

## AUTORREGULAÇÃO EMOCIONAL DE PAIS DE CRIANÇAS E ADOLESCENTES COM DOENÇA CRÔNICA

### EMOTIONAL SELF-REGULATION OF PARENTS OF CHILDREN AND ADOLESCENTS WITH CHRONIC DISEASE

Juliana Burin<sup>1</sup>, Magda Weber<sup>2</sup>, Caroline Reppold<sup>3</sup>, & Prisla Calvetti<sup>†3</sup>

<sup>1</sup>Universidade Federal de Ciências da Saúde de Porto Alegre/UFCSPA, Porto Alegre, Brasil.

<sup>2</sup>Departamento de Clínica Médica da Universidade Federal de Ciências da Saúde de Porto Alegre/UFCSPA, Porto Alegre, Brasil.

<sup>3</sup>Laboratório de Pesquisa em Avaliação Psicológica/UFCSPA. Departamento de Psicologia da Universidade Federal de Ciências da Saúde de Porto Alegre/UFCSPA, Porto Alegre, Brasil.

**Resumo:** A Dermatite Atópica (DA) é uma doença dermatológica crônica com consequências econômicas e psicossociais que alteram a rotina familiar e afetam a qualidade de vida. O sistema familiar e a autorregulação emocional dos pais em relação aos filhos e adolescentes devem ser considerados no processo saúde-doença. O presente estudo investigou os fatores associados à autorregulação emocional de pais e familiares de crianças e adolescentes com dermatite atópica. Este é um estudo transversal analítico. A amostra foi de 45 pais e familiares de crianças e adolescentes com DA. Os instrumentos utilizados foram questionário biopsicossocial, *Positive and Negative Affect Schedule* (PANAS), *Mindful Attention Awareness Scale* (MAAS) e *Emotional Self-Regulation Scale*. Os resultados mostraram que altos escores na regulação emocional entre pais e familiares estão associados a altos níveis de afetos positivos e baixos níveis de afetos negativos, bem como a níveis elevados de atenção plena. Também mostrou que o lazer está associado à autorregulação emocional dos pais e familiares de crianças e adolescentes com DA. Portanto, é necessário considerar estratégias de intervenção que incluam psicoeducação emocional e incentivos para atividades sociais que envolvam o lazer, a fim de promover a autorregulação emocional dos pais e familiares de crianças e adolescentes com DA.

**Palavras-Chave:** Doença crônica, autorregulação emocional, pais, família, lazer

**Abstract:** Atopic Dermatitis (AD) is a chronic dermatological disease with both economic and psycho-social consequences that change the family routine and affect quality of life. The family system and the parent's emotional self-regulation toward their children and adolescents must be considered in the health-disease process. The present study investigated the factors associated with emotional self-regulation of parents and family members of children and adolescents with atopic dermatitis. This is an analytical cross-sectional study. The sample was of 45 parents and family members of children and adolescents with AD. The instruments used were a biopsychosocial questionnaire, *Positive and Negative Affect Schedule* (PANAS), *Mindful Attention Awareness Scale* (MAAS), and *Emotional Self Regulation Scale*. The results showed that high scores in emotional regulation among parents and family members are associated with high levels of positive affects and low levels of negative affects, as well as raised levels of mindfulness. It also showed that leisure is associated to the emotional self-regulation of parents and family members of children and adolescents

<sup>†</sup>Autor de Correspondência: Prisla Calvetti (prisla@ufcspa.edu.br)

Submetido: 26 de agosto de 2021

Aceite: 21 de setembro de 2023

with AD. Therefore, it is necessary to consider intervention strategies that include emotional psychoeducation and incentives for social activities that involve leisure, in order to promote emotional self-regulation of parents and family members of children and adolescents with AD.

*Keywords:* Chronic disease, emotional self-regulation, parents, family, leisure

---

Atopic dermatitis is a chronic skin disease that is very common in children. Its main symptoms are dry skin, itching, recurring chronic inflammation, and crusted lesions, and it is part of an inflammatory process rooted in the immune system. AD has an unpredictable outcome and is more frequent in patients with a family history of the disease. Studies indicate that the prevalence of AD has been increasing in recent decades, that it is even more recurrent in industrialized countries, and affects 10% to 15% of all children and 1% to 3% all adults in the world. Most of the cases afflict children about 80% to 90% of those affected are younger than seven years old. About 60% of children with AD go into remission of the symptoms as they enter adolescence, but in some cases the disease may recur in adulthood (Bylund et al., 2020).

Indications of a more serious prognosis and possible recurrence include early onset, early seriousness, development of asthma and allergic rhinitis, in addition to a family history of prevalent AD. However, although there are no clinical or biological indicators for predicting this evolution, in the long term most patients are expected to improve, even if those in apparent remission do tend to present with dry skin. After an emotional stress, some patients may present with dermatitis on their hands, which also characterizes recurrence. Emotional stress usually follows dermatological problems, and it directly influences skin alterations (Narvaez et al., 2019). All aspects of a person's life must be considered when caring for them, as the various factors related to the onset and the development of the dermatologic disease can interact with each other (Ristic et al. 2020).

As a chronic disease, treatment for AD is long-term and requires constant skin care measures. Touching by parents and family members at the moment of treatment may present benefits to the familial relationship (Calvetti et al., 2017; Moehlecke et al., 2017). Medical recommendations for treatment involve the use of creams, skin moisturizing, and restricting contact with substances that cause irritation, all of which can impose restrictions in the lives of both the child and their family. Among these limitations, of note are restrictions related to foods and social activities, changes in the family routine, managing special conditions to use medication, and sleep difficulties due to nocturnal scratching (Saini & Pansare, 2019).

When faced with chronic skin disease, children and adolescents can suffer great physical and psychological impact, as the disease changes their body and appearance, and affects their quality of life, in a period of very specific physical and psychosocial development. The disease can also harm social relations and cause difficulties with friends and schoolmates, in addition to hampering the process of independence from the parents, which often increases their levels of concern and stress (Sur et al., 2020).

A study by Talamonti et al. (2021) point to the complaints of parents and caregivers regarding the children's disobedience, especially when performing treatment or medical procedures, to explain why adhering to atopic dermatitis treatment is considered a recurring problem among this population. Children with a chronic condition present internalizing behaviors more frequently than children without the disease, especially involving anxiety, depression, and isolation, and impacting quality of life for both themselves and their families.

Parents of children with AD report difficulties with discipline and in caring for their children, mainly related to sleep deprivation, exhaustion, high costs, and ministering topical and systemic medication. This eventually leads to conflicts involving the whole family, changing the family structure. Due to all of these concerns with their children's health, it has been observed that parents of children with DA end up limiting and restricting their children's participation in extracurricular or

social activities, when compared to parents of children who do not have the disease (Ramirez et al., 2019).

Coping strategies are used to deal with atopic dermatitis and help reduce the unpleasant physical sensation caused by the disease, as well as improve the patient's emotional state. To that end, it is important to understand the emotional self-regulation related with high levels of positive or negative emotions, as well as externalizing and internalizing behaviors. In a broad sense, self-regulation is an executive function managed by the prefrontal cortex, in the brain's frontal lobe, that is essential to keeping the individual active in the pursuit of his or her goals such as self-awareness and the ability for complex planning and problem solving. It is a complex phenomenon in Neuroscience that involves behavior (activation, monitoring, inhibition, preservation, and adaptation), emotions, and cognitive strategies focused on reaching specific objectives (Almeida & Behlau, 2017).

Emotional regulation broaches automatic or controlled strategies that may be conscious or unconscious and influence one or more components of emotional response, including feelings, behaviors, and physiological responses linked to emotions. The emotional self-regulation is defined as an individual's ability, when faced with negative emotions, to contain impulsive behavior and engage in purposeful behavior. Additionally, emotional self-regulation is an essential ability for adaptive development in many domains, and it moderates attention and behavior arising from a situation. In that sense, emotional self-regulation can also be understood as referring to a process that is both intrinsic and extrinsic, and involves monitoring, evaluation, and modification of emotional reactions in order to reach goals (Hutz & Reppold, 2018).

It is important strive to identify factors that influence the resolution of emotional issues in families, as stress is currently a prime factor in human life, and controlling unpleasant emotions has a positive effect on psychological health. Individuals who are more adept at regulating their emotions can better compensate for negative emotional states by practicing enjoyable and pleasurable activities (Heshmati & Ahmadvkhanloo, 2017).

Faced with their children's demands, parents have to develop the ability to regulate their own behavior in reaction to their perception and interpretation of their children's behavior, while simultaneously facing many other challenges in their professional and personal lives as adults. As such, parental adaptation can be conceived as involving a dialectic relationship between the parents' efforts to regulate their own behavior, and as parental tasks, the attempt to regulate the child's behavior, health, and development. Under that perspective, parental self-regulation in the daily interaction with the children becomes especially relevant, as they must anticipate, identify, recognize, and resolve an endless number of educational and health issues, often in a highly conflicting emotional context (Barros et al., 2015).

Alongside emotional regulation, there are studies (Rodrigues et al., 2017) about mindfulness, which is described as a process of attention and awareness to the present moment, with non-judgmental feelings and experiences. Full attention is considered a means for achieving pleasure, wisdom, and connectedness, one that, if practiced correctly, will improve mental and physical health. Some treatments for anxiety and mood disorders, when complemented with aspects of mindfulness, show improved results.

In the last decade, there has been an increase in research about mindfulness, and about interventions based on the technique. Interventions based on mindfulness have therefore arisen as a treatment option for this issue, due to their versatility in channeling physical and emotional suffering (Ruskin et al., 2017). Good results have also been reported in treating complaints of chronic pain and improving mood and well-being in sick individuals. Practicing mindfulness improves a person's ability to manage painful experiences, moment by moment, with acceptance. Even when facing thoughts and feelings that are hard to tolerate, upon reaching a state of mindfulness the individual becomes receptive to these psychological events, instead of wanting to give up on them (Hutz & Reppold, 2018).

This study investigated the positive and negative affects (affective components) that comprise subjective well-being. It will, therefore, include emotional reactions to everyday events, and the cognitive judgments of satisfaction or dissatisfaction towards life, as underscored (Noronha et al. 2015).

If the family is not emotionally regulated and children do not have a healthy environment, this will not only lead to physical difficulties, but to health issues, and can seriously harm the environment, the children's binding process, and their lives. The aim of this research was to investigate transdiagnostic factors associated to the emotional self-regulation of parents and families of children and adolescents with atopic dermatitis.

## METHODS

This is an analytic cross-sectional study.

### *Sample*

The sample included 45 parents and/or family members of children and adolescents aged 6 to 17 with atopic dermatitis, who were treated in the ambulatory in a hospital of south of Brazil. The criterion for participation were parents of children diagnosed with atopic dermatitis. The criterion for exclusion was: parents of children diagnosed with atopic dermatitis and other comorbidities.

### *Material*

Biopsychosocial data record sheets and clinical situation: designed to collect data about the biopsychosocial traits of the sample, such as gender, age, and education, as well the child's or adolescent's behavior traits based on their parent's perceptions, such as social support, leisure activities, and sleep patterns. The clinical situation assessed elements such as the frequency and causes of visits to the dermatologist.

Positive and Negative Affect Schedule – PANAS (Watson et al., 1988) adapted with psychometric evidences for Brazil by Giacomoni and Hutz (1997). PANAS was developed to fill the need for reliable and valid Positive Affect and Negative Affect scales that are also brief and easy to administer. The authors thus developed two 10-item scales that include the list of positive and negative affects that comprise the PANAS. The scale lists 20 items to assess positive and negative affects. Items are scored from 1 (not at all) to 5 (extremely).

Mindful Attention Awareness Scale - MAAS (Brown & Ryan, 2003) – adapted with psychometric evidences for Brazil by Barros et al. (2015). This scale assesses the level of mindfulness and comprises 15 items in a six-point Likert scale, which ranges from 1 (almost always) to 6 (almost never), adapted from the Brown et al. 2003 study. The scale is one-dimensional, so all items measure mindfulness.

Emotional Self-Regulation Scale (EARE) developed with psychometric evidences by Noronha et al. (2019), in order to assess emotional self-regulation when faced with an event that causes sadness. The scale is grounded on the theories set forth by Gratz and Roemer (2004), Nelis et al. (2011), Weiss et al. (2015). When answering, participants must consider which of their thoughts, feelings, and behaviors best describe them when they are sad. The version of this instrument used in the present study is comprised of 34 items, arranged on a 5-point Likert scale (from 0 or “never” to 4 or “always”). Therefore, higher total self-regulation score points to more adequate strategies and lower pessimism and freezing by the parents in situations that demand a more active presence.

### *Procedure*

Participants were contacted in the waiting room after their dermatologist appointments to see if they would like to participate in the study. Data collection was performed by the author with one patient at a time, in a private room at the dermatology clinic of the hospital, in order to preserve the participants' privacy.

For the statistics, 80% certainty, 5% significance, and correlation  $r=0.3$  were used. Descriptive and inferential analyses of the biopsychosocial aspects were conducted, and the correlation between variables in the study were calculated. The qualitative variables were described by frequency and percentage, while the quantitative variables were described by average and standard deviation when normally distributed, or median and 25-75 percentiles otherwise. The quantitative variables were described by frequency and percentage, or average and standard deviation. Variable normality was determined by Kolmogorov-Smirnov (K-S) tests. Correlation of emotional self-regulation with the remaining quantitative instruments was determined by Spearman's rank correlation coefficient; the comparison between groups was measured by Student's t-test or ANOVA, according to the nature of the distribution and the number of groups.

The explanation of total self-regulation was assessed by a multiple regression analysis with the significant variables in the univariate analyses. The Stepwise method for selecting variables was applied and the assumptions for the analysis were verified: normality of residues, Durbin-Watson statistic near 2, and VIF < 10. Results were considered statistically significant at  $p<0.05$  and the analyses conducted with SPSS version 25. The research was approved by the Research Ethics Committee at the hospital of the south of Brazil.

## **RESULTS**

Forty-five adults (parents and/of family members) of children with atopic dermatitis were evaluated: 35 (84.4%) were women and 7 (15.6 %) were men; the average age was 42.16 years ( $SD = 12.43$ ). The sociodemographic characterization (Table 1) shows that parents and caregivers had an average age of 42; 38 were women (84.4%), of which 31 were mothers and 7 were grandmothers of the children; among the 7 (15.6%) men, 5 were fathers of the children, and 1 was their grandfather. In this study, 60% of respondents were using the Unified (public) Health System, SUS, and 62.2% had low income, with family income between 2 and 4 minimum wages. As for education, 82% of the respondents said they completed grade school or high school. Married couples, or in a stable union, are prevalent at 71.1%, while 13.3% are single, 8.9% are divorced, and 6.7% are widows or widowers. Ten (22.2%) respondents stated having only one child; those with two children numbered 21 (46.7%), and those with three or more children were 14 (31.1%).

Respondents practice healthy habits in regards to smoking and drinking, with 93.3% stating they do not smoke, and 75.6% stating they do not drink. However, results show that 53.3% do not practice physical activity regularly, against 46.7% that do. Most of the participants, 75.6%, reported practicing leisure activities, such as taking walks in parks or public squares accompanied by their families. Also of note is that 82.2% reported having a support network, such as family and friends that provide social support.

Table 2 shows the profile of the children with atopic dermatitis, 60% of which were girls. Average age of respondents was 9 years old, and the average age at the start of AD treatment was 5.4 years old. Most of the respondents, 39 (86.7%), were still in grade school.

**Table 1.** Sociodemographic traits of parents and/or family members of children and adolescents with atopic dermatitis ( $n=45$ ).

|   | Frequency<br><i>n</i> (%) | Average | Median | <i>SD</i> |
|---|---------------------------|---------|--------|-----------|
| <b>Age</b>                                |                           | 42.16   | 39     | 12.433    |
| <b>Gender</b>                             |                           |         |        |           |
| Female                                    | 38 (84.4)                 |         |        |           |
| Male                                      | 7 (15.6)                  |         |        |           |
| <b>Type of coverage</b>                   |                           |         |        |           |
| Public                                    | 27 (60)                   |         |        |           |
| Health plan                               | 18 (40)                   |         |        |           |
| <b>Relationship</b>                       |                           |         |        |           |
| Biological mother or father               | 36 (80)                   |         |        |           |
| Stepmother or stepfather                  | 1 (2.2)                   |         |        |           |
| Grandparent                               | 8 (17.8)                  |         |        |           |
| <b>Marital status</b>                     |                           |         |        |           |
| Single                                    | 6 (13.3)                  |         |        |           |
| Married / stable union                    | 32 (71.1)                 |         |        |           |
| Divorced                                  | 4 (8.9)                   |         |        |           |
| Widow/Widower                             | 3 (6.7)                   |         |        |           |
| <b>Children</b>                           |                           |         |        |           |
| 1 Child                                   | 10 (22.2)                 |         |        |           |
| 2 Children                                | 21 (46.7)                 |         |        |           |
| 3 or more children                        | 14 (31.1)                 |         |        |           |
| <b>Education</b>                          |                           |         |        |           |
| Grade school                              | 15 (33.3)                 |         |        |           |
| High school                               | 22 (48.9)                 |         |        |           |
| College degree                            | 8 (17.8)                  |         |        |           |
| <b>Family income</b>                      |                           |         |        |           |
| 1 minimum wage                            | 9 (20)                    |         |        |           |
| 2 to 4 minimum wages                      | 28 (62.2)                 |         |        |           |
| 5 or more minimum wages                   | 8 (17.8)                  |         |        |           |
| <b>Physical activities</b>                |                           |         |        |           |
| Yes                                       | 21 (46.7)                 |         |        |           |
| No  | 24 (53.3)                 |         |        |           |
| <b>Leisure activities</b>                 |                           |         |        |           |
| Yes                                       | 34 (75.6)                 |         |        |           |
| No  | 11 (24.4)                 |         |        |           |
| <b>Smoker</b>                             |                           |         |        |           |
| Yes                                       | 3 (6.7)                   |         |        |           |
| No  | 42 (93.3)                 |         |        |           |
| <b>Alcohol consumption</b>                |                           |         |        |           |
| Yes                                       | 11 (24.4)                 |         |        |           |
| No  | 34 (75.6)                 |         |        |           |
| <b>Social support</b>                     |                           |         |        |           |
| Yes                                       | 37 (82.2)                 |         |        |           |
| No  | 8 (17.8)                  |         |        |           |
| <b>Perception of health care received</b> |                           |         |        |           |
| Regular                                   | 1 (2.2)                   |         |        |           |
| Good                                      | 5 (11.1)                  |         |        |           |
| Very good                                 | 23 (51.1)                 |         |        |           |
| Excellent                                 | 16 (35.6)                 |         |        |           |

**Table 2.** Perception of parents and/or family members about the child or adolescent’s biopsychosocial traits ( $n=45$ ).

|  | Frequency<br><i>n</i> (%) | Average | Median | <i>SD</i> |
|--|---------------------------|---------|--------|-----------|
| <b>Age</b>                                   |                           | 9,69    | 9      | 3,225     |
| <b>Age at start of treatment</b>             |                           | 5,40    | 4      | 5,065     |
| <b>Gender</b>                                |                           |         |        |           |
| Female                                       | 27 (60)                   |         |        |           |
| Male   | 18 (40)                   |         |        |           |
| <b>Education</b>                             |                           |         |        |           |
| Pre-school                                   | 1 (2,2)                   |         |        |           |
| Grade school, incomplete                     | 39 (86,7)                 |         |        |           |
| High school, incomplete                      | 3 (6,7)                   |         |        |           |
| Does not go to school                        | 2 (4,4)                   |         |        |           |
| <b>Reason for visiting dermatologist</b>     |                           |         |        |           |
| Severe itching                               | 9 (20)                    |         |        |           |
| Worsening disease                            | 10 (22,2)                 |         |        |           |
| Check-up or control                          | 35 (77,8)                 |         |        |           |
| Renew treatment                              | 1 (2,2)                   |         |        |           |
| <b>Sleep pattern</b>                         |                           |         |        |           |
| Bad  | 6 (13,3)                  |         |        |           |
| Regular                                      | 18 (40)                   |         |        |           |
| Good   | 13 (28,9)                 |         |        |           |
| Very good                                    | 6 (13,3)                  |         |        |           |
| Excellent                                    | 2 (4,4)                   |         |        |           |
| <b>Had to stop an activity because of AD</b> |                           |         |        |           |
| Yes  | 23 (51,1)                 |         |        |           |
| No   | 22 (48,9)                 |         |        |           |
| <b>Has been discriminated because of AD</b>  |                           |         |        |           |
| Yes  | 27 (60)                   |         |        |           |
| No   | 18 (40)                   |         |        |           |

When asked about reasons for visiting the dermatologist, most of the respondents – 35 (77.8%) – said they were taking their children in for follow-up or control, and 38 (84.4%) stated they only use the dermatology clinic where the survey was being conducted. In the sample, 23 (51.1%) of respondents reported that their child had stopped participating in some physical, social, or leisure activity because of AD. Most of these activities were physical in nature, such as playing soccer, doing PE at school, or going to the pool or the beach in the summer, since heat and sweat can worsen the condition and dry the skin. Children who have more visible lesions on their faces also prefer not to go to birthday parties and other social activities because they feel ashamed of their allergies. In terms of discrimination because of their condition, 27 (60%) parents reported that their children had suffered discrimination at some point in their lives.

The averages for positive affects (37.22,  $SD=6.47$ ), negative affects (22.22,  $SD=7.76$ ), and mindful attention (4.10,  $SD=0.88$ ), jointly suggest an elevated level of mindfulness by parents and family members of children and adolescents with atopic dermatitis (Table 3).

Significant correlations were found between higher emotional self-regulation scores and lower negative affects scores ( $r=-0.663$ ), higher mindful attention scores ( $r=0.507$ ), and higher positive affects scores ( $r=0.405$ ). Higher self-regulation is correlated with lower negative affects scores, higher positive affects scores, and higher mindful attention (and vice-versa) (Table 4).

**Table 3.** Descriptive statistics of the PANAS, MAAS, adequate coping strategies, pessimism/negativism, freezing, and EARE Emotional Self-regulation Scale total ( $n=45$ ).

|   | Average | Median | SD     | Amplitude | Minimum | Maximum |
|---|---------|--------|--------|-----------|---------|---------|
| Positive affects  | 37.22   | 39.00  | 6.466  |           | 22      | 45      |
| Negative affects  | 22.22   | 20.00  | 7.760  |           | 10      | 42      |
| Mindful Attention                                       | 4.1052  | 4.1333 | 0.884  |           | 2.53    | 5.73    |
| Adequate coping strategies                              | 31.84   | 34.00  | 9.217  | 35        | 8       | 43      |
| Pessimism/Negativism/<br>Pessimistic view of the future | 3.58    | 3.00   | 3.551  | 17        | 0       | 17      |
| Freezing / Being misunderstood                          | 11.76   | 11.00  | 6.492  | 24        | 1       | 25      |
| Self-regulation (total)                                 | 80.51   | 84.00  | 12.471 | 52        | 49      | 101     |

Therefore, the results indicate that total self-regulation is correlated with positive affects: higher positive affects indicate higher self-regulation, while higher negative affects indicate lower self-regulation. Also, that having more positive affects and leisure activities lead to more positive outcomes in emotional self-regulation than having high mindfulness. On the other hand, higher scores in negative affects presented correlation with higher scores in freezing, and vice-versa, and a higher freezing score was correlated with lower mindfulness.

Although mindfulness had a weaker correlation than the other factors just mentioned, the higher the mindfulness score, the higher the emotional self-regulation. This increase in frequency led to an increase in personal consolidated traits, including higher mindfulness and perception of social support. These, in turn, were predictive of higher emotional self-regulation. Every additional point in negative affects lowers self-regulation by 1.04 points, on average. Mindfulness stopped being significant and was not included in the model, probably because of its correlation with negative affects and leisure activities.

A comparison of the sociodemographic variables in Table 5 shows that parents' leisure activities correlate significantly with emotional self-regulation. A higher frequency of leisure activities, such as walks in parks, visiting family and friends, and going to the movies, whether with the rest of the family or alone, indicates increased emotional self-regulation in comparison with respondents who do not engage in leisure activities.

**Table 4.** Spearman correlations among positive affects, negative affects, and mindful attention of parents and family members of children and adolescents with atopic dermatitis ( $n=45$ ).

|   | Adequate coping strategies | Pessimism /negativism /Pessimistic view of the future | Freezing / Being misunderstood | Total         | Mindful Attention Awareness Scale – Score (average) |
|---|----------------------------|---|--------------------------------|---------------|---|
| Positive affects                                    | 0.37 (0.01)                | -0.19 (0.21)  | -0.20 (0.16)                   | 0.40 (<0.01)  | 0.25 (0.08)   |
| Negative affects                                    | -0.27 (0.07)               | 0.68 (<0.01)  | 0.69 (<0.01)                   | -0.66 (<0.01) | -0.46 (<0.01)                                       |
| Mindful Attention Awareness Scale – score (average) | 0.35 (0.01)                | -0.46 (<0.01)   | -0.38 (<0.01)                  | 0.50 (<0.01)  |   |

**Nota.**  $R$  ( $p$ -value)

Regarding emotional self-regulation, the main object of this study, multiple linear regression analysis indicated which variables are significant and explain the variation in emotional self-regulation ( $R^2=64.3$ ). After analyzing factors associated with self-regulation, positive affects, negative affects, mindfulness levels, and leisure activities, the final model was composed of negative affects, leisure, and positive affects.



**Table 5.** Emotional self-regulation across sociodemographic variables ( $n=45$ ):

|                        | <i>n</i> | <i>Average</i> | <i>SD</i> | <i>p-value</i> |
|------------------------|----------|----------------|-----------|----------------|
| Gender                 |          |                |           | 0,989          |
| Men                    | 7        | 80.57          | 10.753    |                |
| Women                  | 38       | 80.50          | 12.892    |                |
| Marital status         |          |                |           | 0.650          |
| Single                 | 6        | 82.17          | 12.156    |                |
| Married / stable union | 32       | 81.13          | 13.302    |                |
| Divorced               | 4        | 79.75          | 9.465     |                |
| Widow(er)              | 3        | 71.67          | 6.506     |                |
| Education              |          |                |           | 0.142          |
| Elementary School      | 15       | 75.80          | 12.902    |                |
| High School            | 22       | 81.73          | 10.584    |                |
| College                | 8        | 86.00          | 14.900    |                |
| Work                   |          |                |           | 0.070          |
| No                     | 18       | 76.39          | 13.908    |                |
| Yes                    | 27       | 83.26          | 10.822    |                |
| Leisure activities     |          |                |           | 0.021          |
| Yes                    | 34       | 82.91          | 10.978    |                |
| No                     | 11       | 73.09          | 14.370    |                |
| Social Support         |          |                |           | 0.439          |
| Yes                    | 37       | 81.19          | 12.596    |                |
| No                     | 8        | 77.38          | 12.165    |                |

**Table 6.** Factors associated with Emotional Self-regulation ( $n=45$ )

|                  | <i>Beta</i> | <i>Standard Error</i> | <i>Standardized Beta</i> | <i>T</i> | <i>p-value</i> |
|------------------|-------------|-----------------------|--------------------------|----------|----------------|
| Constant         | 102.374     | 10.681                |                          | 9.584    | 0.000          |
| Negative affects | -1.041      | 0.158                 | -0.648                   | -6.603   | 0.000          |
| Leisure          | 10.823      | 2.715                 | 0.377                    | 3.986    | 0.000          |
| Positive affects | 0.396       | 0.192                 | 0.205                    | 2.056    | 0.046          |

The results obtained show that there were correlations between emotional self-regulation and associated factors of positive affects, negative affects, mindfulness, and leisure activities. The factor with the greatest correlation was negative affects (-0.64 weight), followed by leisure (0.37 weight), and positive affects (0.205 weight).

## DISCUSSION

A study by Dias et al. (2017), reported that children and adolescents with skin diseases faced increased difficulty for interpersonal interaction and stigmatization, as their visible lesions make them feel insecure and afraid of bullying at school. Among the difficulties found, worth mentioning are absence from school at different moments throughout the school year due to complications with the disease, medication side-effects, and even hospitalizations, in more severe cases. Skin diseases can have negative impacts on the individual's emotional state, social relations, and everyday activities, due to the stigma caused by the visual aspect of the lesions

Itching, which is constant in most cases, directly affects sleep quality, with consequences to the patient's quality of life, as children's everyday activities, behavior, and school productivity are all impacted. The chronic itching is often untreatable, and therefore severely impacts the patient's quality of life, as it greatly hinders sleep, affecting behavior while awake and the children's productivity (Calvetti et al. 2019; Campos et al. 2017). Persons with high attention levels are more able of

regulating their sensation of well-being, with higher emotional awareness, comprehension, and acceptance of their ability to correct or repair degraded emotional states (Wielgosz et al., 2019). The ability to regulate present emotional experiences can lead to a prolonged maintenance of mental health. Cepeda-Hernández (2015), on their preliminary research on emotional regulation and full attention, revealed the potential benefits of incorporating mindfulness skills in diversified treatments, aiming to lessen problems related to emotional dysregulation. They concluded that the awareness, self-pity, and kindness components of mindfulness can facilitate the development of adaptive emotional regulation.

Higher mindfulness indices allow the individual to cope with negative emotions in a less reactive manner, which increases various components of general well-being and emotional health, satisfaction with life, self-esteem, positive self-evaluation, overall health, and emotional performance and regulation in the positive and general reevaluation. Specifically, affects are understood as a person's immediate response to a stimulus or an event, and is generally based on a feeling of excitement, as the event is assessed as being pleasurable or painful to the individual (Alves & Ambiel, 2018). High levels of positive affects indicate frequent demonstrations of happiness, enthusiasm, self-confidence, and engagement in one's chores, while high scores in negative affects reveal repeated instances of sadness, dismay, and concern (Noronha et al., 2015).

Positive emotions help the individual better cope with difficult situations. During stressful periods, some people try to contemplate the positive aspects of their daily lives, or feel positively challenged by the issues they're facing. Often, they re-evaluate a negative situation or try to see it from a positive perspective. In other cases, they create a positive situation, or look at a common event under a positive light, in order to counterbalance the negative emotions from a stressful event (Silvestre & Vandenberghe, 2013). On the other hand, a negative affect is an uncomfortable perception related to anguish or distress, and includes a range of aversive states of mind, such as anger, guilt, disgust, and fear. It refers to a state of distraction and negligible engagement that is transitory but includes unpleasant emotions (Alves & Ambiel, 2018).

The concept of leisure is broad and varied, and has changed over time. It can be considered to be closely related to the concepts of quality of life, health, and citizenship. Leisure is not simply seen as an option to occupy free time with a pleasurable activity, but as an option for the person to feel a sense of belonging, of being both an agent and an effective participant in social spaces. The conscious practice of leisure leads to equally conscious attitudes in citizenship. Contrary to what one might believe, leisure is not a set of idle activities devoid of purpose, but rather it has an educational dimension and enriches social interaction. Life expectancy in developed societies is more closely related to good nutrition, physical exercise, and the promotion of health than with treating diseases. Good health results are considered a result of living in healthy environments and keeping healthy habits, one of which is to have pleasure in leisure, meaning to have fun (Håkansson et al., 2016).

Adapting to a chronic illness varies greatly from person to person, and depends not only on the disease's severity and specifics, but on the individual's personal characteristics and the quality of social support and health services. The promotion of a good perception of quality of life as it relates to health, including well-being and mental health, as well as a good perception of physical health (with good personal control of symptoms) are essential, and appear associated to the possibility of social interaction, with family, friends, at school, and during leisure activities. These results suggest that, for people with chronic AD, intervention efforts must seek to ensure their affective and social participation in their family, at school, and among their peer groups. The responses indicated that parents or caregivers who work outside the home showed greater emotional self-regulation than those who don't. This can be explained by the increased social interaction with other people.

Another aspect of note is that self-regulation increases as the parent's or caregivers' education level rises, which can be explained by considering that a person with more years of study and knowledge might feel more apt in dealing with difficult situations. Also, the higher the family income, the higher the emotional self-regulation reported. It was also shown that there's no correlation

between emotional self-regulation and the practice of physical exercise, which is, in fact, an independent variable. Similarly, there is no correlation between the child's sleep patterns and the parents' or caregivers' self-regulation. Additionally, emotional self-regulation was found to be independent of the gender of parents or caregivers.

Negative emotions limit the range of dispositions and ideas, specifically benefitting actions that fit the context of the emotion: run, attack, avoid, or retreat. This restriction may be beneficial up to a point, but it can become overwhelming in the person's life. Additionally, negative emotions have what are called toxic effects, which involve hormonal and cardiovascular processes, or other bodily responses that support the specific behavior linked to the emotion. When an emotion becomes too frequent or intense, these physiological response chains can impact the individual's health (Silvestre et al., 2013).

The intervention strategy based on mindfulness promotes a more adaptive emotional regulation, and is associated to the awareness of emotions, feelings, and processes of attention. This evidence doesn't mean the individual will stop experiencing unpleasant emotions, but rather that it is possible to minimize rumination as an emotional regulation strategy that, used in excess, becomes non-adaptive (Barros et al., 2015). Each emotion demands the use of specific regulation or coping strategies. In order to better cope with sadness, strategies such as cognitive restructuring and leisure, social, and sports activities have been used. For anger, the authors describe diverse coping strategies, such as distraction, self-verbalization, assertiveness, changes in thought, muscle relaxation, and distancing from the situation, among others.

In this manner, as we increase our awareness of our feelings, emotions, and their effects, we can regulate and control our abilities to improve them, so that they do not compromise our performance. With increasing attention and awareness of thought, comes an increased sense of non-judgment, helping the person clearly see and accept emotions and physical phenomena. As individuals are more aware of their negative and positive emotions, this plays an important role in improving and adjusting their emotional states. Individuals who enjoy higher awareness are able to visualize their own cognitive processes and abilities, in order to employ efficient strategies when faced with difficult situations (Heshmati et al., 2017).

With these considerations, parents need to adapt to the healthcare demands of their children, which requires the ability to regulate their own behaviors in reaction to their perception and interpretation of the child's behavior, health, and development. They also face many other challenges in their adult professional life and relationships. Therefore, parental practices are established, from early in their children's lives, as a privileged means of identifying and understanding the emotions, expressions, and strategies for emotional regulation.

This study identified factors related to emotional self-regulation, such as positive affects, negative affects, mindfulness levels, and leisure activities. Challenges faced by parents of children with health issues include competently and consistently implementing a skin care routine that requires more frequent emotional regulation in order to ensure quality parental relationship and improved treatment of the atopic dermatitis. In a family environment of predominantly positive and participative expression, negative responses are used less frequently, and there's a greater tendency to respond to the children's emotional expression in a more guiding manner. On the other hand, if parents tend to react negatively to their children's emotions, even positive emotions, that contributes to creating a family environment with negative and hostile emotional expression.


In regards to emotional regulation, the results confirm that the interaction with adults, who are more mature and capable than the children, is an essential element to develop adequate social mediation that will promote the child's development. In this manner, parents who have more clarity and control of their emotions tend to have fewer negative reactions that minimize, cause discomfort, or punish their children for expressing their emotions – and more adequate reactions that help them


recognize, differentiate, and regulate their own emotional states in difficult and uncomfortable situations.


In regards to the limitations of this study, variables involving the children's temperament or the parents' personality were not controlled, and neither were variables about signs and symptoms of anxiety and depression. In addition, no measurements were taken of the seriousness (itching) of the disease afflicting the children and adolescents, and so this variable was not correlated to the self-regulation of parents and family members. Future research should consider including these variables.

Finally, emotional psychoeducation strategies should be included in any further studies and in the practice of parental guidance and of dealing with the children's and adolescent's behavior. Interdisciplinary approaches need to be developed to create effective strategies to approach children and adolescents' health with the participation of parents and family members, so as to foster quality relationships and bolster the practices of emotional regulation.

## ORCID

Magda Weber  <https://orcid.org/0000-0001-5885-5851>

Caroline Reppold  <https://orcid.org/0000-0002-0236-2553>

Prísla Calvetti  <https://orcid.org/0000-0003-0581-9595>

## CONTRIBUIÇÃO DOS AUTORES

Juliana Burin: Concetualização; Curadoria dos dados; Análise formal; Investigação; Metodologia; Administração do projeto; Recursos; Software; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição.

Magda Weber: Visualização; Redação – revisão e edição.

Caroline Reppold: Visualização; Redação – revisão e edição.

Prísla Calvetti: Concetualização; Curadoria dos dados; Análise formal; Aquisição de financiamento; Investigação; Metodologia; Administração do projeto; Recursos; Software; Supervisão; Validação; Visualização; Redação do rascunho original; Redação – revisão e edição.

## REFERENCES

- Barros, V. V., Kozasa, E. H., de Souza, I. C. W., & Ronzani, T. M. (2015). Validity evidence of the Brazilian Version of the Mindful Attention Awareness Scale (MAAS). *Psicologia: Reflexão e Crítica*, 28(1), 87–95. <https://doi.org/10.1590/1678-7153.201528110>
- Barros, L., Goes, A.R. & Pereira, A.I. (2015). Parental self-regulation, emotional regulation and temperament: Implications for intervention. *Estudos de Psicologia (Campinas)*, 32(2), 295-306. <https://doi.org/10.1590/0103-166X2015000200013>.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Bylund, S., Von Kobyletzki, L. B., Svalstedt, M., & Svensson, Å. (2020). Prevalence and incidence of atopic dermatitis: A systematic review. *Acta Dermato-Venereologica*, 100(12), adv00160. <https://doi.org/10.2340/00015555-3510>
- Calvetti, P. Ü., Moitoso, G., Baja, J. U., & Pereira, K. (2019). Neuropsychological and socioemotional aspects in children with atopic dermatitis. *Psicologia, Saúde & Doenças*, 20(1), 47-58. <http://dx.doi.org/10.15309/19psd200104>

- Calvetti, P. Ü., Rivas, R., Coser, J., Barbosa, A. C. M., & Ramos, D. (2017). Aspectos biopsicossociais e qualidade de vida com dermatoses crônicas. *Psicologia, Saúde & Doenças, 18*(2), 297-307. <http://dx.doi.org/10.15309/17psd180202>
- Campos, A. L., Araújo, F. M., Santos, M. A., Santos, A. A., & Pires, C. A. (2017). Impacto da dermatite atópica na qualidade de vida de pacientes pediátricos e seus responsáveis. *Revista Paulista de Pediatria, 35*(1), 5-10. <http://dx.doi.org/10.1590/1984-0462/2017;35;1;00006>
- Cepeda-Hernández, S. L. (2015). El mindfulness disposicional y su relación con el bienestar, la salud emocional y la regulación emocional. *Revista Internacional de Psicología, 14*(2), 1–31. <https://doi.org/10.33670/18181023.v14i02.135>
- Dias, N. G., Gon, M. C. C., & Zazula, R. (2017). Comparação do perfil comportamental de crianças com diferentes dermatoses crônicas. *Avances en Psicología Latinoamericana, 35*(3), 559-570. <http://dx.doi.org/10.12804/revistas.urosario.edu.co/apl/a.4506>
- Håkansson, C., Axmon, A., & Eek, F. (2016). Insufficient time for leisure and perceived health and stress in working parents with small children. *Work (Reading, Mass.), 55*(2), 453–461. <https://doi.org/10.3233/WOR-162404>
- Hutz, C., & Reppold, C. (2018). *Intervenções em Psicologia Positiva aplicadas à saúde*. Editora Leader.
- Moehlecke, F., Calvetti, P. Ü., & Weber, M. B. (2017). Percepções de crianças e adolescentes com e sem doença crônica de pele sobre saúde e envelhecimento. *Estudos e pesquisas em psicologia, 17*(3), 915-93.
- Narvaez, D., Wang, L., Cheng, A., Gleason, T. R., Woodbury, R., Kurth, A., & Lefever, J. B. (2019). The importance of early life touch for psychosocial and moral development. *Psicologia, Reflexao e Critica, 32*(1), 16. <https://doi.org/10.1186/s41155-019-0129-0>
- Noronha, A. P. P., Baptista, M. N., & Batista, H. V. (2019). Initial psychometric studies of the Emotional Self-Regulation Scale: Adult and child-youth versions. *Estudos de Psicologia (Campinas), 36*, e180109. <https://doi.org/10.1590/1982-0275201936e180109>
- Noronha, A. P. P., Martins, D. F., Campos, R. R. F., & Mansão, C. S. M. (2015). Relações entre afetos positivos e negativos e os cinco fatores de personalidade. *Estudos de Psicologia (Natal), 20*(2), 92-101. <https://doi.org/10.5935/1678-4669.20150011>
- Ramirez, F. D., Chen, S., Langan, S. M., Prather, A. A., McCulloch, C. E., Kidd, S. A., Cabana, M. D., Chren, M. M., & Abuabara, K. (2019). Association of atopic dermatitis with sleep quality in children. *JAMA pediatrics, 173*(5), e190025. <https://doi.org/10.1001/jamapediatrics.2019.0025>
- Ristic, G., Nikolic, A. R., Radovanovic, S., & Radevic, S. (2020). Atopic dermatitis: the impact of personality properties of affected children and parental styles of care. *European Journal of Dermatology: EJD, 30*(3), 251–258. <https://doi.org/10.1684/ejd.2020.3760>
- Rodríguez-Ledo, C., Orejudo, S., Cardoso, M. J., Balaguer, Á., & Zarza-Alzugaray, J. (2018). Emotional intelligence and mindfulness: Relation and enhancement in the classroom with adolescents. *Frontiers in psychology, 9*, 2162. <https://doi.org/10.3389/fpsyg.2018.02162>
- Rodrigues, M. F., Nardi, A. E., & Levitan, M. (2017). Mindfulness in mood and anxiety disorders: a review of the literature. *Trends in psychiatry and psychotherapy, 39*(3), 207–215. <https://doi.org/10.1590/2237-6089-2016-0051>
- Ruskin, D., Harris, L., Stinson, J., Kohut, S. A., Walker, K., & McCarthy, E. (2017). "I Learned to Let Go of My Pain". The effects of mindfulness meditation on adolescents with chronic pain: An analysis of participants' treatment experience. *Children, 4*(12), 110. <https://doi.org/10.3390/children4120110>
- Saini, S., & Pansare, M. (2019). New insights and treatments in atopic dermatitis. *Pediatric clinics of North America, 66*(5), 1021–1033. <https://doi.org/10.1016/j.pcl.2019.06.008>

- Silvestre, R. L. S., & Vandenberghe, L. (2013). Os benefícios das emoções positivas. *Contextos Clínicos*, 6(1), 50-57. <https://dx.doi.org/10.4013/ctc.2013.61.06>
- Sur, M., Boca, A. N., Ilies, R. F., Floca, E., Tataru, A., & Sur, L. (2020). Correlation between quality of life and disease severity of pediatric patients with atopic dermatitis. *Experimental and therapeutic medicine*, 20(6), 189. <https://doi.org/10.3892/etm.2020.9319>
- Talamonti, M., Galluzzo, M., Silvaggio, D., Lombardo, P., Tartaglia, C., & Bianchi, L. (2021). Quality of life and psychological impact in patients with atopic dermatitis. *Journal of clinical medicine*, 10(6), 1298. <https://doi.org/10.3390/jcm10061298>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology*, 54(6), 1063–1070. <https://doi.org/10.1037//0022-3514.54.6.1063>
- Wielgosz, J., Goldberg, S. B., Kral, T., Dunne, J. D., & Davidson, R. J. (2019). Mindfulness Meditation and Psychopathology. *Annual review of clinical psychology*, 15, 285–316. <https://doi.org/10.1146/annurev-clinpsy-021815-093423>