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Atopic dermatitis: impact on quality of life and patients' attitudes toward its management

This work studies atopic dermatitis in the following terms: impact on patients' life; patients' satisfaction and attitudes toward topical pharmacological treatment and medical recommendations (regarding hygienic and preventive strategies) and patients' and dermatologists' impressions of severity at the moment of consultation. To this end, an epidemiological, multicentre, cross-sectional study was carried out. In total, 191 dermatologists collected data from 322 patients (163 children, 159 adults). Poor agreement between specialists' and patients' criteria was found and patients with higher severity of affection showed higher impacts on sleep/rest, emotional and school/ professional fulfillment ($p < 0.001$). Moreover, reported compliance with pharmacological treatment and medical recommendations was high but patients' satisfaction with these recommendations was lower than with respect to pharmacological treatment. These results highlight that although reported compliance was high, there were still non-compliance attitudes and concerns about treatments that should be answered. Finally, a significant impact on patients' life was confirmed.

Key words: atopic dermatitis, attitudes, management, quality of life

Atopic Dermatitis (AD) is a chronic inflammatory skin disease characterized by itch and eczema which appears in episodic exacerbations (flares) and remissions. In some cases, skin involvement may be continuous [1]. In recent years, epidemiological studies have shown higher rates of AD prevalence, ranging from 7-20% in children and 2-7% in adults [2, 3]. The aetiology of AD still remains unclear; however, a genetic predisposition is involved [1]. The risk of suffering AD is 30% if one parent is diagnosed with AD and rises up to 70% if both parents are affected. Environmental factors may contribute to trigger flares and influence its severity [4]. Due to this complex aetiology, pharmacological treatments are recommended not only for acute episodes but also for preventing the flares and reducing their intensity [5-7].

AD can result in a significant and negative impact on a patient's health related quality of life, (HRQoL) [3, 7]. Its recurrent exacerbations and their severity may disturb the quality of sleep of patients, and performance at school, at work or during social activities [8, 9]. In consequence, daily activities and emotional balance are frequently disturbed, not only in these patients [8, 10, 11] but also in their families [12]. Several scoring systems have been created and validated [13] during recent years in order to provide both an objective clinical evaluation of AD [14, 15] and the subjective impact associated to AD [16-19]. Only a few studies have focused on analyzing both the impact of AD on a wide range of patients' HRQoL domains and patients' attitudes toward pharmacological treatment and medical recommendations related to AD management and AD long term control [20]. Moreover, to our knowledge, no similar studies have been carried out in Spain.

The present work aimed to investigate the impressions of AD severity of both professionals and patients and to point out if there were discrepancies between their criteria regarding the intensity of AD episodes. Furthermore, the study also focused on the impact of AD on patients' HRQoL and their attitudes toward the strategies applied to control AD (topical pharmacological treatment for flares and medical recommendations about hygienic and preventive strategies). In consequence, it should be possible to better understand AD patients' suffering, and also to gain knowledge with the purpose of improving patients' adherence and compliance with pharmacological treatment and medical recommendations for the short- and long-term management of AD. Significant rates of non-compliance with treatment have been shown in previous studies [21, 22]. It is common that patients only use treatment in restricted areas of their body or apply the treatment less frequently than advised, so the effectiveness of pharmacological approaches is compromised.

Material and methods

An epidemiological, multicentre cross-sectional study was carried out from October 2008 to March 2009. Dermatologists from public and private health services in Spain ($n=191$) participated in the present study. Each specialist recruited, consecutively, the first 2 patients (1 adult, 1 child) who fulfilled the selection criteria: patients aged 2 to 16 (children) or patients aged over 16 years old (adults) with a diagnosis of AD according to Hanifin and Rajka

criteria [23] with moderate or severe involvement. All patients were enrolled after they (or their caregivers in patients under 16 years old) provided their written informed consent to participate in the study, which was conducted in accordance with the ethical principles of the Declaration of Helsinki and Good Clinical Practice guidelines. The protocol was approved by the Ethical Committee of the University Hospital Niño Jesus (Madrid).

Variables of the study

Dermatologists were asked about the diagnosis of AD and their clinical impression/diagnosis of AD severity in each case. Socio-demographic variables were also recorded. Patients (or caregivers in case of children between 2-12 years old) answered a questionnaire addressing AD impact, patients' HRQoL and their attitudes with respect to AD flare management: compliance rate with topical pharmacological treatment and medical recommendations, the level of importance of those measures and finally, patients' satisfaction. Regarding pharmacological therapy, the study focused on the most frequently prescribed topical medications to control AD flares (corticosteroids or calcineurin inhibitors). However, since the aims of this research did not include establishing comparisons between these topical alternatives, both treatments were referred as topical pharmacological treatment. Furthermore, medical recommendations comprised both hygienic and preventive measures to control AD (*i.e.* use of special soaps or oils, moisturizing creams or emollients and avoiding extreme temperatures).

This questionnaire was specifically developed for this study. To this end, experts' and patients' panels were conducted. At first, 3 dermatologists were interviewed about the most important issues associated to the medical management of flares. As a result, the following ones were identified (tables 2, 3):

- severity of AD symptoms (3 items);
- AD affectation: sleep disturbances (2 items), school /professional fulfillment (4 items), and emotional disturbances (10 items);
- attitude toward AD flares and topical pharmacological treatment (4 items);
- overall satisfaction with topical pharmacological treatment (1 item, visual analogical scale-VAS-);
- perceived benefits of topical pharmacological treatment for flares (6 items).

Next, specialists were asked to report those areas related to AD preventive strategies and the patient's compliance with these measures. In this case, the following were identified:

- attitude toward medical recommendations (hygienic and preventive strategies, 4 items);
- satisfaction with medical recommendations for AD management and control (1 item, VAS);
- satisfaction with the information given by their specialist (1 item, VAS);
- feelings before the next flare (5 items).

Finally, one clinical psychologist interviewed 7 adult patients and 5 caregivers of paediatric patients to ensure the comprehension and point out the importance of the selected areas and items regarding treatment management for AD control. Once the importance of the items was

confirmed and the patients' (or caregivers') comprehension of the interview was ensured, the present study was carried out.

Statistical analysis

The sample size was estimated according to the relative frequency of severe and moderate AD patients. Taking into account previous studies [20], a higher frequency of moderate AD patients was considered in a 2:1 proportion with respect to severe cases. Therefore, a minimum of 320 patients were needed (160 adults and 160 paediatrics) to enable investigators to analyze mean differences (one tailed) of medium size ($d=0.33$) between moderate and severe patients in VAS scales with a confidence interval of 95% and 80% of power ($1-\beta$). Firstly, clinical and socio-demographic variables were described along with the variables reflecting AD impact and patients' attitudes toward AD management (frequencies and percentages in nominal values and mean and standard deviation [SD] in case of continuous values). Secondly, patients' and clinicians' impressions of severity were compared by using Cohen's kappa coefficient.

Furthermore, considering AD impact, it was analyzed whether a global score could be extracted for both paediatric and adult patients. To this end, item-total correlations (ITC) were checked following the criterion of removing items with a score lower than 0.3 in the discrimination rates. Besides, to assess the one-dimensional structure of AD affectation in both paediatric and adult patients, an exploratory factorial analysis (extraction criterion of eigenvalue > 1 ; varimax rotation) was also conducted. Finally, the internal consistency of those measures was calculated by using the Cronbach's α . Once the one-dimensional structure was confirmed, a global score for each group was obtained by summarizing the levels of the included items ("*Total AD disturbance*") and was linearly transformed into 2 different scales ranging from a minimum of 0 (no disturbance at all) and a maximum of 10 (heavy impact on the patient's HRQoL). Mann-Whitney's U test was applied to study the differences between moderate and severe patients in AD affectation, attitudes toward treatment and medical recommendations and finally, overall satisfaction with respect to treatment and the information they received from the specialists. This statistic was also applied to test if there were differences in AD affectation depending on patients' sex. Finally, Spearman's rank correlation coefficients (ρ) were calculated to study the relationship between the severity of AD and disturbances in the patient's life.

Results

In total, 191 dermatologists participated in the present study, 47.64% of them were male and mean age was 43.68 years old. They collected data from 386 patients (adult and paediatric). Once the selection criteria were reviewed, 64 cases had to be removed because the selection criteria were not completely fulfilled (30 children and 34 adults). As a consequence, the final sample included for the analysis comprised 322 patients (163 children and 159 adults). The description of their clinical and socio-demographic

Table 1. Sample description.

		Paediatric patients (n=163)	Adult patients (n=159)
Sex, n (%)	Male	95 (58.64)	71 (44.65)
	Female	67 (41.36)	88 (55.35)
Environmental, n (%)	Rural	31 (19.87)	17 (11.04)
	Urban	125 (80.13)	137 (88.96)
^a AD severity (clinical impression), n (%)	Moderate	126 (78.75)	92 (60.13)
	Severe	34 (21.25)	61 (39.87)
Age (years), mean (SD)		7.66 (3.4)	33.22 (11.68)
Time since diagnosis (years), mean (SD)		5.01 (3.34)	16.96 (10.77)

^a Atopic dermatitis.

variables is shown in *table 1*. In addition, descriptive analyses of the patients' affectation and reported attitudes toward AD management are detailed in *tables 2 and 3*, respectively. Regarding frequency of flares, these were slightly higher in case of adults (a mean of 7.08 in adults during the last year and 4.76 flares in case of children) whereas the duration of the last flare was similar (17.87 days in adults and 18.34 days in children, *table 2*). Moreover, when comparing clinicians' and patients' impressions of severity, poor rates of agreement were found (Cohen's kappa coefficient=0.44, $p<0.001$, in the case of paediatric patients and kappa coefficient=0.52, $p<0.001$, in the case of adult patients). Patients' impressions of severity were significantly higher than physicians' clinical impressions. A total score for AD disturbances (*Total AD disturbance*) was calculated for both adults and children. To this end, ITC analyses (*table 4*) and exploratory factorial analyses (*table 5*) led, firstly, to eliminate in both samples the items referring to indifference and resignation (ITC < 0.3) and, secondly, to confirm the appropriateness of calculating one total score (*table 5*). Moreover, the internal consistencies of those scales were high in paediatric and adult samples (Cronbach's $\alpha=0.75$ and 0.87, respectively). Once properties were tested, the Total AD disturbance score was estimated. Despite the similar affectation of flares in both samples, differences in terms of the impact on patients' lives were found. Adult patients reported higher levels of AD disturbance (*table 2*). However, in both samples, the higher the AD severity, the higher the level of AD disturbance. In paediatric patients, differences according to AD severity were significant, especially, in sleep/rest and school fulfillment. In adult patients, the affected areas most related to AD severity were also sleep/rest, work fulfillment and even more, disturbances on their daily lives and on their emotional well-being (*table 6*). In fact, 51% of these patients lost work days during last year due to AD (mean of work days lost=8.29), 70% declared having work limitations and 84% had sleep/rest disruptions (*table 2*). Nevertheless, no differences in AD affectation were found with respect to patients' sex, neither in children (males=2.873 $\pm$ 0.198, females=2.976 $\pm$ 0.2687, $p=0.935$) nor in adults (males=3.972 $\pm$ 0.317, females=4.444 $\pm$ 0.285, $p=0.234$).

The present study also tried to highlight patients' attitudes toward topical pharmacological treatment and medical recommendations regarding hygienic and preventive strategies against AD flares. The importance of compliance with pharmacological treatment referred by patients was high in both

groups (*table 3*) and in the case of adults it was associated with the intensity of AD disturbances (*table 7*). A majority of caregivers and patients declared not delaying the application of pharmacological treatment for flares and always applying the topical treatment on affected areas (*table 3*). However, a significant proportion of patients delayed treatment application or had concerns about its use (*table 3*). The benefits of the pharmacological treatment reported by patients were, mainly, the reduction of skin irritation and itch, the clearance of skin lesions and the reduction of flare duration. In contrast, lower percentages of patients or caregivers reported the benefits of a reduction in school/work fulfillment affectation or the prevention of new flares (*table 3*).

With respect to the importance of the medical recommendations for AD control, high values were also found in both groups (*table 3*) and in the case of children, it was associated with AD disturbances (*table 7*). The strategies more frequently followed were the use of special soaps, oils, moisturizing creams and special creams and emollients for AD in both groups (*table 3*). Patients' satisfaction with pharmacological treatment for flares and with the information given by dermatologists was high in paediatric and adult patients. In spite of this, satisfaction with medical recommendations about preventive measures was lower than satisfaction with pharmacological treatment or with the information given by the specialist. Patients' satisfaction with treatment and preventive/skin care strategies was negatively associated with AD impact (*table 7*): the higher the impact on their life, the lower the satisfaction with treatment for AD control.

Finally, when patients were asked to report how they feel when they think about a new flare, it is remarkable that 68.1%, 59.9% and 58.6% of adult patients feel helpless, distressed/anxious and irritable respectively. In children, the feelings reported were irritability and distress/anxiety (59.8% and 37.3%, respectively).

Discussion

The present study investigated patients' and dermatologists' impressions of AD severity to test whether there was any discrepancy in their criteria. Moreover, how AD affects patients' lives was analyzed, how they apply topical pharmacological treatment and medical recommendations,

Table 2. Atopic dermatitis impact on patients' health-related quality of life.

^a AD severity	PAEDIATRIC PATIENTS		ADULT PATIENTS	
Patient's impression of AD severity: n (%)	7 (4.38) mild; 86 (53.75) moderate; 67 (41.88) severe		5 (3.18) mild; 65 (41.4) moderate; 87 (55.41) severe	
Frequency of flares during last year: mean (SD)	4.76 (2.6)		7.08 (7.99)	
Duration of flares: mean (SD)	18.34 (24.91)		17.87 (14.65)	
AD affectation				
Sleep disturbance: n (%)	131 (82.4)		134 (84.3)	
Sleep/rest: mean (SD)	5.43 (2.5)		5.93 (2.72)	
Limited school/work fulfillment: n (%)	77 (48.13)		116 (72.96)	
Days of school /work lost last year: mean (SD)	2.53 (4.1)		8.29 (23.69)	
Days of extracurricular activities lost: mean (SD)	2.32 (5.65)		—————	
School / work disturbance: mean (SD)	3.05 (2.33)		5.2 (2.81)	
Emotional disturbance	Quite a lot	Much	Quite a lot	Much
Feel sad, depressed: n (%)	17 (10.49)	3 (1.85)	46 (29.3)	19 (12.1)
Feel tired: n (%)	18 (11.11)	3 (1.85)	50 (32.26)	5 (3.23)
Feel Irritable: n (%)	67 (41.1)	30 (18.4)	48 (30.57)	44 (28.03)
Feel worried about their appearance: n (%)	24 (14.91)	11 (6.83)	46 (29.87)	49 (31.82)
Feel Indifferent: n (%)	13 (8.33)	3 (1.92)	13 (8.39)	1 (0.65)
Feel helpless: n (%)	28 (17.39)	14 (8.7)	49 (31.21)	58 (36.94)
Feel resigned: n (%)	35 (21.88)	10 (6.25)	49 (31.41)	17 (10.9)
Feel discriminated against or bothered: n (%)	10 (6.25)	2 (1.25)	25 (16.13)	15 (9.68)
Limitations in social relationships: n (%)	8 (4.94)	2 (1.23)	27 (17.31)	18 (11.54)
Limitations in relationship with partner: n (%)	—————	—————	41 (26.28)	26 (16.67)
Limitations in hobbies or sport activities: n (%)	31 (19.25)	3 (1.86)	25 (15.92)	13 (8.28)
Total AD disturbance (AD Impact scale) (0-minimum....10-maximum impact on ^b HRQoL)	2.86 (1.70)		4.49 (2.27)	
Feelings before next flare	Quite a lot	Much	Quite a lot	Much
Distressed, anxious: n (%)	43 (27.22)	16 (10.13)	63 (40.13)	31 (19.75)
Irritable: n (%)	67 (41.4)	30 (18.4)	48 (30.57)	44 (28.03)
Helpless: n (%)	41 (25.2)	11 (6.7)	49 (31.21)	58 (36.94)
Sad, depressed: n (%)	17 (10.49)	3 (1.85)	46 (29.3)	19 (12.1)
Downhearted, demotivated: n (%)	12 (7.59)	10 (6.33)	40 (25.32)	26 (16.46)

^a Atopic dermatitis; ^b Health-related quality of life.

their perception about the treatment benefits and possible causes for non-compliance. Finally, patients were interviewed about their satisfaction with these measures to control AD.

A low agreement between patients'/caregivers' and clinicians' impression of AD severity was found. In general, patients and caregivers tended to report higher AD severity

than their clinicians. Taking into account the impairment suffered by patients, the average number of flare episodes during the last 12 months was higher in adults than in children, as was found in a previous multicentre study [20]. The mean duration of the last acute episode as referred by patients was 18 days (18.34 and 17.87 in paediatric and adult patients, respectively) which means almost 3 days more

Table 3. Patients' attitudes toward flare control.

Attitude toward topical treatment for ^a AD flares	PAEDIATRIC PATIENTS		ADULT PATIENTS	
When do you start the treatment: n (%)	119 (73.46) 1 ST day; 32 (19.75) in 3 days; 9 (5.56) within 1 st week; 2 (1.24) during 2 ND week		123 (77.36) 1 ST day; 30 (18.87) in 3 days; 5 (3.14) within 1 st week; 1 (0.63) during 2 ND week	
Why do you delay treatment application: n (%)	115 (71.43) no delay; 34 (21.12) preferring moisturizes and emollients; 10 (6.21) side effects; 2 (1.24) other causes		115 (76.16) no delay; 15 (10.93) preferring moisturizes and emollients; 13 (8.61) side effects; 8 (4.30) other causes	
Do you apply the treatment in the affected areas: n (%)	157 (96.32)		147 (92.45)	
Importance of completing the treatment: mean (SD)	8.84 (1.67)		8.38 (1.88)	
Overall satisfaction with pharmacological treatment: mean (SD)	6.93 (2.24)		6.24 (2.77)	
Benefits associated to pharmacological treatment	Quite a lot	Much	Quite a lot	Much
Itch, irritation: n (%)	90 (55.21)	29 (17.79)	80 (50.31)	19 (11.95)
Clearance of skin lesions: n (%)	97 (60.25)	13 (8.07)	72 (45.57)	12 (7.59)
Reduction of flare duration: n (%)	97 (59.88)	14 (8.64)	75 (47.17)	13 (8.18)
Reduction of sleep disturbance: n (%)	69 (42.86)	24 (14.91)	56 (35.22)	14 (8.81)
Reduction of impact on school fulfillment: n (%)	50 (32.05)	22 (14.1)	52 (33.12)	17 (10.83)
Prevention of new flares: n (%)	42 (26.25)	6 (3.75)	28 (17.61)	6 (3.77)
Attitude toward medical recommendations (hygienic and preventive strategies)				
Use of special soaps, oils: n (%)	147 (90.18)		134 (84.81)	
Use of moisturizing creams: n (%)	160 (98.16)		151 (95.57)	
Use of special moisturizing creams/emollients: n (%)	160 (98.16)		133 (83.65)	
Avoid extreme temperatures: n (%)	102 (62.58)		72 (45.57)	
Importance of preventive strategies: mean (SD)	8.21 (1.81)		7.3 (2.31)	
Satisfaction with preventive strategies: mean (SD)	6.49 (2.31)		5.72 (2.82)	
Satisfaction with information provided by physician: mean (SD)	8.01 (1.78)		7.54 (2.26)	

^a Atopic dermatitis.

than the flare duration published before [20]. In contrast, sleep disturbances and days of school/work lost during the last year were in concordance with results from the ISO-LATE study [20]. In terms of AD impact, findings from this study evidenced the emotional impact and disturbance in daily activities caused by AD [8, 10, 11]. Those disturbances were different depending on age. For instance, in paediatric patients, irritation was more frequent, whereas in the case of adult patients, tiredness, depression, sadness or worries about their appearance were more common. Limitations in social and daily activities were also more frequent in adults [8]. In this population, the number of work days reported lost is especially important, as has been shown before. Besides, in both groups, patients' HRQoL was associated with the severity of flares [7, 20]. A limitation of

the study is that AD severity was graded according to the dermatologists' criterion during clinical practice, as it is commonly evaluated in Spain. It should be recognized that the application of objective measures to assess AD severity would have provided a more precise classification of this variable [14, 15] enabling comparisons with data from other research. In fact, it was planned to include the *SCORing Atopic Dermatitis Index* [SCORAD] [14] along with dermatologists' and patients' impressions of severity in order to compare the latter with a "gold standard" and also to study the impact on patients' HRQoL according to the SCORAD outputs. To this end, all dermatologists involved in the study had been previously interviewed about the objective instruments they used in their clinical practice to assess the severity of the disease. Unfortunately, it was found that only

Table 4. Atopic dermatitis impact scale: Item-total correlation.

	Domains of ^aAD disturbance	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Paediatric patients	Feel sad, depressed	.481	.697
	Feel tired	.513	.693
	Feel irritable	.431	.701
	Feel worried about their appearance	.409	.704
	Feel indifferent	.115	.742
	Feel helpless	.488	.692
	Feel resigned	.285	.741
	Feel discriminated against or bothered	.451	.703
	Limitations in social relationships	.487	.699
	Limitations in hobbies or sport activities	.441	.701
	Domains of AD disturbance	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Adult patients	Feel sad, depressed	.590	.805
	Feel tired	.416	.820
	Feel irritable	.532	.810
	Feel worried about their appearance	.578	.805
	Feel indifferent	.103	.839
	Feel helpless	.616	.802
	Feel resigned	-.012	.855
	Feel discriminated against or bothered	.659	.797
	Limitations in social relationships	.711	.791
	Limitations in relationship with partner	.645	.799
	Limitations in hobbies or sport activities	.583	.805

^a Atopic dermatitis.

35.6 % of them used the SCORAD in their clinical practice, so collection of these data from clinical records was not feasible.

The analysis performed on patients' attitudes toward topical pharmacological treatment pointed out a significant proportion of both paediatric and adult patients who delay the application of treatment. Therefore, although patients and caregivers perceived the relevance of the pharmacological treatment during flares, it appears that, unfortunately, there are still some concerns about the use of topical treatments [20, 22]. Thus, although nowadays there are a wide range of effective topical treatments for AD, previous research has shown similar results addressing the lack of patients' compliance, compromising AD control [21, 22]. In consequence, these results may suggest the appropriateness of new efforts [24, 25] focused on improving patients' information about their disease, triggers, non-pharmacological and pharmacological approaches to manage AD (in the

short and the long term) and also to foster compliance and adherence with treatment in order to get a better control of AD. Besides, regarding generic recommendations about hygienic and preventive strategies, a large majority of patients in both groups declared following these measures (with the exception of "avoiding extreme temperatures" in case of adults).

Finally, the anticipatory feelings of anxiety, irritation, helplessness or downheartedness were found both in paediatric and adult patients (but especially in the case of adults). This fact is related to the disturbance in daily activities and to the evidenced impact of AD on different aspects of the patients' life (sleep/rest, professional/scholar life, social activities and emotional disturbance). These findings support the importance of assessing AD impact on patients' HRQoL and the clinical importance of reducing the number of flares suffered by patients as well as increasing the time free of flares for better management and AD control.

Table 5. Atopic dermatitis impact scale: Component matrix (exploratory factor analyses).

		Component 1 (41.42% of variance explained)
Paediatric patients	Feel sad, depressed	.695
	Feel tired	.686
	Feel irritable	.577
	Feel worried about their appearance	.608
	Feel helpless	.409
	Feel discriminated against or bothered	.676
	Limitations in social relationships	.746
	Limitations in hobbies or sport activities	.632
		Component 1 (50.77% of variance explained)
Adult patients	Feel sad, depressed	.703
	Feel tired	.523
	Feel irritable	.663
	Feel worried about their appearance	.685
	Feel helpless	.695
	Feel discriminated against or bothered	.786
	Limitations in social relationships	.810
	Limitations in relationship with partner	.754
	Limitations in hobbies or sport activities	.670

Table 6. Differences in patients' attitudes and atopic dermatitis disturbance according to severity.

	^a Clinical impression of severity	n	mean	SD	Min	Max
Paediatric patients	Sleep/rest (p<0.001)					
	Moderate	126	4.96	2.32	0	10
	Severe	34	7.22	2.42	0	10
	Scholar fulfillment (p=0.068)					
	Moderate	122	2.89	2.24	0	8
	Severe	34	3.79	2.56	0	8
	Total ^b AD disturbance (p>0.05)					
	Moderate	122	2.74	1.52	0	6.25
	Severe	33	3.37	2.23	0.42	9.58
	Satisfaction with pharmacological treatment (p>0.05)					
	Moderate	123	6.86	2.52	0	10
	Severe	32	6.70	2.60	0	10

Table 6. (Continued)

	^a Clinical impression of severity	n	mean	SD	Min	Max
Adult patients	Sleep/rest (p<0.001)					
	Moderate	91	5.31	2.73	0	10
	Severe	61	6.93	2.41	0	10
	Work fulfillment (p<0.001)					
	Moderate	91	4.47	2.57	0	10
	Severe	60	6.42	2.67	0	10
	Total AD disturbance (p<0.05)					
	Moderate	88	3.82	1.94	0.37	7.78
	Severe	58	5.51	2.31	0.74	9.63
	Satisfaction with pharmacological treatment (p>0.05)					
	Moderate	92	6.3	2.67	0	10
	Severe	61	6.07	3.01	0	10

^a U Mann Whitney- non parametric test-; ^b Atopic dermatitis.

Table 7. Associations between patient's satisfaction, atopic dermatitis impact on patient's life, and patient's beliefs with respect to the measures for preventing and controlling atopic dermatitis flares.

PAEDIATRIC PATIENTS	AD impact on scholar fulfillment	AD impact on sleep/rest	Satisfaction with treatment	Satisfaction with MR	Satisfaction with information for AD management	Importance of compliance with treatment	Importance of compliance with MR
^a AD impact on scholar fulfillment	1	.533 (**)	-.010	.046	.077	-.080	-.165 (*)
AD impact on sleep/rest	.533 (**)	1	-.067	-.027	-.056	.045	-.026
Total AD disturbance	.385 (**)	.340 (**)	-.232 (**)	-.112	-.065	-.094	-.118
ADULT PATIENTS	AD impact on work fulfillment	AD impact on sleep/rest	Satisfaction with treatment	Satisfaction with MR	Satisfaction with information for AD management	Importance of compliance with treatment	Importance of compliance with MR
AD impact on work fulfillment	1	.509 (**)	-.153	-.222 (**)	-.031	.084	.043
AD impact on sleep/rest	.509 (**)	1	-.056	-.150	.053	.211 (**)	.002
Total AD disturbance	.610 (**)	.485 (**)	-.196 (*)	-.267 (**)	-.139	.112	.040

Spearman correlation coefficient –rho-: * $p < 0.05$; ** $p < 0.001$.

^a Atopic dermatitis; ^b Medical recommendations.

Considering the positive motivation of patients to medical advice, integral interventions could be feasible and pertinent to improve treatment outcomes. ■

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