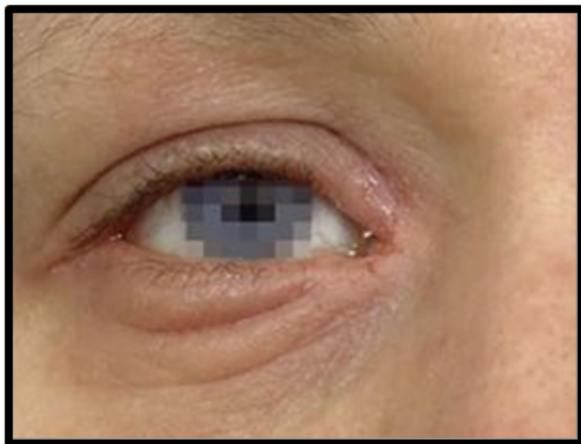


Figure 1: Dennie-Morgan fold in some AD patients.



Figure 2: Infected atopic dermatitis.



Figure 3: AD in lower extremities.

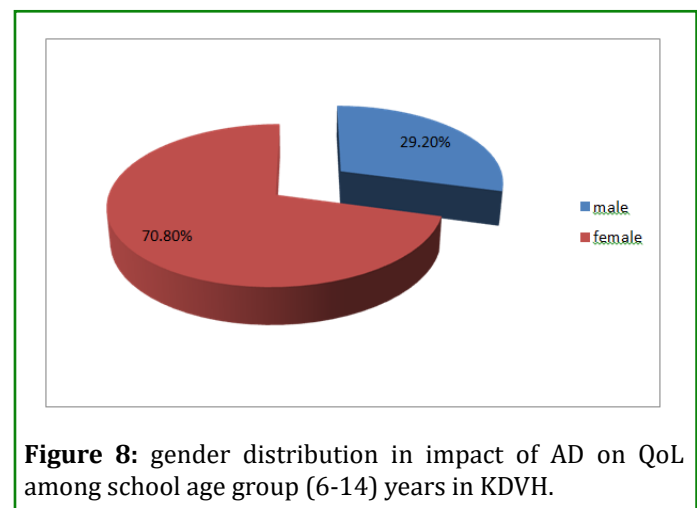
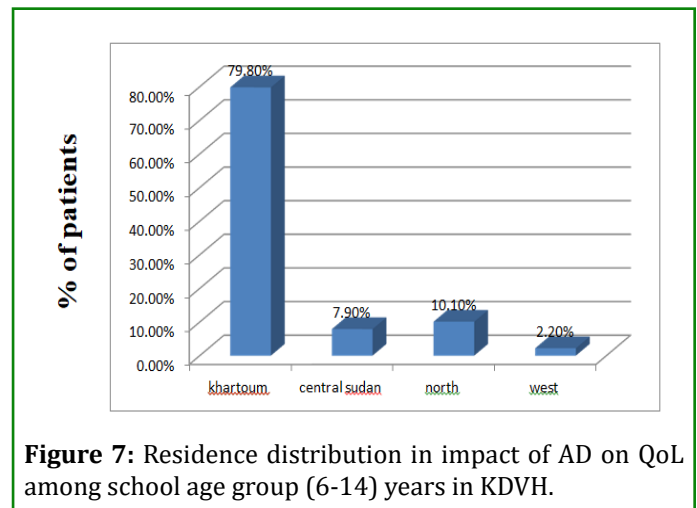
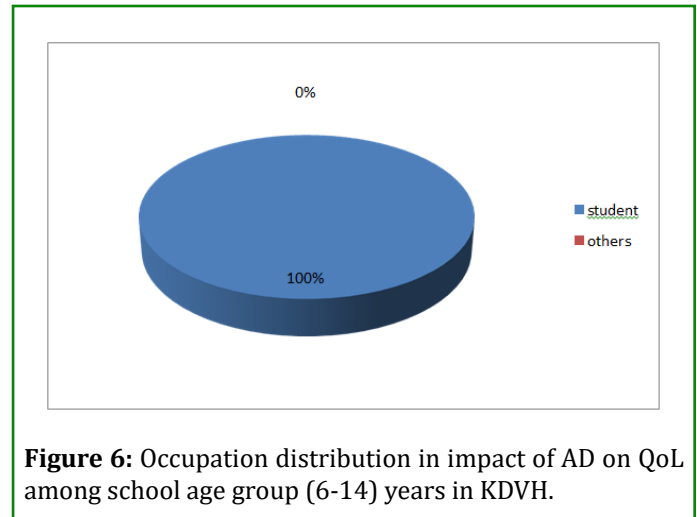
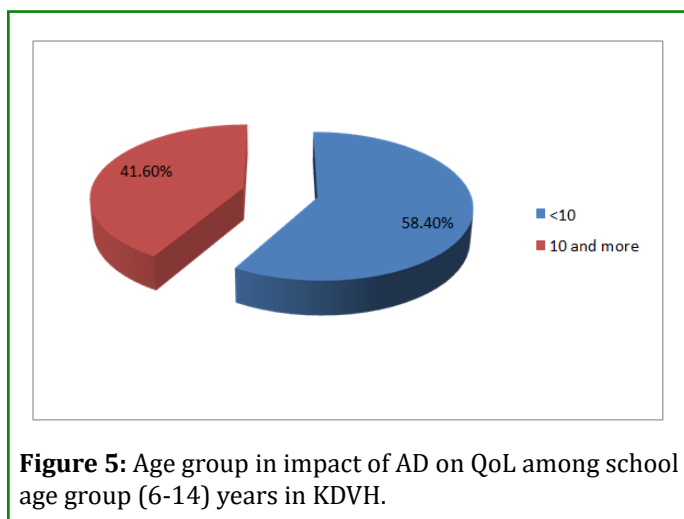


Figure 4: AD in antecubital fossa.

Results

In a descriptive cross-sectional hospital based study, 89 participants were enrolled in this study fulfilling all inclusion criteria, SPSS version 25 used for analysis and obtaining the following results. Age of the study participants of less than 10 years represent 58.4% (Figure 5), hundred percent of the study participants were students (Figure 6), study participants from Khartoum state representing 79.8% (Figure 7), the study participants were 70.8% females (Figure 8), Some of the study participants were 33.7% Jalia (Figure 9), 53.9% of the study participants have severe impact of itching in daily activities (Figure 10), 69.7% of study participants had severe effect of treatment of atopic dermatitis patients on life quality (Figure 11), 55.1% of the study participants had severe effect of atopic dermatitis pt in sleeping disturbance, as shown in (Figure 12), 51.7% of the study participants had severe effect of atopic dermatitis patient in schooling performance, as shown in (Figure 13), 50.6% of the study participants had mild effect of atopic dermatitis on patient behaviour and mood as shown in (Figure 14), 52.8% of the study participants had moderate impact of health care of atopic dermatitis on patient life, as shown in (Figure 15), 41.6% of the study participants had moderate effect of social IN patient of atopic dermatitis (Figure 16), 58.4% of the study participants had mentioned that sport and playing activity had been severely affected (Figure 17), 61.8% of the study participants had severe effect on patient clothing and hygiene in quality of life (Figure 18), 42.7% of the study participants had knowledge about disease (Figure 19).

P value of $< \text{or} = 0.05$ was considered of statistical significance (Tables 1-20).



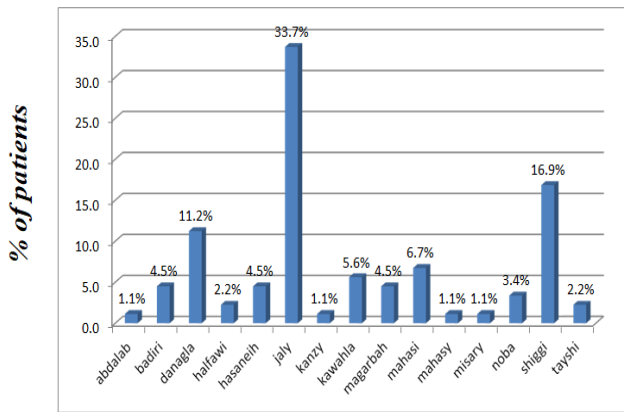


Figure 9: Tribe distribution in impact of AD on QoL among school age group (6-14) years in KDVH.

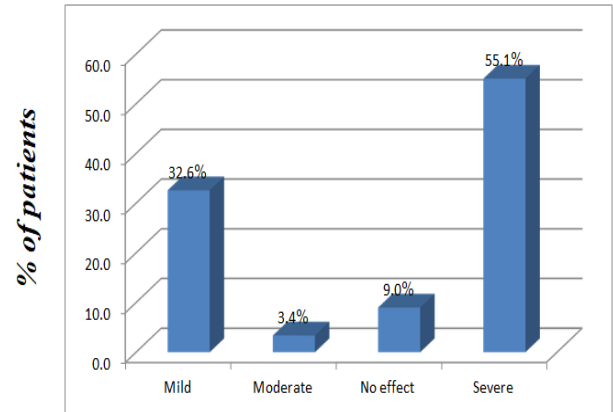


Figure 12: Sleep affection distribution in impact of AD on QoL among school age group (6-14) years in KDVH.

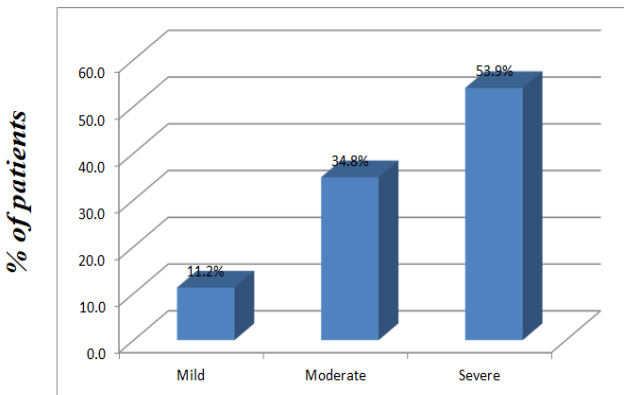


Figure 10: Daily activity affection distribution in impact of AD on QoL among school age group (6-14) years in KDVH.

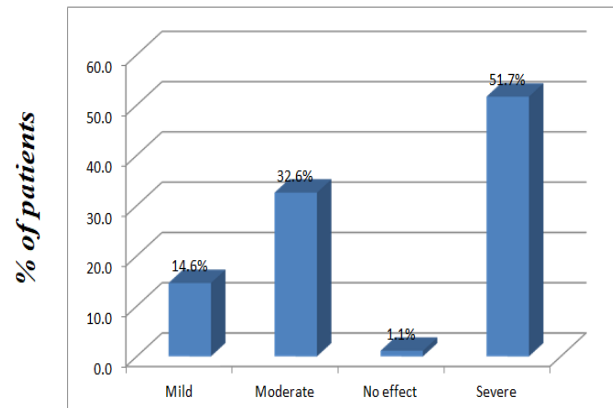


Figure 13: Schooling performance affection in impact of AD on QoL among school age group (6-14) years in KDVH.

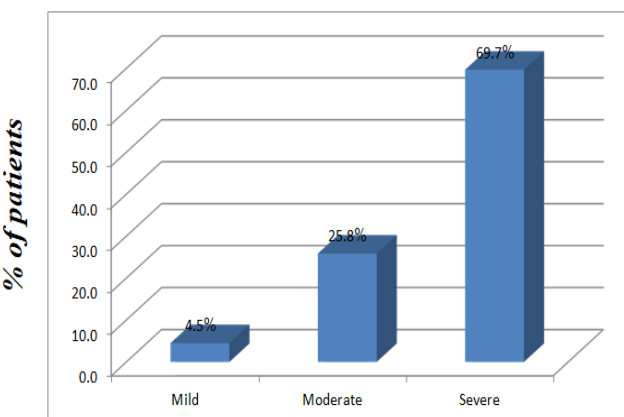


Figure 11: Treatment affection in impact of AD on QoL among school age group (6-14) years in KDVH.

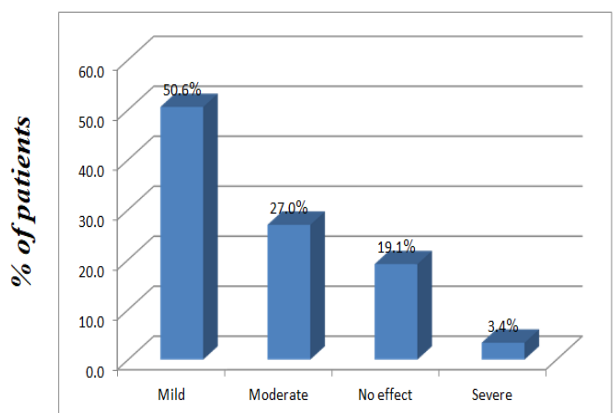


Figure 14: Mood and behavior affection in impact of AD on QoL among school age group (6-14) years in KDVH.

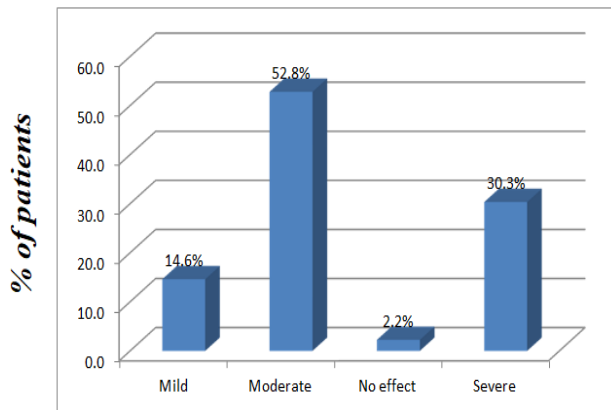


Figure 15: Health care affection distribution in impact of AD on QoL among school age group (6-14) years in KDVH.

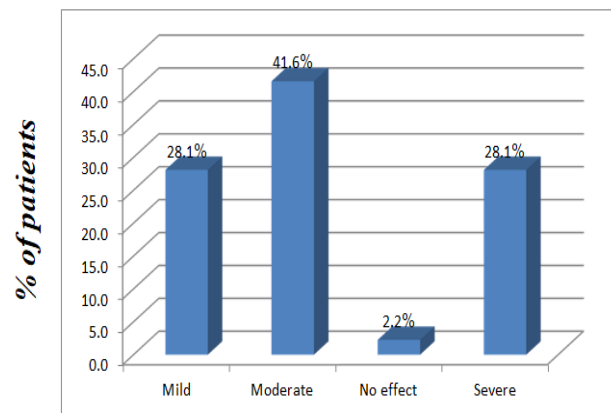


Figure 16: Social affection distribution in impact of AD on QoL among school age group (6-14) years in KDVH.

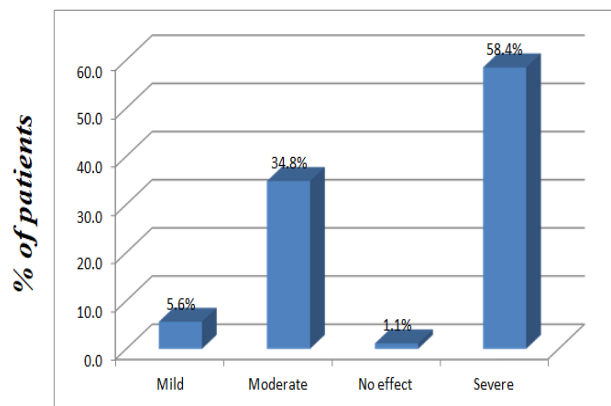


Figure 17: Sport affection in impact of AD on QoL among school age group (6-14) years in KDVH.

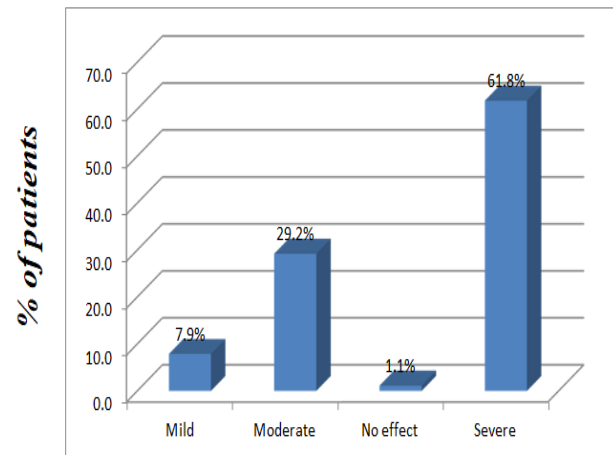


Figure 18: Clothing and hygiene affection in impact of AD on QoL among school age group (6-14) years in KDVH.

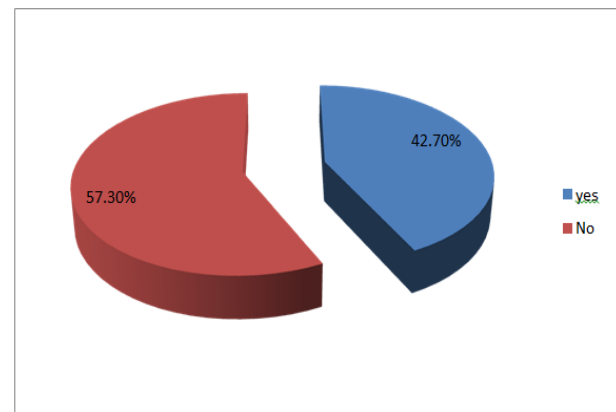


Figure 19: Knowledge about the disease in impact of AD on QoL among school age group (6-14) years in KDVH.

Age	Daily affection			Total
	Mild	Moderate	Severe	
<10 years	8	14	30	52
Less than 10 years	2	17	18	37
Total	10	31	48	89

P value = 0.00

Table 1: Age and daily activity affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Treatment and Quality of Life Affection			Total
	Mild	Moderate	Severe	
<10 years	3	15	34	52
Less than 10 years	1	8	28	37
Total	4	23	62	89

P value = 0.01 (significant P value).

Table 2: Age and treatment affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Sleep Affection				Total
	Mild	Moderate	Severe	No Effect	
<10 years	17	2	29	4	52
Less than 10 years	12	1	20	4	37
Total	29	3	49	8	89

P value = 0.07 (significant P value).

Table 3: Age and sleep affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Schooling Affection				Total
	Mild	Moderate	Severe	No Effect	
<10 years	9	17	25	1	52
Less than 10 years	4	12	21	0	37
Total	13	29	46	1	89

P value = 0.43 (significant P value).

Table 4: Age and schooling affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Mood and Behavior Affection				Total
	Mild	Moderate	No effect	Severe	
<10 years	16	23	9	3	52
Less than 10 years	29	1	8	0	37
Total	45	24	17	3	89

P value = 0.00

Table 5: Age and mood and behaviour affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Health Care Affection				Total
	Mild	Moderate	No Effect	Severe	
<10 years	9	23	2	18	52
Less than 10 years	4	24	0	9	37
Total	13	47	2	27	89

P value = 0.00

Table 6: Age and health care affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Social Affection				Total
	Mild	Moderate	No Effect	Severe	
<10 years	11	19	1	21	52
Less than 10 years	14	18	1	4	37
Total	25	37	2	25	89

P value = 0.00

Table 7: Age and social affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Sport Affection				Total
	Mild	Moderate	No Effect	Severe	
<10 years	4	17	0	31	52
Less than 10 years	1	14	1	21	37
Total	5	31	1	52	89

P value = 0.14 (significant P value).

Table 8: Age and sport affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Clothing and Hygiene Affection				Total
	Mild	Moderate	No Effect	Severe	
<10 years	3	17	1	31	52
Less than 10 years	4	9	0	24	37
Total	7	26	1	55	89

P value = 0.25 (significant P value).

Table 9: Age and clothing and hygiene affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Age	Knowledge		Total
	No	Yes	
<10 years	18	34	52
Less than 10 years	33	4	37
Total	51	38	89

P value = 0.00

Table 10: Age and knowledge in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Daily Activity Affection			Total
	Mild	Moderate	Severe	
Female	7	16	40	63
Male	3	15	8	26
Total	10	31	48	89

P value = 0.01

Table 11: Gender and daily activity affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Treatment Affection on Quality of Life			Total
	Mild	Moderate	Severe	
Female	3	17	43	63
Male	1	6	19	26
Total	4	23	62	89

P value = 0.90 (significant P value).

Table 12: Gender and treatment affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Sleep Affection				Total
	Mild	Moderate	No Effect	Severe	
Female	18	3	5	37	63
Male	11	0	3	12	26
Total	29	3	8	49	89

P value = 0.37 (significant P value).

Table 13: Gender and sleep affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Schooling Affection				Total
	Mild	Moderate	No Effect	Severe	
female	9	20	1	33	63
male	4	9	0	13	26
Total	13	29	1	46	89

P value = 0.92 (significant P value).

Table 14: Gender and schooling affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Mood and Behavior Affection				Total
	Mild	Moderate	No Effect	Severe	
Female	26	23	11	3	63
Male	19	1	6	0	26
Total	45	24	17	3	89

P value = 0.00

Table 15: Gender and mood and behavior affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Health Care Affection				Total
	Mild	Moderate	No Effect	Severe	
Female	10	29	2	22	63
Male	3	18	0	5	26
Total	13	47	2	27	89

P value = 0.21 (significant P value).

Table 16: Gender and health care affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Social Affection				Total
	Mild	Moderate	No Effect	Severe	
Female	16	24	2	21	63
Male	9	13	0	4	26
Total	25	37	2	25	89

P value = 0.42 (significant P value).

Table 17: Gender and social affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Sport Affection				Total
	Mild	Moderate	No Effect	Severe	
female	3	20	0	40	63
male	2	11	1	12	26
Total	5	31	1	52	89

P value = 0.23 (significant P value).

Table 18: Gender and sport affection in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Clothing and Hygiene Affection				Total
	Mild	Moderate	No Effect	Severe	
Female	5	17	1	40	63
Male	2	9	0	15	26
Total	7	26	1	55	89

P value = 0.83 (significant P value).

Table 19: Gender and clothing and hygiene in impact of AD on the QoL among school age group 6-14 years in kDVH.

Gender	Knowledge		Total
	No	Yes	
Female	36	27	63
Male	15	11	26
Total	51	38	89

P value = 0.57 (significant P value).

Table 20: Gender and knowledge in impact of AD on the QoL among school age group 6-14 years in kDVH.

Discussion

This study founds in the main dermatological specialized hospital in Sudan in eighty-nine patients between 6- 14 years. The prevalence in urban area and high income mostly affected than rural area low income that Khartoum state represent main state affected in Sudan. In a related study male mainly affected [19]. In this study female most sex affected. The study agree with other study in affection on sleep, itching, mood [20], but this study founded that some tribe more affected than other, which need further study, the study found there is lack of awareness about the disease. AD affect life style & make life miserable that need long term follow up for treatment which is costively for parents.

Conclusion

A strong association was found between AD and QoL, Atopic dermatitis affects many aspects of life style, and deep impact was on school age children between 6-14 yrs. Most common sex affected was females, and there was lack of awareness of the disease, Jalia tribe more tribe affected, most of patient from Khartoum state.

Recommendation

- Increase the awareness of the parent and family about the disease, what aggravate and what relive it and diseases associated with it.
- Also inform parent and patient to use emollient every day and maintain good hygiene by bathing, washing clothes, avoid triggering factor as much as possible.
- Governmental program for long-term follow-up and treatment of AD patients especially school-age group.
- Psychological session in hospital for AD patients to prevent mood changes aggression or depression or stigma from disease.
- More researches to cover other main state in Sudan
- Genetic research for why Jalia tribe in Sudan more affected than other tribes.

Dedication

I dedicate this research to family which supporting me from the beginning of my life with everything. I dedicate this work to my teachers and all my friends.

Acknowledgement

Thanks to God for everything in my life. Special thanks Dr. Maha Mustafa specialist of dermatology and venereology for her continuous support, supervision and wonderful advice. Many thanks to prof. Yousif Alkordofani for his continuous support. Thanks to all member of KDVH.

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