






Article

Roles of Parental Psychological Flexibility, Self-Compassion, and Self-Efficacy in Affecting Mental Health and Quality of Life in Parents of Children with Eczema

Yuen Yu Chong , Joycelyn Yee Man Kwan , Pui Tik Yau , Ho Yu Cheng  and Wai Tong Chien 

The Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China; joycelynkwan@cuhk.edu.hk (J.Y.M.K.); jamyau@cuhk.edu.hk (P.T.Y.); hycheng@cuhk.edu.hk (H.Y.C.); wtchien@cuhk.edu.hk (W.T.C.)

* Correspondence: conniechong@cuhk.edu.hk

Abstract: Parents of young children with eczema often experience adverse mental health consequences, including depression, anxiety, stress, and a reduced health-related quality of life (HRQoL), due to the unpredictable nature of flare-ups and exacerbations. This study investigated the roles of psychological flexibility, self-compassion, and self-efficacy in fostering parental mental health outcomes and HRQoL while caring for children diagnosed with eczema. Baseline data from an ongoing clinical trial examining the effects of a family acceptance-and-commitment-therapy-based eczema management program (FACT-EMP) on parent–child dyads affected by eczema ($N = 110$ dyads, 75.5% mothers; 66.4% boys) were analyzed using adjusted hierarchical regression analyses. The findings indicate that psychological inflexibility was significantly associated with symptoms of anxiety, depression, stress, and HRQoL. Self-compassion was significantly linked to all assessed mental health outcomes, whereas self-efficacy showed a significant association only with symptoms of depression. These results underscore the significance of promoting parental psychological flexibility and self-compassion through acceptance and commitment therapy and compassion-based approaches to enhance mental health and quality of life while managing children’s eczema.



Citation: Chong, Y.Y.; Kwan, J.Y.M.; Yau, P.T.; Cheng, H.Y.; Chien, W.T. Roles of Parental Psychological Flexibility, Self-Compassion, and Self-Efficacy in Affecting Mental Health and Quality of Life in Parents of Children with Eczema. *Healthcare* **2023**, *11*, 2708. <https://doi.org/10.3390/healthcare11202708>

Academic Editor: Walter R. Schumm

Received: 4 August 2023

Revised: 2 October 2023

Accepted: 7 October 2023

Published: 10 October 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: psychological flexibility; self-compassion; mental health; quality of life; parents; eczema

1. Introduction

Eczema is a chronic and relapsing inflammatory skin condition characterized by eczematous lesions and intense pruritus [1]. The latest 2023 international study arising from the International Study of Asthma and Allergies in Children (ISAAC) has indicated that at least 6% of children worldwide are suffering from symptoms of current eczema, such as chronic rashes, xerosis, and crusting, with an increase in the lifetime prevalence of at least 2% over the past decade [2]. In Hong Kong, around 30% of Hong Kong children (approximately 160,000 children) have eczema [3]. It is widely recognized that children with eczema generally experience a lower quality of life and worse mental health conditions than healthy individuals due to the severe symptoms of eczema, which cause sleep disturbances such as poor initiation [4,5], frequent awakenings [6,7], and prolonged nocturnal wakefulness [8]. Stigmatization by peers, including being teased or bullied for skin conditions arising from eczema, is also well documented [9].

Considering the complex etiology of eczema, arising from a combination of genetic predisposition and environmental elements, effectively managing and mitigating the condition requires parent–child dyads to engage in frequent medical evaluations and adjustments to treatment [10]. This requires the dyads to adapt their family routines accordingly, thereby introducing additional complexity and placing a significant psychological burden on parents [11,12]. Indeed, the unpredictable nature of eczema flare-ups, characterized by unforeseen and sudden exacerbations of symptoms (e.g., aggravated skin lesions) in

different body locations without identifiable triggers, coupled with inconsistent treatment responses, demands constant vigilance from parents and the adoption of various preventive strategies [13]. These strategies include identifying and avoiding triggers, implementing a consistent skincare routine, and ensuring regular and thorough moisturization [14]. Extant evidence indicates a positive association between the severity of eczema symptoms in children and adverse mental health consequences in their parents, such as symptoms of depression and anxiety [15,16], feelings of helplessness [17], and heightened levels of worry, exhaustion, and stress [18,19]. Given the time-consuming and exhausting nature of caring for children with eczema and the resulting adverse mental health outcomes, the quality of life of parents is often immensely impacted [20].

In the context of managing a child diagnosed with eczema, parental self-efficacy has been found to play a crucial role in affecting the mental health and health-related quality of life (HRQoL) of parents. According to Bandura's social cognitive theory, self-confidence is linked to the concept of self-efficacy, which pertains to individuals' beliefs in their abilities to positively influence their health by effectively managing their behavior [21]. This theory implies that for a parent or caregiver, with a higher level of self-efficacy, a greater ability to monitor eczema symptoms and administer eczema treatments for their children would be likely. It is well documented that parents who possess high levels of self-efficacy acquire great perceived confidence in managing their child's health conditions, thereby resulting in better mental health outcomes and HRQoL [22,23].

1.1. Psychological Flexibility and Self-Compassion

A growing body of evidence has examined the potential protective roles of accepting internal experiences in enhancing the psychological adjustment of parents while navigating the illness trajectory of their children with chronic conditions [24]. This emphasis on acceptance has led to the investigation of two therapeutic processes, namely, psychological flexibility and self-compassion, both sharing the common feature of shifting focus away from the specific contents of internal experiences to a person's relationship with these experiences [25]. Indeed, recent studies conducted in general population samples [26], patients with chronic pain [27], and parents [28] have advocated the need to study these two therapeutic constructs together to examine their impacts on mental health and quality of life. Psychological flexibility refers to an individual's capacity to remain connected to the present moment, engage in an open-and-aware cognitive process, and take actions in accordance with their personally held values [29]. Empirical evidence has suggested that individuals who are more psychologically flexible report lower levels of stress, depression [30], anxiety [31], and insomnia [32–34], as well as better overall well-being [35–37]. In the context of caregiving, parental psychological flexibility refers to the acquired ability of parents to effectively adapt and respond to the challenging psychological experiences and demands associated with parenting while simultaneously adhering to appropriate parenting practices that align with their personal values [38]. An increasing number of studies have supported the role of parental psychological flexibility in fostering better mental health outcomes and HRQoL of parents, as well as other health outcomes of their children diagnosed with various chronic conditions, such as autism spectrum disorders [39,40], acquired brain injuries [41], and cerebral palsy [42]. Self-compassion refers to the practice of extending kindness to oneself, recognizing the universality of the human experience, and mindfully acknowledging adverse thoughts and emotions without excessive attachment [43]. Review evidence has shown a significant and negative association between self-compassion and a range of mental health symptoms, including depression [44], anxiety [44], and stress [45]. Self-compassion can also be conceptualized as a set of skills that can be cultivated and strengthened through practical exercises [46]. Parents who possess high self-compassion tend to be more aware of their emotional experiences and warmth, prioritize self-care with kindness and warmth, recognize their difficulties as shared experiences, and consequently protect themselves from poor psychological outcomes [47].

1.2. The Present Study

Both theoretical frameworks and empirical studies consistently highlight the pivotal roles of psychological flexibility and self-compassion in improving the mental health and HRQoL of caregivers dealing with chronic conditions in their children. This body of research underscores the positive impacts of these psychological constructs, ranging from reduced psychological distress to enhanced overall well-being, across various caregiving contexts. However, these roles remain unexplored in families with children diagnosed with eczema. The existing literature is predominantly focused on parental self-efficacy [23,48], leaving a critical gap in our understanding of the unique psychological aspects experienced by parents of children with eczema. Recognizing these relationships is essential for developing eczema management programs that address the distinct psychological challenges encountered by these parents. Additionally, studying mental health symptoms, including anxiety, depression, and stress, alongside HRQoL in this population serves two key purposes. Firstly, it aims to uncover the potential protective roles of psychological flexibility and self-compassion in mitigating the adverse psychological effects commonly associated with chronic caregiving. Secondly, it provides a comprehensive understanding of the overall well-being of these parents, offering valuable insights into their challenges and the factors that can alleviate or exacerbate these challenges. In this study, we aimed to examine whether the two therapeutic processes, namely, psychological flexibility and self-compassion, together with eczema management self-efficacy, were associated with mental health symptoms (anxiety, depression, and stress) and HRQoL in a sample of Hong Kong Chinese parents of young children diagnosed with eczema. Our hypothesis posits that psychological flexibility, self-compassion, and eczema management self-efficacy will all be simultaneously and positively associated with HRQoL and mental health symptoms among parents caring for their children with eczema.

2. Materials and Methods

2.1. Study Procedures

Employing a cross-sectional design, this study utilized baseline assessment data from an ongoing randomized controlled trial investigating the effects of a family acceptance-and-commitment-therapy-based eczema management program (FACT-EMP) on the health outcomes of parent–child dyads affected by eczema, as preregistered at ClinicalTrials.gov (NCT04919330). Between July 2021 and December 2022, participants were consecutively recruited from three pediatric outpatient clinics under the Department of Paediatric and Adolescent Medicine of a regional hospital serving three districts in Hong Kong; these districts serve 16.3% of the Hong Kong population of children under the age of 14 years [49]. All parent–child dyads who attended the outpatient clinics for follow-up assessments and treatments related to eczema care were screened by a trained research assistant to assess eligibility. Written informed consent was obtained from the participants before the screening assessment and the completion of the baseline assessment by using a self-administered questionnaire.

2.2. Participants

Parents were eligible to participate if they were aged 19 or above; self-identified as the primary caregiver of a child aged 6 to 12 years who was diagnosed with eczema by a physician, as documented in the electronic medical records based on the International Classification Diseases-10 codes L20–L30; living together with the target child; able to communicate in Cantonese; and accessible by telephone. Parents were excluded from the study if they had already participated in another intervention study related to pediatric eczema management, if they presented with clinically significant psychiatric morbidity, and/or if their child had significant medical and/or developmental comorbidities. The data were collected during the midst of the COVID-19 pandemic, during which various quarantine and social distancing measures were implemented; hence, the attendance of the study clinics only reached up to 40% of the usual, so it took us more time to complete

the data collection. Throughout the study period, over 2.6 million people (36% of the total population) in Hong Kong were infected with COVID-19. Governmental statistical data further revealed that a substantial proportion, exceeding 60%, of children within the population also contracted the virus [50]. Ethical approval was obtained from the study hospital and the university before the study commencement.

2.3. Measures

Psychological inflexibility. The 7-item Acceptance and Action Questionnaire-II (AAQ-II) was employed to assess psychological inflexibility. Parents were asked to indicate their agreement with a series of statements, such as ‘My painful experiences and memories make it difficult for me to live a life that I would value’, on a 7-point Likert scale ranging from 1 (never true) to 7 (always true) [51]. Higher total scores indicate more psychological inflexibility. The AAQ-II has demonstrated strong internal consistencies ($\alpha = 0.86$ to 0.88) and test–retest reliabilities in Chinese population groups ($r = 0.74$ to 0.86) [52] (Cronbach’s α in this study = 0.88).

Self-compassion. The 26-item Self-Compassion Scale (SCS) was used to assess how often the parents respond to difficult situations about eczema care for their children with self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification [53]. An example statement was ‘When I’m going through a very hard time, I give myself the caring and tenderness I need’. Response options on a 5-point Likert scale ranged from 1 (Almost Never) to 5 (Almost Always), with a higher total score indicating greater self-compassion [53]. The SCS demonstrated good internal consistencies in both Chinese ($\alpha = 0.84$) [54] and Western population groups ($\alpha = 0.66$ to 0.91) [55–57] (Cronbach’s α in this study = 0.85 for the overall SCS, 0.76 to 0.83 for the SCS subscales) [58].

Eczema management self-efficacy. The 29-item Parental Self-Efficacy with Eczema Care Index (PASECI) was used to assess the self-efficacy of parents in managing their child’s eczema, including performing management tasks and managing symptoms [23]. Parents were asked to indicate the degree of perceived competence in completing a range of tasks related to eczema care arising from the following four domains: managing medication (e.g., ‘correctly use steroid creams for your child’), managing eczema and symptoms (e.g., ‘manage to avoid things that irritate/aggravate your child’s eczema’), communicating with healthcare professionals (e.g., ‘tell the GP when your child’s eczema is not getting better’), and managing personal challenges (e.g., ‘without support from my family or friends’). Response options on an 11-point Likert scale ranged from 0 (cannot do at all) to 10 (highly certain can do it). A higher total score indicates greater parental self-efficacy. The PASECI exhibited high internal consistency ($\alpha = 0.97$), test–retest reliabilities (ICC = 0.93 – 0.99), and acceptable convergent validity in both Western and Asian population groups (Cronbach’s α in this study = 0.82 for the overall PASECI, 0.82 to 0.91 for its subscales) [59].

Mental health symptoms. The 21-item Depression Anxiety Stress Scale 21 (DASS-21), a shortened version of the original DASS-42, was utilized to evaluate the symptoms of depression (e.g., ‘I felt that I had nothing to look forward to’), anxiety (e.g., ‘I felt I was close to panic’) and stress (e.g., ‘I found myself getting agitated’) [60]. Parents were asked to indicate the extent to which each statement reflected their experiences in the past week using a 4-point Likert scale, ranging from 0 (does not apply to me at all) to 3 (applies to me very much, or most of the time). Higher scores on each subscale suggest more severe symptoms. The DASS-21 demonstrated good reliabilities of 0.82 , 0.88 , and 0.90 for the depression, anxiety, and stress subscales [60]. The Chinese version of DASS-21 has also been validated among various Chinese population groups [61] (Cronbach’s α in this study = 0.87 for the overall DASS-21, 0.79 to 0.87 for its subscales).

Health-related quality of life. The 28-item Parents’ Index of Quality of Life in Atopic Dermatitis (PIQoL-AD) was employed to assess the six practical aspects of the HRQoL of parents in caring for their children diagnosed with eczema: sleep, daily activities, emotional well-being, family relationships, financial impact, and treatment issues. Parents rated 28 statements in a dichotomous yes/no response format with 0 (No) and 1 (Yes)

(e.g., ‘Looking after him takes a lot of effort’). A high score indicates poor HRQoL. The PIQoL-AD is a standardized measure that possesses good internal consistency ($\alpha = 0.88$) and test–retest reliability ($r = 0.85$) in various population groups [62] (Cronbach’s α in this study = 0.85).

Sociodemographic characteristics. The sociodemographic variables of parents were assessed, including age, gender, marital status, level of education, monthly household income, and occupational and family status. Parents were asked to report their child’s demographics and eczema conditions in the self-administered questionnaire, including age, gender, age of eczema onset, family history of atopy, and healthcare service utilization related to the flare-up of eczema symptoms. Notably, the child’s eczema symptoms were assessed via a parental proxy report using the Patient-Oriented Eczema Measure (POEM) [63]. The 7-item POEM is a brief questionnaire inquiring about the number of days that the child experienced eczema-related symptoms in the past week using a 5-point Likert scale, ranging from 0 (no days) to 4 (every day). A higher score indicates more severe symptoms. The POEM is a 7-item questionnaire inquiring about eczema-specific symptoms in the preceding week; each item is scored 0–4, for a total score of 0–28 [63]. A decrease in the POEM score indicates a reduction (improvement) in the frequency of symptoms of eczema. The POEM score is one of the key patient-reported outcomes (PROs) in eczema-related clinical trials [64].

2.4. Data Analyses

The normality of continuous variables was assessed by examining skewness statistics and normal probability plots. Following the suggestion by Muthen and Kaplan [65], skewness and kurtosis values within the range of -1 to $+1$ were considered acceptable indicators of normality. The sociodemographic and clinical characteristics of parents and their children diagnosed with eczema are presented using descriptive statistics, including means, standard deviations, and frequencies. Our study aimed to investigate the impact of three independent variables, namely, psychological inflexibility, self-compassion, and self-efficacy, on specific parental outcomes, including symptoms of anxiety, depression, stress, and HRQoL. We employed hierarchical regression models for our analysis. In the initial block of these models, we incorporated covariates that had shown significant associations with the dependent variables. Subsequently, in the second block, we introduced psychological flexibility, self-compassion, and eczema management self-efficacy as predictors in the second block. To identify appropriate covariates for inclusion in the regression models, we conducted a series of statistical tests. For continuous potential covariates, we performed Pearson correlation analysis to evaluate their relationships with the dependent variables. For potential bivariate covariates, independent-sample *t*-tests were employed to assess their associations with the dependent variables. Furthermore, for potential categorical covariates with three or more levels, we used ANOVA tests to examine their relationships with the dependent variables. Variables that exhibited significant associations with each parental outcome were included as covariates in the first block of two-block hierarchical regression models. To assess multicollinearity, we examined variance inflation factor statistics. All statistical analyses were performed using IBM SPSS version 26.0 (IBM Corp., Armonk, NY, USA). All statistical tests were two-sided, and the significance level was set at 0.05.

3. Results

3.1. Characteristics of the Participants

Table 1 displays the sociodemographic and clinical characteristics of the parents and their children diagnosed with eczema ($N = 110$). The Kolmogorov–Smirnov test (P s ranged from 0.200 to 0.241) and Shapiro–Wilk test (P s ranged from 0.106 to 0.119) for parental outcomes were non-significant. The skewness and kurtosis values of these parental outcome variables fell within the range of -0.30 to 0.87 , indicating the acceptable normality of the data. The mean (SD) age of the parents was 41.9 (8.3) years, with most being mothers (75.5%) and full-time housewives (50.0%). Moreover, over 90% of the parents had obtained at least

a secondary level of school education. The mean (SD) age of the children was 8.2 (2.4) years, and 66.4% of them were boys. The sampled children were diagnosed with eczema at a mean age of 23.1 months. The mean (SD) score of the POEM was 11.0 (7.3), with half of the children experiencing itchiness every day and over 15% having their sleep affected by eczema symptoms and experiencing scratching until bleeding. Additionally, over one-fifth of the sampled children had attended unscheduled general outpatient visits due to eczema exacerbations over the past 12 months, while less than 4% required hospitalization. The possible range, mean (SD), and score distribution for each parental measure are displayed in Table A1, indicating that nearly 20% of the parents experienced at least mild levels of depression, anxiety, and stress symptoms.

Table 1. Characteristics of the parents and their children diagnosed with eczema.

Variables	n (%)
Characteristics of parents	
Age (years), mean (SD)	41.9 (8.32)
Relationship with child	
Father	17 (15.5)
Mother	83 (75.5)
Grandparents	10 (9.0)
Marital status	
Single/divorced/widowed	16 (14.5)
Married	94 (85.5)
Education attainment ¹	
Primary education or below	8 (7.3)
Secondary education	61 (57.0)
Tertiary education or above	38 (35.5)
Monthly household income (HKD) ¹	
Comprehensive Social Security Assistance	3 (2.7)
<10,000	10 (9.1)
10,000–40,000	64 (58.2)
40,001–60,000	18 (16.4)
>60,000	12 (10.9)
Occupation ¹	
Housewife	56 (50.9)
Manager	7 (6.4)
Professional	9 (8.2)
Clerk	11 (10.0)
Service and Sales	5 (4.5)
Others ²	16 (14.5)
Unemployed	2 (1.8)
Family status	
Nuclear family	68 (61.8)
Single family	8 (7.3)
Extended family	30 (27.3)
Others	4 (3.6)
Personal history of atopy ³	
Yes	58 (52.7)
No	52 (47.3)
Family history of atopy ³	
Yes	75 (68.2)
No	35 (31.8)
Characteristics of children	
Age (years), mean (SD)	8.23 (2.42)
Gender	
Male	73 (66.4)
Female	37 (33.6)
Age at eczema onset (months), mean (SD)	23.13 (20.2)

Table 1. Cont.

Variables	n (%)
Eczema severity by POEM, mean (SD), possible range = 0–28	11.0 (7.3)
Unscheduled general outpatient visits due to eczema exacerbations over the past 12 months	
None	83 (75.5)
1–2 visits	19 (17.3)
3–4 visits	4 (3.6)
≥5 visits	4 (3.6)
Unscheduled private practitioner’s clinic visits due to eczema exacerbations over the past 12 months	
None	87 (79.1)
1–2 visits	14 (12.7)
3–4 visits	2 (1.8)
≥5 visits	7 (6.4)
Emergency care visits due to eczema exacerbations over the past 12 months	
None	106 (96.4)
1 visit	4 (3.6)
Hospitalization due to eczema exacerbations over the past 12 months	
None	106 (96.4)
1 visit	4 (3.6)

Note. *n* = total number of subjects; HKD = Hong Kong Dollars (1 USD = 7.8 HKD); POEM = Patient-Oriented Eczema Measure. ¹ Missing values < 5%. ² Other occupations include security guards, civil servants, nurses, clinic assistants, and freelancers. ³ History of atopy encompasses conditions including asthma, allergic rhinitis, hay fever, or food allergies.

3.2. Univariate Analyses and Hierarchical Regression Analyses

The univariate association analyses (i.e., correlation analyses, independent t-tests, and ANOVAs) between the sociodemographic and clinical characteristics of parent–child dyads and parental outcomes (i.e., HRQoL and mental health symptoms) are shown in Table A2. Educational level ($P = 0.035$ for the PIQoL-AD total score), family status ($P = 0.032$ for the PIQoL-AD total score; $P = 0.034$ for the DASS-21 Anxiety score), family history of atopy ($P = 0.004$ for the DASS-21 Anxiety score; $P = 0.004$ for the DASS-21 total score), and eczema severity indicated by the POEM score ($r = 0.37$, $P \leq 0.001$ for the PIQoL-AD total score; $r = 0.19$, $P = 0.042$ for the DASS-21 Anxiety score) were found to be significantly associated with the corresponding parental outcomes, and they serve as the covariates in the hierarchical regression models.

Table 2 presents the results of the hierarchical regression analyses examining the roles of parental psychological flexibility, self-compassion, and self-efficacy in affecting mental health and quality of life. The models examining HRQoL ($\chi^2 (7) = 14.47$, $P < 0.001$), symptoms of depression ($\chi^2 (3) = 35.10$, $P < 0.001$), anxiety ($\chi^2 (6) = 14.01$, $P < 0.001$), stress ($\chi^2 (3) = 30.55$, $P < 0.001$), and overall mental health symptoms ($\chi^2 (4) = 29.36$, $P < 0.001$) yielded statistically significant results. In the model assessing HRQoL as the outcome, parental education level, family status, POEM score, and general outpatient visits accounted for 17% of the variance in Step 1. In Step 2, psychological inflexibility, as measured by the AAQ-II (standardized beta coefficient, β , = 0.62, $P < 0.001$), significantly improved the model, contributing an additional 34% of the variance increase ($P < 0.001$). The final model explained 51% of the variance. For the model assessing symptoms of depression, psychological inflexibility ($\beta = 0.35$, $P < 0.001$), self-compassion ($\beta = -0.39$, $P < 0.001$), and eczema management self-efficacy ($\beta = -0.16$, $P = 0.029$) collectively accounted for 50% of the variance in the regression model. Psychological inflexibility (β ranged from 0.25 to 0.39, P ranged from <0.001 to 0.008) and self-compassion (β ranged from -0.39 to -0.38 , all P s ≤ 0.001) remained significant factors in the models assessing symptoms of anxiety, stress, and overall mental health symptoms, explaining at least 35% of the variance increase (all P s ≤ 0.001). The final models accounted for total variances ranging from 45% to 53%.

Table 2. Hierarchical regression analyses examining the roles of parental psychological flexibility, self-compassion, and self-efficacy in affecting mental health and quality of life.

	PIQoL-AD Total Score ¹				DASS-21 Depression				DASS-21 Anxiety ²				DASS-21 Stress				DASS-21 Total Score ³			
	B	SE	β	<i>p</i>	B	SE	β	<i>p</i>	B	SE	β	<i>p</i>	B	SE	β	<i>p</i>	B	SE	β	<i>p</i>
Constant	9.01	2.99	-	0.003	12.50	2.42	-	<0.001	7.52	2.26	-	0.001	14.07	3.19	-	<0.001	33.75	6.97	-	<0.001
Block 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	$R^2 = 0.17$								$R^2 = 0.10$								$R^2 = 0.03$			
Block 2 ⁴																				
AAQ-II	0.36	0.06	0.62	<0.001	0.13	0.03	0.35	<0.001	0.06	0.02	0.25	0.008	0.17	0.04	0.37	<0.001	0.41	0.09	0.39	<0.001
SCS	0.11	0.17	0.06	0.525	-0.43	0.10	-0.39	<0.001	-0.12	0.02	-0.38	<0.001	-0.55	0.13	-0.39	<0.001	-1.25	0.28	-0.38	<0.001
PASECI	-0.02	0.01	-0.11	0.168	-0.01	0.01	-0.16	0.029	-0.01	0.06	-0.13	0.106	-0.01	0.01	-0.04	0.615	-0.03	0.02	-0.11	0.122
	Total $R^2 = 0.51$				Total $R^2 = 0.50$				Total $R^2 = 0.45$				Total $R^2 = 0.46$				Total $R^2 = 0.53$			
	($\Delta R^2 = 0.34, p < 0.001$)								($\Delta R^2 = 0.35, p < 0.001$)								($\Delta R^2 = 0.50, p < 0.001$)			

Note. PIQoL-AD = Parent's Index of Quality of Life in Atopic Dermatitis; DASS-21 = Depression Anxiety Stress Scale-21; SCS = Self-Compassion Scale; PASECI = Parental Self-Efficacy with Eczema Care Index; AAQ-II = Acceptance and Action Questionnaire-II; B = unstandardized beta coefficients; SE = standard error; β = standardized beta coefficients; *p* = *p*-value; ΔR^2 = R-Square change. ¹ For PIQoL-AD total score, parental education level, family status, POEM score, and general outpatient visits were included in Block 1. ² For DASS-21 Anxiety, family status, family history of atopy, and POEM score were included in Block 1. ³ For DASS-21 total score, family history of atopy was included in Block 1. ⁴ Stepwise selection of the predictors that were significantly associated with quality of life and depression, anxiety, and stress levels of parents.

4. Discussion

The present study investigated the roles of psychological flexibility, self-compassion, and eczema management self-efficacy on HRQoL and mental health symptoms among a sample of parents of children diagnosed with eczema in Hong Kong. Our hypotheses were partially supported, as indicated by the results of adjusted hierarchical regression analyses. When all three factors (psychological flexibility, self-compassion, and eczema management self-efficacy) were included as simultaneous predictors, psychological flexibility emerged as the only factor associated with all parental outcomes, including HRQoL and symptoms of depression, anxiety, and stress. Self-compassion showed associations with all measured mental health symptoms but did not significantly relate to HRQoL. On the other hand, eczema management self-efficacy was associated solely with symptoms of depression and did not show significant associations with other parental outcomes.

The significant impact of parental psychological flexibility, as measured by the level of inflexibility using the AAQ-II scale, on both HRQoL and the mental health outcomes of parents caring for children with eczema aligns with findings from prior studies. These studies consistently demonstrate that parents who exhibit greater psychological flexibility tend to have better mental health and enhanced caregiving capabilities when caring for their children experiencing various types of medical health conditions, including asthma [66], chronic pain with significant pain-related disabilities [67], and cancer or life-saving cardiac surgeries [68]. Notably, our research team has been actively investigating the potential role of parental psychological flexibility since 2017, particularly in relation to the mental health of parents and the asthma symptoms of their children [66,69]. This was further supported by our 2019 clinical trial that focused on an acceptance-and-commitment-therapy-based pediatric asthma management program for parents, which aimed to foster psychological flexibility in parents for improving their mental health and asthma care [70]. Building upon these previous findings, the present study expands the current understanding by demonstrating the positive influence of parental psychological flexibility in families of children diagnosed with eczema. Importantly, it should be acknowledged that there are plausible biological pathways that have been elucidated, highlighting eczema as the initial stage in an atopic march, which can ultimately progress to asthma [71]. This is also supported by the shared immune dysregulation and inflammatory mechanisms observed in both conditions [72]. Considering the similarities between asthma and eczema, the present study expands our understanding that parental psychological flexibility is valuable not only for families of children with disabilities but also for those affected by other common chronic inflammatory conditions in children, such as asthma, eczema, and chronic pain.

It has a significant impact on parents' mental health and overall quality of life and also influences the well-being of their children.

Similar to psychological flexibility, parents with high levels of self-compassion also demonstrated lower levels of symptoms related to depression, anxiety, and stress. This finding aligns with existing research that consistently supports the beneficial role of self-compassion in parental mental health [47]. Studies focusing on parental caregiving consistently indicate that parents who cultivate higher levels of self-compassion experience reduced levels of parenting stress, guilt, shame, and self-criticism [73] while concurrently reporting greater levels of parenting satisfaction, competence, and overall well-being [47,73]. Our study further contributes to this understanding by highlighting the significance of self-compassion in the mental health of parents of children with eczema. This suggests that, alongside psychological flexibility, self-compassion may serve as another valuable resource for parents facing challenges and stressors associated with raising children with chronic inflammatory conditions. Self-compassion, characterized by emotional awareness and self-kindness during difficult times (e.g., a child's emotional outburst during eczema exacerbations requiring immediate medical attention), primarily focuses on promoting emotional well-being and reducing self-criticism [45]. In contrast, psychological flexibility, encompassing acceptance, present-moment awareness, and adaptive coping strategies and behaviors, enables parents to manage practical aspects of caregiving (e.g., managing childhood eczema symptoms), engage in problem solving, and persevere through difficulties [36]. Hence, our findings reveal that parental psychological flexibility exerts a comprehensive influence on both the mental health outcomes and objective indicators of quality of life concerning childhood eczema care, while self-compassion primarily contributes to parents' mental health outcomes.

The non-significant effect of self-efficacy on the mental health and HRQoL of parents in the context of caring for children with eczema, when included as a predictor alongside psychological flexibility and self-compassion, may be attributed to several plausible reasons. Firstly, psychological flexibility and self-compassion encompass aspects related to coping strategies, emotional well-being, and adaptive responses, which may overlap with the concept of self-efficacy to some extent [74,75]. Consequently, including self-efficacy alongside these constructs may result in redundancy, reducing its unique contribution to the measured outcomes. Secondly, it is plausible that self-efficacy operates through mediating or moderating pathways rather than having a direct impact on mental health and HRQoL outcomes. For instance, parents with high self-efficacy in pediatric eczema care may perceive failures (e.g., experimenting with different treatment approaches for their child but failing to yield the desired results) as opportunities for growth, fostering self-forgiveness and forgiveness toward others. This mindset aligns with the core components of self-compassion and may lead to improved mental health outcomes and HRQoL. Simultaneously, self-efficacy facilitates more psychological flexibility in parents by encouraging them to explore new coping strategies, seek assistance, and avoid rigid patterns in eczema care. These processes of psychological flexibility, in turn, may contribute to enhanced well-being and quality of life for parents. It is important to acknowledge that self-efficacy does not operate in isolation [76] but potentially interacts with other factors, such as psychological flexibility and self-compassion. Exploring the interplay of these constructs in the context of pediatric eczema management is an area worthy of future investigation.

Several limitations of this study should be acknowledged. Firstly, the study was conducted at a single center, specifically a regional hospital in Hong Kong, during the challenging period of the COVID-19 pandemic. This reduced the generalizability of the findings, as the severity of the children's eczema symptoms and the mental health symptoms of their parents could have been influenced by the pandemic. However, it is worth noting that the sociodemographic characteristics of the sampled children in our study, such as the gender distribution (over 60% were boys), age of eczema diagnosis (at the age of 2 years), and proportion of children affected by eczema symptoms (over 15% experienced chronic symptoms, such as difficulty sleeping), were similar to those observed in a recent lo-

cal population-based ISSAC study that examined the prevalence of allergic diseases among primary and secondary schoolchildren in Hong Kong [3]. Secondly, this study used AAQ-II to assess psychological inflexibility, in which higher scores indicate that the person is more psychologically inflexible. While the AAQ-II is widely employed to assess psychological flexibility, it has been recently critiqued for its inability to adequately differentiate between responses to experiences and the experiences themselves [29]. This confounding factor may artificially inflate the correlations between the AAQ-II and measures of psychological distress (i.e., DASS-21, as used in this study), as it fails to capture the context in which flexibility is most relevant—the pursuit of valued goals [77]. For future studies, the use of an analysis of subscales (if present) within alternative measures, such as the Personalized Psychological Flexibility Index (PPFI) [78], the Comprehensive Assessment of Acceptance and Commitment Therapy Processes Short-Form (CompACT-10) [79], and the Psy-Flex [80], may allow for a more in-depth analysis of the six processes of psychological flexibility on the parental outcomes. Thirdly, the sample size of fathers ($n = 17$, 15% of sampled parents) in the study was relatively small. This phenomenon is commonly seen in studies of children with eczema [81–83], as mothers are often more involved in children’s affairs than fathers, particularly in Hong Kong, where traditional gender roles designate mothers as primary caregivers [84]. However, this imbalance poses limitations, impairing the ability to conduct a subgroup analysis to evaluate potential differences between fathers and mothers regarding psychological flexibility and self-compassion. Future studies should therefore strive to include a larger sample of fathers to further explore the generalizability of the study findings to fathers. Fourthly, it is noteworthy that less than 4% of the children in our study required emergency medical attention and hospitalization due to severe eczema exacerbations. This suggests that our findings may be applicable to families with children experiencing mild levels of eczema symptoms. To enhance the generalizability of our results, future studies could consider expanding recruitment settings from outpatient clinics to inpatient settings, such as pediatric wards, where more severe cases are often hospitalized. Finally, the cross-sectional design of the study did not allow the investigation of the causal relationships between the study variables or constructs. Future research should employ longitudinal designs with follow-up periods. This extended timeframe would not only enable the examination of the causal relationships between these variables but also facilitate mediation analyses to explore how self-efficacy, psychological flexibility, and self-compassion may individually or collectively mediate the relationships between each other and our targeted outcomes. Additionally, considering the impact of seasonal variations on children’s eczema symptoms, as measured by the POEM score, could provide a more comprehensive understanding of the dynamics at play. Such analyses would contribute significantly to uncovering the underlying mechanisms and pathways through which these psychological factors influence parental well-being in the context of caring for children with eczema.

5. Study Implications and Conclusions

Parents caring for children diagnosed with eczema often experience poor mental health outcomes and a diminished quality of life, particularly during eczema exacerbations, necessitating consistent skincare routines and trigger avoidance. These findings have crucial implications for clinical practice and research, emphasizing the need to understand, assess, and leverage potential adaptive mechanisms like self-compassion and psychological flexibility to enhance the psychological well-being and quality of life of these parents. In clinical practice, while medical assessments traditionally concentrate on visually evaluating the child’s skin condition, our results stress the importance of evaluating eczema’s impact on family caregivers, including their quality of life and mental well-being. Recognizing signs of caregiver distress and providing appropriate support should be an integral component of healthcare providers’ training for pediatric eczema care. From a research perspective, our study underscores the significance of addressing caregiver well-being by targeting two malleable factors: psychological flexibility and self-compassion. These factors share com-

mon prerequisites, such as fostering self-compassion and developing perspective-taking skills. An expanding body of evidence demonstrates the potential advantages of integrating self-compassion into acceptance and commitment therapy (ACT) or combining ACT with compassion-focused therapy [85]. Building upon these insights, future investigations should explore the feasibility and preliminary effectiveness of merging ACT, which focuses on psychological flexibility, with interventions promoting self-compassion in improving the health outcomes of both parents and their children with eczema. In conclusion, this study sheds light on the intricate relationship between parental psychological flexibility, self-compassion, and the mental health and quality of life outcomes of parents caring for children with eczema. Our findings underscore the need for a holistic approach in clinical practice, recognizing the substantial impact of eczema on family caregivers.

Author Contributions: Conceptualization, Y.Y.C.; methodology, Y.Y.C.; validation, J.Y.M.K. and P.T.Y.; formal analysis, Y.Y.C., J.Y.M.K. and P.T.Y.; investigation, Y.Y.C. and J.Y.M.K.; data curation, J.Y.M.K.; writing—original draft preparation, J.Y.M.K. and P.T.Y.; writing—review and editing, Y.Y.C.; supervision, Y.Y.C., H.Y.C. and W.T.C.; project administration, P.T.Y.; funding acquisition, Y.Y.C., H.Y.C. and W.T.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Nethersole Institute of Continuing Holistic Health Education (NICHE) Research Grant, Alice Ho Miu Ling Nethersole Charity Foundation (Grant no: RG2019/2020_A_7), and the Research Matching Grant Scheme (RMGS), University Grants Committee.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Joint Chinese University of Hong Kong–New Territories East Cluster Clinical Research Ethics Committee (Ethics no: 2019.589) and New Territories West Cluster Clinical Research Ethics Committee (Ref no: NTWC/REC/19120).

Informed Consent Statement: Informed consent was obtained from all participants involved in the study.

Data Availability Statement: The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available in a permanent third-party archive; requests for the data or material can be sent via email to the lead author at conniechong@cuhk.edu.hk.

Acknowledgments: We thank all the participants for their precious time in participating in the study during the COVID-19 pandemic. We also thank Kai Chow Choi from the Nethersole School of Nursing, for his valuable advice on statistical analysis.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Parent measures.

	Possible Range	Mean (SD)	n (%)
Psychological inflexibility (AAQ-II)			
Total score	7–49	16.2 (9.48)	-
Self-compassion (SCS)			
Total score	6–30	21.0 (3.06)	-
Self-kindness	1–5	3.17 (0.86)	-
Self-judgment	1–5	3.85 (0.78)	-
Common humanity	1–5	3.21 (0.95)	-
Isolation	1–5	3.76 (0.82)	-
Mindfulness	1–5	3.40 (0.95)	-
Over-identification	1–5	3.58 (0.89)	-
Eczema management self-efficacy (PASECI)			
Total score	0–290	217.70 (40.0)	-
Managing medication	0–60	44.45 (11.03)	-
Managing eczema and symptoms	0–60	43.87 (9.71)	-
Communicating with healthcare professionals	0–70	55.80 (11.48)	-
Managing personal challenges	0–100	73.57 (17.71)	-

Table A1. Cont.

	Possible Range	Mean (SD)	<i>n</i> (%)
Mental health symptoms (DASS-21)			
Total score	0–63	9.43 (8.09)	-
Depression	0–21	2.51 (3.42)	-
Normal, <i>n</i> (%)	0–4	-	86 (78.2)
Mild, <i>n</i> (%)	5–6	-	13 (11.8)
Moderate, <i>n</i> (%)	7–10	-	8 (7.3)
Severe, <i>n</i> (%)	11–13	-	1 (0.9)
Extremely severe, <i>n</i> (%)	≥14	-	2 (1.8)
Anxiety	0–21	2.56 (3.00)	-
Normal, <i>n</i> (%)	0–3	-	89 (80.9)
Mild, <i>n</i> (%)	4–5	-	3 (2.7)
Moderate, <i>n</i> (%)	6–7	-	7 (6.4)
Severe, <i>n</i> (%)	8–9	-	7 (6.4)
Extremely severe, <i>n</i> (%)	≥10	-	4 (3.6)
Stress	0–21	4.35 (4.37)	-
Normal, <i>n</i> (%)	0–7	-	88 (80.0)
Mild, <i>n</i> (%)	8–9	-	10 (9.1)
Moderate, <i>n</i> (%)	10–12	-	4 (3.6)
Severe, <i>n</i> (%)	13–16	-	7 (6.4)
Extremely severe, <i>n</i> (%)	≥17	-	1 (0.9)
Quality of life (PIQoL-AD)			
Total score	0–28	6.99 (5.53)	-

Note. AAQ-II = Acceptance and Action Questionnaire-II; DASS-21 = Depression Anxiety Stress Scale-21; *n* = number of participants; PASECI = Parental Self-Efficacy with Eczema Care Index; PIQoL-AD = Parent's Index of Quality of Life in Atopic Dermatitis; SCS = Self-Compassion Scale.

Table A2. Univariate association analyses between characteristics of the parent–child dyads and parental measures.

Characteristics	PIQoL-AD Total Score		DASS-21 Depression		DASS-21 Anxiety		DASS-21 Stress		DASS-21 Total Score	
	Mean (SD)/r	<i>p</i>	Mean (SD)/r	<i>p</i>	Mean (SD)/r	<i>p</i>	Mean (SD)/r	<i>p</i>	Mean (SD)/r	<i>p</i>
Parents' characteristics										
Age (years)	0.023	0.742	−0.034	0.647	−0.051	0.489	−0.039	0.585	−0.046	0.510
Relationship with child		0.492		0.609		0.848		0.384		0.543
Father	6.2(4.8)		2.2 (3.1)		2.5 (2.3)		3.6 (3.7)		8.3 (8.5)	
Mother	7.3 (5.8)		2.7 (3.5)		2.7 (3.2)		4.6 (4.5)		9.9 (10.5)	
Marital Status		0.280		0.159		0.370		0.608		0.334
Single/divorced/widowed	8.7 (6.9)		3.6 (5.2)		3.2 (3.7)		4.9 (5.1)		11.7(13.1)	
Married	6.8 (5.3)		2.3 (3.0)		2.5 (2.9)		4.3 (4.3)		9.0 (9.5)	
Education attainment ¹		0.035		0.445		0.448		0.096		0.221
Primary education or below	11.6 (5.0)		3.9 (3.4)		3.6 (3.8)		7.0 (4.5)		14.6 (11.6)	
Secondary education	6.3 (5.1)		2.3 (3.1)		2.3 (3.0)		3.7 (4.0)		8.3(9.4)	
Tertiary education or above	7.4 (6.0)		2.7 (4.0)		2.7 (2.9)		4.9 (4.8)		10.2 (10.8)	
Monthly household income (HKD) ¹		0.603		0.250		0.994		0.731		0.732
Comprehensive Social Security Assistance	12.0 (6.2)		6.7 (11.5)		3.3 (4.0)		6.7 (8.1)		16.7 (23.7)	
<10,000	7.5 (6.7)		1.7 (3.5)		2.5 (4.3)		3.1 (5.4)		7.3 (12.6)	
10,000–40,000	7.0 (5.7)		2.6 (2.7)		2.6 (2.8)		4.3 (3.9)		9.4 (8.8)	
40,001–60,000	6.3 (5.0)		2.6 (4.2)		2.6 (3.8)		5.0 (5.7)		10.2 (13.2)	
>60,000	6.9 (5.1)		1.8(2.2)		2.4 (1.3)		4.8 (3.2)		9.0 (5.9)	
Occupation ¹		0.778		0.718		0.708		0.733		0.739
Housewife	7.8 (6.3)		2.8 (3.7)		2.6 (3.4)		4.4 (4.6)		9.8 (10.8)	
Manager	5.6 (3.8)		0.9 (1.1)		1.7 (1.6)		1.4 (1.5)		4.0 (3.6)	
Professional	6.3 (5.2)		3.0 (3.6)		3.7 (2.8)		5.6 (4.5)		12.2 (10.5)	
Clerk	7.5 (5.4)		1.6 (1.6)		2.0 (2.1)		4.4 (3.9)		8.0 (6.6)	
Service and Sales	5.8 (5.4)		2.6 (4.2)		2.2 (3.3)		4.4 (5.7)		9.2 (13.0)	
Others ²	5.7 (4.1)		2.6 (4.0)		3.0 (3.0)		4.9 (4.9)		10.5 (11.3)	
Unemployed	3.5 (3.5)		2.5 (3.5)		2.0 (1.4)		3.5 (2.1)		8.0 (7.0)	
Family status ¹		0.032		0.065		0.034		0.182		0.057
Nuclear family	7.3 (5.5)		2.6 (3.2)		2.8 (3.0)		4.6 (4.5)		10.1 (10.1)	
Single family	11.9 (7.4)		5.5 (6.7)		4.9 (4.5)		7.0 (6.3)		17.4 (16.1)	
Extended family	5.2 (4.3)		1.7 (2.3)		1.6 (2.1)		3.3 (3.3)		6.6 (7.1)	
Others	5.3 (5.9)		1.3 (1.5)		1.0 (1.7)		2.3 (2.1)		4.7 (4.5)	
Personal history of atopy		0.261		0.255		0.108		0.170		0.145
Yes	6.4 (4.9)		2.1 (3.5)		2.1 (2.8)		3.8 (4.0)		7.9 (9.5)	
No	7.6 (6.0)		2.9 (3.4)		3.0 (3.1)		4.9 (4.6)		10.8 (10.5)	
Family history of atopy		0.343		0.237		0.004		0.097		0.034
Yes	6.3 (5.1)		1.9 (2.6)		1.6 (1.9)		3.3 (3.4)		6.9 (7.1)	
No	7.3 (5.7)		2.8 (3.7)		3.0 (3.3)		4.8 (4.7)		10.6 (11.1)	

Table A2. Cont.

Characteristics	PIQoL-AD Total Score		DASS-21 Depression		DASS-21 Anxiety		DASS-21 Stress		DASS-21 Total Score	
	Mean (SD)/ <i>r</i>	<i>p</i>	Mean (SD)/ <i>r</i>	<i>p</i>	Mean (SD)/ <i>r</i>	<i>p</i>	Mean (SD)/ <i>r</i>	<i>p</i>	Mean (SD)/ <i>r</i>	<i>p</i>
Child's characteristics										
Age (years)	−0.066	0.342	−0.059	0.414	−0.006	0.934	−0.075	0.286	−0.064	0.351
Gender		0.884		0.819		0.556		0.642		0.765
Male	7.0 (5.4)		2.5 (2.8)		2.7 (2.9)		4.5 (3.9)		9.7 (8.9)	
Female	6.9 (5.6)		2.6 (4.4)		2.3 (3.2)		4.1 (5.1)		9.0 (12.1)	
Age at eczema onset (months)	−0.094	0.196	−0.026	0.733	−0.026	0.728	−0.059	0.424	−0.046	0.524
Eczema severity by POEM	0.367	<0.001	0.080	0.406	0.194	0.042	0.120	0.213	0.137	0.154
General outpatient visits due to eczema exacerbations over the past 12 months		0.009		0.573		0.520		0.857		0.939
None	6.2 (5.1)		2.6 (3.6)		2.5 (2.9)		4.4 (4.5)		9.5 (10.4)	
≥1	9.4 (6.1)		2.2 (3.0)		2.9 (3.4)		4.2 (3.9)		9.3 (9.5)	
Private practitioner's clinic visits due to eczema exacerbations over the past 12 months		0.761		0.120		0.940		0.306		0.320
None	6.9 (5.7)		2.8 (3.6)		2.6 (3.1)		4.6 (4.6)		9.9 (10.7)	
≥1	7.3 (5.1)		1.5 (2.5)		2.5 (2.8)		3.5 (3.2)		7.6 (7.5)	
Emergency care visits due to eczema exacerbations over the past 12 months, median (interquartile range)		0.370		0.256		0.851		0.658		0.987
None	5 (3–10)		1 (0–4)		2 (0–3)		3 (1–7)		6 (2–13)	
≥1	11 (2.8–15.5)		0 (0–3.8)		1.5 (0–6)		4.5 (1.8–6.5)		6 (1.8–16.3)	
Hospitalization due to eczema exacerbations over the past 12 months, median (interquartile range)		0.370		0.256		0.851		0.658		0.987
None	5 (3–10)		1 (0–4)		2 (0–3)		3 (1–7)		6 (2–13)	
≥1	11 (2.8–15.5)		0 (0–3.8)		1.5 (0–6)		4.5 (1.8–6.5)		6 (1.8–16.3)	

Note. DASS-21 = The 21-item Depression Anxiety Stress Scale-21; PIQoL-AD = The 28-item Parent's Index of Quality of Life in Atopic Dermatitis; POEM = Patient-Oriented Eczema Measure; *SD* = standard deviation; *p* = *p*-value; *r* = Pearson correlation coefficient. ¹ Missing value < 5%. ² Other job occupations include security guards, civil servants, nurses, clinic assistants, and freelancers.

References

- Weidinger, S.; Beck, L.A.; Bieber, T.; Kabashima, K.; Irvine, A.D. Atopic dermatitis. *Nat. Rev. Dis. Primers* **2018**, *4*, 1. [CrossRef] [PubMed]
- Langan, S.M.; Mulick, A.R.; Rutter, C.E.; Silverwood, R.J.; Asher, I.; García-Marcos, L.; Ellwood, E.; Bissell, K.; Chiang, C.-Y.; Sony, A.E.; et al. Trends in eczema prevalence in children and adolescents: A Global Asthma Network Phase I Study. *Clin. Exp. Allergy* **2023**, *53*, 337–352. [CrossRef]
- The University of Hong Kong. Survey Findings on Prevalence of Allergic Diseases among Hong Kong Primary and Secondary Schoolchildren. Available online: https://www.hku.hk/press/news_detail_23934.html#:~:text=%2D%20In%20the%20current%20study%2C%20the,allergic%20rhinitis%20have%20largely%20increased (accessed on 20 September 2023).
- Reid, P.; Lewis-Jones, M.S. Sleep difficulties and their management in preschoolers with atopic eczema. *Clin. Exp. Dermatol.* **1995**, *20*, 38–41. [CrossRef] [PubMed]
- Beattie, P.E.; Lewis-Jones, M.S. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. *Br. J. Dermatol.* **2006**, *155*, 145–151. [CrossRef]
- Reuveni, H.; Chapnick, G.; Tal, A.; Tarasiuk, A. Sleep fragmentation in children with atopic dermatitis. *Arch. Pediatr. Adolesc. Med.* **1999**, *153*, 249–253. [CrossRef]
- Chng, S.Y.; Goh, D.Y.T.; Wang, X.S.; Tan, T.N.; Ong, N.B.H. Snoring and atopic disease: A strong association. *Pediatr. Pulmonol.* **2004**, *38*, 210–216. [CrossRef]
- Stores, G.; Burrows, A.; Crawford, C. Physiological sleep disturbance in children with atopic dermatitis: A case control study. *Pediatr. Dermatol.* **1998**, *15*, 264–268. [CrossRef]
- Magin, P.; Adams, J.; Heading, G.; Pond, D.; Smith, W. Experiences of appearance-related teasing and bullying in skin diseases and their psychological sequelae: Results of a qualitative study. *Scand. J. Caring Sci.* **2008**, *22*, 430–436. [CrossRef]
- Datta, D.; Sarkar, R.; Podder, I. Parental stress and quality of life in chronic childhood dermatoses: A review. *J. Clin. Aesthet. Dermatol.* **2021**, *14*, S19–S23.
- Cheung, W.K.H.; Lee, R.L.T. Children and adolescents living with atopic eczema: An interpretive phenomenological study with Chinese mothers. *J. Adv. Nurs.* **2012**, *68*, 2247–2255. [CrossRef]
- Ohya, Y.; Williams, H.; Steptoe, A.; Saito, H.; Iikura, Y.; Anderson, R.; Akasawa, A. Psychosocial factors and adherence to treatment advice in childhood atopic dermatitis. *J. Invest. Dermatol.* **2001**, *117*, 852–857. [CrossRef]
- Lawson, V.; Lewis-Jones, M.S.; Finlay, A.Y.; Reid, P.; Owens, R.G. The family impact of childhood atopic dermatitis: The Dermatitis Family Impact Questionnaire. *Br. J. Dermatol.* **1998**, *138*, 107–113. [CrossRef] [PubMed]
- Faught, J.; Bierl, C.; Barton, B.; Kemp, A. Stress in mothers of young children with eczema. *Arch. Dis. Child.* **2007**, *92*, 683–686. [CrossRef] [PubMed]
- Kobusiewicz, A.K.; Tarkowski, B.; Kaszuba, A.; Lesiak, A.; Narbutt, J.; Zalewska-Janowska, A. The relationship between atopic dermatitis and atopic itch in children and the psychosocial functioning of their mothers: A cross-sectional study. *Front. Med.* **2023**, *10*, 1066495. [CrossRef] [PubMed]
- Pauli-Pott, U.; Darui, A.; Beckmann, D. Infants with atopic dermatitis: Maternal hopelessness, child-rearing attitudes and perceived infant temperament. *Psychother. Psychosom.* **1999**, *68*, 39–45. [CrossRef]
- Lewis-Jones, S. Quality of life and childhood atopic dermatitis: The misery of living with childhood eczema. *Int. J. Clin. Pract.* **2006**, *60*, 984–992. [CrossRef]
- Moore, K.; David, T.J.; Murray, C.S.; Child, F.; Arkwright, P.D. Effect of childhood eczema and asthma on parental sleep and well-being: A prospective comparative study. *Br. J. Dermatol.* **2006**, *154*, 514–518. [CrossRef]
- Sarkar, R.; Raj, L.; Kaur, H.; Basu, S.; Kanwar, A.J.; Jain, R.K. Psychological disturbances in Indian children with atopic eczema. *J. Dermatol.* **2004**, *31*, 448–454. [CrossRef]
- Capozza, K.; Gadd, H.; Kelley, K.; Russell, S.; Shi, V.; Schwartz, A. Insights from caregivers on the impact of pediatric atopic dermatitis on families: “I’m tired, overwhelmed, and feel like I’m failing as a mother”. *Dermatitis* **2020**, *31*, 223–227. [CrossRef]
- Bandura, A. *Self-Efficacy: The Exercise of Control*; W H Freeman/Times Books Henry Holt & Co.: New York, NY, USA, 1997.
- Mitchell, A.E.; Fraser, J.A. Parents’ self-efficacy, outcome expectations, and self-reported task performance when managing atopic dermatitis in children: Instrument reliability and validity. *Int. J. Nurs. Stud.* **2011**, *48*, 215–226. [CrossRef]
- Ersner, S.J.; Farasat, H.; Jackson, K.; Gardiner, E.; Sheppard, Z.A.; Cowdell, F. Parental self-efficacy and the management of childhood atopic eczema: Development and testing of a new clinical outcome measure. *Br. J. Dermatol.* **2015**, *173*, 1479–1485. [CrossRef] [PubMed]
- Cousineau, T.M.; Hobbs, L.M.; Arthur, K.C. The role of compassion and mindfulness in building parental resilience when caring for children with chronic conditions: A conceptual model. *Front. Psychol.* **2019**, *10*, 1602. [CrossRef] [PubMed]
- Wojnarowska, A.; Kobylinska, D.; Lewczuk, K. Acceptance as an emotion regulation strategy in experimental psychological research: What we know and how we can improve that knowledge. *Front. Psychol.* **2020**, *11*, 242. [CrossRef]
- Pyszkowska, A.; Rönnlund, M. Psychological flexibility and self-compassion as predictors of well-being: Mediating role of a balanced time perspective. *Front. Psychol.* **2021**, *12*, 671746. [CrossRef] [PubMed]
- Davey, A.; Chilcot, J.; Driscoll, E.; McCracken, L.M. Psychological flexibility, self-compassion and daily functioning in chronic pain. *J. Context. Behav. Sci.* **2020**, *17*, 79–85. [CrossRef]

28. Coyne, L.W.; Gould, E.R.; Grimaldi, M.; Wilson, K.G.; Baffuto, G.; Biglan, A. First things first: Parent psychological flexibility and self-compassion during COVID-19. *Behav. Anal. Pract.* **2021**, *14*, 1092–1098. [CrossRef]
29. Doorley, J.D.; Goodman, F.R.; Kelso, K.C.; Kashdan, T.B. Psychological flexibility: What we know, what we do not know, and what we think we know. *Soc. Personal. Psychol. Compass* **2020**, *14*, e12566. [CrossRef]
30. Zettle, R.D.; Rains, J.C.; Hayes, S.C. Processes of change in acceptance and commitment therapy and cognitive therapy for depression: A mediation reanalysis of Zettle and Rains. *Behav. Modif.* **2011**, *35*, 265–283. [CrossRef]
31. Arch, J.J.; Eifert, G.H.; Davies, C.; Plumb Vilardaga, J.C.; Rose, R.D.; Craske, M.G. Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. *J. Consult. Clin. Psychol.* **2012**, *80*, 750–765. [CrossRef]
32. Gloster, A.T.; Meyer, A.H.; Lieb, R. Psychological flexibility as a malleable public health target: Evidence from a representative sample. *J. Context. Behav. Sci.* **2017**, *6*, 166–171. [CrossRef]
33. Boykin, D.M.; Anyanwu, J.; Calvin, K.; Orcutt, H.K. The moderating effect of psychological flexibility on event centrality in determining trauma outcomes. *Psychol. Trauma* **2020**, *12*, 193–199. [CrossRef] [PubMed]
34. McCracken, L.M.; Badinlou, F.; Buhrman, M.; Brocki, K.C. The role of psychological flexibility in the context of COVID-19: Associations with depression, anxiety, and insomnia. *J. Context. Behav. Sci.* **2021**, *19*, 28–35. [CrossRef]
35. Whiting, D.L.; Deane, F.P.; Simpson, G.K.; McLeod, H.J.; Ciarrochi, J. Cognitive and psychological flexibility after a traumatic brain injury and the implications for treatment in acceptance-based therapies: A conceptual review. *Neuropsychol. Rehabil.* **2017**, *27*, 263–299. [CrossRef] [PubMed]
36. Leeming, E.; Hayes, S.C. Parents are people too: The importance of parental psychological flexibility. *Clin. Psychol. Sci. Pract.* **2016**, *23*, 158–160. [CrossRef]
37. Kashdan, T.B.; Rottenberg, J. Psychological flexibility as a fundamental aspect of health. *Clin. Psychol. Rev.* **2010**, *30*, 865–878. [CrossRef]
38. Burke, K.; Moore, S. Development of the Parental Psychological Flexibility Questionnaire. *Child. Psychiatry Hum. Dev.* **2015**, *46*, 548–557. [CrossRef]
39. Fung, K.; Lake, J.; Steel, L.; Bryce, K.; Lunsy, Y. ACT processes in group intervention for mothers of children with autism spectrum disorder. *J. Autism Dev. Disord.* **2018**, *48*, 2740–2747. [CrossRef]
40. Prevedini, A.; Hirvikoski, T.; Holmberg Bergman, T.; Berg, B.; Miselli, G.; Pergolizzi, F.; Moderato, P. ACT-based interventions for reducing psychological distress in parents and caregivers of children with autism spectrum disorders: Recommendations for higher education programs. *Eur. J. Behav. Anal.* **2020**, *21*, 133–157. [CrossRef]
41. Brown, F.L.; Whittingham, K.; Boyd, R.N.; McKinlay, L.; Sofronoff, K. Does Stepping Stones Triple P plus Acceptance and Commitment Therapy improve parent, couple, and family adjustment following paediatric acquired brain injury? A randomised controlled trial. *Behav. Res. Ther.* **2015**, *73*, 58–66. [CrossRef]
42. Whittingham, K.; Sanders, M.R.; McKinlay, L.; Boyd, R.N. Parenting intervention combined with Acceptance and Commitment Therapy: A trial with families of children with cerebral palsy. *J. Pediatr. Psychol.* **2016**, *41*, 531–542. [CrossRef]
43. Neff, K.D. The science of self-compassion. In *Compassion and Wisdom in Psychotherapy*; Germer, C., Siegel, R., Eds.; The Guilford Press: New York, NY, USA, 2012; pp. 79–92.
44. Egan, S.J.; Rees, C.S.; Delalande, J.; Greene, D.; Fitzallen, G.; Brown, S.; Webb, M.; Finlay-Jones, A. A review of self-compassion as an active ingredient in the prevention and treatment of anxiety and depression in young people. *Adm. Policy Ment. Health Ment. Health Serv. Res.* **2022**, *49*, 385–403. [CrossRef] [PubMed]
45. Neff, K.D. Self-compassion: Theory, method, research, and intervention. *Annu. Rev. Psychol.* **2023**, *74*, 193–218. [CrossRef] [PubMed]
46. Ferrari, M.; Hunt, C.; Harrysunker, A.; Abbott, M.J.; Beath, A.P.; Einstein, D.A. Self-compassion interventions and psychosocial outcomes: A meta-analysis of RCTs. *Mindfulness* **2019**, *10*, 1455–1473. [CrossRef]
47. Jefferson, F.A.; Shires, A.; McAloon, J. Parenting self-compassion: A systematic review and meta-analysis. *Mindfulness* **2020**, *11*, 2067–2088. [CrossRef]
48. Cheng, N.S.; Chau, J.P.C.; Lo, S.H.S.; Choi, K.C.; Hon, K.L.E.; Lam, P.H.; Leung, T.F. Effects of a self-efficacy theory-based parental education program on eczema control and parental outcomes. *Pediatr. Allergy Immunol.* **2021**, *32*, 535–543. [CrossRef]
49. Census and Statistics Department of The Government of the Hong Kong Special Administrative Region. Population and Household Statistics Analysed by District Council District. Available online: <https://www.censtatd.gov.hk/en/EIndexbySubject.html?pcode=B1130301&scode=500> (accessed on 20 September 2023).
50. The Government of the Hong Kong Special Administrative Region. Archive of Statistics on 5th Wave of COVID-19. Available online: <https://www.coronavirus.gov.hk/eng/5th-wave-statistics.html> (accessed on 20 September 2023).
51. Bond, F.W.; Hayes, S.C.; Baer, R.A.; Carpenter, K.M.; Guenole, N.; Orcutt, H.K.; Waltz, T.; Zettle, R.D. Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behav. Ther.* **2011**, *42*, 676–688. [CrossRef]
52. Zhang, C.-Q.; Chung, P.-K.; Si, G.; Liu, J.D. Psychometric properties of the Acceptance and Action Questionnaire-II for Chinese college students and elite Chinese athletes. *Meas. Eval. Couns. Dev.* **2014**, *47*, 256–270. [CrossRef]
53. Neff, K.D. The Development and validation of a scale to measure self-compassion. *Self Identity* **2003**, *2*, 223–250. [CrossRef]

54. Chen, J.; Yan, L.-S.; Zhou, L.-H. Reliability and validity of Chinese version of Self-compassion Scale. *Chin. J. Clin. Psychol.* **2011**, *19*, 734–736.
55. Costa, J.; Marôco, J.; Pinto-Gouveia, J.; Ferreira, C.; Castilho, P. Validation of the psychometric properties of the Self-Compassion Scale: testing the factorial validity and factorial invariance of the measure among borderline personality disorder, anxiety disorder, eating disorder and general populations. *Clin. Psychol. Psychother.* **2016**, *23*, 460–468. [\[CrossRef\]](#)
56. Garcia-Campayo, J.; Navarro-Gil, M.; Andrés, E.; Montero-Marin, J.; López-Artal, L.; Demarzo, M.M.P. Validation of the Spanish versions of the long (26 items) and short (12 items) forms of the Self-Compassion Scale (SCS). *Health Qual. Life Outcomes* **2014**, *12*, 4. [\[CrossRef\]](#) [\[PubMed\]](#)
57. Zhang, H.; Dong, L.; Watson-Singleton, N.N.; Tarantino, N.; Carr, E.R.; Niles-Carnes, L.V.; Patterson, B.; Kaslow, N.J. Psychometric properties of the Self-Compassion Scale (SCS) in an African American clinical sample. *Mindfulness* **2019**, *10*, 1395–1405. [\[CrossRef\]](#)
58. Neff, K.D. The Self-Compassion Scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness* **2016**, *7*, 264–274. [\[CrossRef\]](#)
59. Cheng, N.S.; Chau, J.P.C.; Hon, K.L.E.; Chow, C.M.; Choi, K.C.; Lo, S.H.S.; Leung, T.F. Translation and validation of a Chinese Version of the Parental Self-Efficacy with Eczema Care Index. *Dermatology* **2020**, *236*, 361–368. [\[CrossRef\]](#) [\[PubMed\]](#)
60. Crawford, J.R.; Henry, J.D. The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *Br. J. Clin. Psychol.* **2003**, *42*, 111–131. [\[CrossRef\]](#) [\[PubMed\]](#)
61. Wang, K.; Shi, H.S.; Geng, F.L.; Zou, L.Q.; Tan, S.P.; Wang, Y.; Neumann, D.L.; Shum, D.H.; Chan, R.C. Cross-cultural validation of the Depression Anxiety Stress Scale-21 in China. *Psychol. Assess.* **2016**, *28*, e88–e100. [\[CrossRef\]](#)
62. McKenna, S.P.; Whalley, D.; Dewar, A.L.; Erdman, R.A.; Kohlmann, T.; Niero, M.; Baro, E.; Cook, S.A.; Crickx, B.; Frech, F.; et al. International development of the Parents' Index of Quality of Life in Atopic Dermatitis (PIQoL-AD). *Qual. Life Res.* **2005**, *14*, 231–241. [\[CrossRef\]](#) [\[PubMed\]](#)
63. Gaunt, D.M.; Metcalfe, C.; Ridd, M. The Patient-Oriented Eczema Measure in young children: Responsiveness and minimal clinically important difference. *Allergy* **2016**, *71*, 1620–1625. [\[CrossRef\]](#)
64. Schmitt, J.; Langan, S.; Williams, H.C. What are the best outcome measurements for atopic eczema? A systematic review. *J. Allergy Clin. Immunol.* **2007**, *120*, 1389–1398. [\[CrossRef\]](#)
65. Muthén, B.; Kaplan, D. A comparison of some methodologies for the factor analysis of non-normal Likert variables. *Br. J. Math. Stat. Psychol.* **1985**, *38*, 171–189. [\[CrossRef\]](#)
66. Chong, Y.Y.; Mak, Y.W.; Loke, A.Y. The role of parental psychological flexibility in childhood asthma management: An analysis of cross-lagged panel models. *J. Psychosom. Res.* **2020**, *137*, 110208. [\[CrossRef\]](#)
67. Kemani, M.K.; Kanstrup, M.; Jordan, A.; Caes, L.; Gauntlett-Gilbert, J. Evaluation of an intensive interdisciplinary pain treatment based on acceptance and commitment therapy for adolescents with chronic pain and their parents: A nonrandomized clinical trial. *J. Pediatr. Psychol.* **2018**, *43*, 981–994. [\[CrossRef\]](#) [\[PubMed\]](#)
68. Burke, K.; Muscar, F.; McCarthy, M.; Dimovski, A.; Hearps, S.; Anderson, V.; Walser, R. Adapting acceptance and commitment therapy for parents of children with life-threatening illness: Pilot study. *Fam. Syst. Health* **2014**, *32*, 122–127. [\[CrossRef\]](#) [\[PubMed\]](#)
69. Chong, Y.Y.; Mak, Y.W.; Loke, A.Y. Psychological flexibility in parents of children with asthma: Analysis using a structural equation model. *J. Child. Fam. Stud.* **2017**, *26*, 2610–2622. [\[CrossRef\]](#)
70. Chong, Y.Y.; Mak, Y.W.; Leung, S.P.; Lam, S.Y.; Loke, A.Y. Acceptance and Commitment Therapy for parental management of childhood asthma: An RCT. *Pediatrics* **2019**, *143*, e20181723. [\[CrossRef\]](#)
71. Amat, F.; Soria, A.; Tallon, P.; Bourgoin-Heck, M.; Lambert, N.; Deschildre, A.; Just, J. New insights into the phenotypes of atopic dermatitis linked with allergies and asthma in children: An overview. *Clin. Exp. Allergy* **2018**, *48*, 919–934. [\[CrossRef\]](#) [\[PubMed\]](#)
72. Yaneva, M.; Darlenski, R. The link between atopic dermatitis and asthma-immunological imbalance and beyond. *Asthma Res. Pract.* **2021**, *7*, 16. [\[CrossRef\]](#)
73. Wakelin, K.E.; Perman, G.; Simonds, L.M. Effectiveness of self-compassion-related interventions for reducing self-criticism: A systematic review and meta-analysis. *Clin. Psychol. Psychother.* **2022**, *29*, 1–25. [\[CrossRef\]](#)
74. Ewert, C.; Vater, A.; Schröder-Abé, M. Self-compassion and coping: A meta-analysis. *Mindfulness* **2021**, *12*, 1063–1077. [\[CrossRef\]](#)
75. Dawson, D.L.; Golijani-Moghaddam, N. COVID-19: Psychological flexibility, coping, mental health, and wellbeing in the UK during the pandemic. *J. Context. Behav. Sci.* **2020**, *17*, 126–134. [\[CrossRef\]](#)
76. Marshall, E.J.; Brockman, R.N. The relationships between psychological flexibility, self-compassion, and emotional well-being. *J. Cogn. Psychother.* **2016**, *30*, 60–72. [\[CrossRef\]](#)
77. Tyndall, I.; Waldeck, D.; Pancani, L.; Whelan, R.; Roche, B.; Dawson, D.L. The acceptance and Action Questionnaire-II (AAQ-II) as a measure of experiential avoidance: Concerns over discriminant validity. *J. Context. Behav. Sci.* **2019**, *12*, 278–284. [\[CrossRef\]](#)
78. Jo, D.; Im, S.; Suh, D.E.; Spencer, S.D.; Masuda, A. The personalized psychological flexibility index (PPFI): An item response theory analysis with racially diverse college students. *J. Psychopathol. Behav. Assess.* **2023**, *45*, 829–843. [\[CrossRef\]](#)
79. Golijani-Moghaddam, N.; Morris, J.L.; Bayliss, K.; Dawson, D.L. The CompACT-10: Development and validation of a comprehensive assessment of acceptance and commitment therapy processes short-form in representative UK samples. *J. Context. Behav. Sci.* **2023**, *29*, 59–66. [\[CrossRef\]](#)
80. Gloster, A.T.; Block, V.J.; Klotsche, J.; Villanueva, J.; Rinner, M.T.B.; Benoy, C.; Walter, M.; Karekla, M.; Bader, K. Psy-Flex: A contextually sensitive measure of psychological flexibility. *J. Context. Behav. Sci.* **2021**, *22*, 13–23. [\[CrossRef\]](#)

81. Cheng, N.S.; Chau, P.C.J.; Hon, K.L.E.; Choi, K.C.; Kung, J.S.C.; Ng, W.G.; Leung, T.F. Measuring the quality of life of the families of children with eczema in Hong Kong. *Asia Pac. Allergy* **2019**, *9*, e26. [[CrossRef](#)]
82. Miriam, S.; Hana, B.; Lucy, Y.; Steven, E.; Sue, L.-J.; Ingrid, M.; Catherine, H.; Paul, L. Experiences of carers managing childhood eczema and their views on its treatment: A qualitative study. *Br. J. Gen. Pract.* **2012**, *62*, e261. [[CrossRef](#)]
83. Santer, M.; Burgess, H.; Yardley, L.; Ersser, S.J.; Lewis-Jones, S.; Muller, I.; Hugh, C.; Little, P. Managing childhood eczema: Qualitative study exploring carers' experiences of barriers and facilitators to treatment adherence. *J. Adv. Nurs.* **2013**, *69*, 2493–2501. [[CrossRef](#)] [[PubMed](#)]
84. Lai, D.W.; Luk, P.K.; Andruske, C.L. Gender differences in caregiving: A case in Chinese Canadian caregivers. *J. Women Aging* **2007**, *19*, 161–178. [[CrossRef](#)] [[PubMed](#)]
85. Juvin, J.; Sadeg, S.; Julien-Sweerts, S.; Zebdi, R. A systematic review: Acceptance and commitment therapy for the parents of children and adolescents with autism spectrum disorder. *J. Autism Dev. Disord.* **2022**, *52*, 124–141. [[CrossRef](#)] [[PubMed](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.