






Development and validation of the atopic dermatitis and infant skincare knowledge, attitude, and practice (ADISKAP 1.0) scale

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ABSTRACT

Importance: Preserving skin health is crucial for atopic dermatitis control as well as for the thriving of children. However, a well-developed and validated tool that measures the knowledge, attitude, and practice of skin care is lacking.

Objective: To develop and validate the atopic dermatitis and infant skincare knowledge, attitude, and practice (ADISKAP 1.0) scale that measures parental health literacy on atopic dermatitis and skin care.

Methods: We conducted a review of the literature, a focus group (two dermatologists and 12 parents), and a panel discussion in order to generate the ADISKAP prototype. Two samples of parents with knowingly superior (dermatologists, $n = 59$) and inferior (general population, $n = 395$) knowledge traits participated in the validation of ADISKAP. Cronbach's alpha was reported as a measure of internal consistency, and the intraclass correlation coefficient (ICC) was calculated to assess the test-retest validity. The known-groups technique was used to evaluate construct validity.

Results: The ADISKAP scale contained 17 items after content and face validity validation. After removing items that displayed poor test-retest reliability ($n = 4$) and construct validity ($n = 3$), 12 items were retained in the ADISKAP 1.0.

Interpretation: ADISKAP 1.0 is a reliable and valid tool for assessing parental knowledge, attitude, and practice on infantile atopic dermatitis and skin care.

KEYWORDS

Atopic dermatitis, Attitude, Health literacy, Knowledge, Practice, Scale, Skin care

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INTRODUCTION

Atopic dermatitis (AD) is the most common chronic inflammatory skin disease, affecting up to 38.71% of Chinese children in the infantile phase.¹ About 80% of cases develop AD in infancy or childhood. A significant health burden is inflicted by the severe pruritus, prolonged disease course, and compromised quality of life. Skin serves essential homeostatic functions, including (1) providing a barrier to water loss, light, and irritants, (2) infection control and immunosurveillance, (3) resilience to mechanical trauma, (4) sensation and tactile discrimination, (5) thermal regulation, and (6) acid mantle formation.² Structurally, infants have smaller keratinocytes, thinner epidermis, lower natural moisturizing factors and sebum levels, and underdeveloped immune resilience to *Staphylococcus aureus*.^{3–5} These structural vulnerabilities render the skin of infants highly susceptible to AD. While the skin of infants is critical for the thriving of a child, suboptimal skin care knowledge, attitude, and practice (KAP) may compromise the integrity and function of the skin.

Skin care is a broad term that encompasses proper cleansing, the use of emollients, and the care of the skin under disease states, et al. Skincare was regarded as the cornerstone of AD treatment. It has been recommended that moisturizers be used liberally and frequently to minimize xerosis, which is a cardinal feature of AD.⁶ Bathing is relevant in maintaining the skin barrier function. Studies have shown that prolonged exposure to water disrupts the stratum corneum intercellular lamellar bilayers and enhances skin permeability and susceptibility to irritants.^{7–9} Consensus guidelines of Korea and the European Academy of Dermatology and Venereology endorsed short periods of bathing of 5–10 min and less than 5 min respectively.^{10,11} Topical corticosteroids remain to be the first-line therapy in AD during disease flares, however, fear of steroids can critically hinder treatment adherence, resulting in persistent disease and escalation of treatment to systemic agents.¹² Topical corticosteroid phobia is a global issue, with the prevalence ranging from 31% to 95.7% across different countries. In the current study, we set out to quantify the KAP of caregivers anchoring on the use of emollients, bathing practices, and topical steroid phobia.

In 1998, therapeutic patient education was recognized as beneficial in improving chronic disease patient self-efficacy.¹³ Since then, scales on health literacy have been developed and validated, aiding the quantification of patient KAP.^{14,15} Measuring health knowledge and attitude is crucial because it is the knowledge people acquire that leads to the development of an attitude, which in turn leads to practice changes.¹⁶ A number of studies have explored disease-specific patient and caregiver KAP.^{17–19} However, skin care awareness under normal and pathological

conditions has not been investigated. Despite growing evidence showing the unique functions and needs of infant skin, less is known about the translation of clinical research into the skincare KAP of parents. Moreover, there is no tool available for assessing parental knowledge competence of infant skin care. By measuring parents' KAP, skin health campaigns, and educational efforts could be directed more specifically. In this study, we endeavored to develop and validate a new scaling instrument, the AD and infant skincare KAP (ADISKAP) scale, to measure the skin care literacy of parents with children aged 0–2 years.

METHODS

Ethical approval

This study was approved by the Ethics Committee of Beijing Children's Hospital (2019-k-270). All participants signed written informed consent.

Item generation and content validity

A literature review was first conducted by three dermatologists to generate focus group topics, which included bathing practices, emollient application, and topical corticosteroid phobia. Next, two experienced dermatologists held three focus groups, each consisting of four parents of children aged 0–2 years. Discussions were recorded and independently analyzed by two investigators (Mutong Zhao and Qiong Wu). Sun protection was added as the fourth topic during the focus group discussion. We then used the themes from the focus group and the literature review to form items of the prototype ADISKAP, resulting in a 20-item scale ADISKAP-20 with a five-point Likert-type rating scale (Sheet S1). To establish content validity, a panel of experts consisting of five dermatologists with attending or more advanced levels of competence, one general practitioner, and one epidemiologist then reevaluated the ADISKAP-20. Face validity was established by seeking feedback from both parents ($n = 13$) and medical practitioners (pediatricians, $n = 2$; general practitioners, $n = 3$; obstetricians, $n = 2$).

Participants

A total of 417 parents, consecutively selected from the obstetric and pediatric clinic of a tertiary general hospital in Beijing (Capital Medical University Daxing Teaching Hospital), China, were approached, and 395 agreed to participate in the validation. To be included in the study, parents should fulfill the following inclusion criteria: parents of children aged 0–24 months old who were at the clinic for routine postnatal checkups or routine checkups of the child. They must be able to communicate in written and spoken Chinese. Either the mother or the father whoever is the primary caregiver, but not both,

was eligible to be included. Written consent was obtained from all participants before the scales were sent out. An additional convenient sample of dermatologists ($n = 59$) from Beijing, who fulfill the aforementioned criteria, were invited to participate in the study to demonstrate construct validity.

Construct validity

The known-groups method was employed to assess the construct validity.²⁰ Briefly, one group (i.e., dermatologists) with a knowingly superior KAP as could be measured by the scale under validation is compared to another group (i.e., the general population) with a knowingly inferior KAP,²⁰ and construct validity can be demonstrated by a successful separation of the two groups.

Test-retest reliability

Participants were sent an electronic version of the ADISKAP-17 scale four weeks after completing the initial assessment. And the intra-class correlation coefficient (ICC) was calculated using data from the initial and repeated tests to assess the test-retest reliability. Items with an ICC of < 0.5 indicate poor test-retest reliability and should be excluded.

Statistical analysis

Data analyses were conducted using STATA 14.0 (Stata Statistical Software: College Station, TX: Stata Corp LP). Cronbach's α coefficient was calculated to assess the internal reliability of the scale. Coefficient scores of > 0.8 generally indicate good internal reliability.²¹ Mann-Whitney U -test was used to compare scores from the two groups with knowingly superior (dermatologists) and inferior knowledge (general population). All tests were two-tailed with a significance level set at $P < 0.05$.

RESULTS

Item generation

Figure 1 displays the flow of items through the developmental and validation stages of ADISKAP 1.0. A 20-item prototype of ADISKAP was generated from the focus groups (Sheet S1). Four items on sun protection and one item on diaper rash were removed at the specialist panel discussion so that the instrument deals with the chosen topic of AD and related skin care. Three items were rephrased as they represent double-barreled items. Double-barreled items can convey two or more ideas, and an endorsement of the item might refer to either or both ideas and should thus be avoided.²⁰ An additional two items were rephrased (one at the panel discussion and one at the focus group)

for clarity, which led to the ADISKAP-17 (Sheet 1) being evaluated.

Test-retest reliability and internal reliability

A total of 454 parents completed the scale at the initial assessment, and 228 completed the retest scale. The characteristics of the participants are presented in Table 1. The ICCs for each item are displayed in Table 2. Of the items included in the prototype of ADISKAP-17, four were removed as they showed ICCs of less than 0.5, which indicated poor reliability.²² The ADISKAP-17 and the final 12-item ADISKAP 1.0 had good test-retest reliability with ICCs of 0.83 (95% CI, 0.79–0.87) and 0.83 (95% CI, 0.79–0.87), respectively.

Internal reliability was established using data from the initial assessment ($n = 454$). The ADISKAP-17 and the final ADISKAP 1.0 (12 items) displayed acceptable internal reliability with Cronbach's α of 0.78 and 0.79, respectively.²¹

Construct validity

We employed the known-groups method to evaluate construct validity. Data from dermatologists ($n = 59$) were compared with parents representing the general population ($n = 395$) using the initial assessment. The known superior group scored significantly higher than the known inferior group in 14 items (Table 3). Three items were removed as they failed to separate the two groups.

At this stage, a total of five items were removed from the ADISKAP-17 due to either poor reliability or poor separation of the known groups or both, resulting in a 12-item scale ADISKAP 1.0 (English and Chinese version, see Sheets S2 and S3 respectively). The respective scores of ADISKAP 1.0 items are depicted as a heatmap (Figure 2).

DISCUSSION

The ADISKAP 1.0 (Sheet S2) is the first scale developed to measure parental KAP of AD and skin care for infants. We employed comprehensive procedures such as a literature review, focus groups, test-retest reliability, and construct validity during the development and validation of the scale. The final ADISKAP 1.0 scale demonstrated acceptable internal reliability and good test-retest reliability with a clear separation of the two groups with distinct KAP traits. This is crucial for identifying the target population of low AD skin health literacy for educational campaigns. Another strength of this study is the sampling of participants. By consecutively including all eligible parents, the resulting sample is regarded as more likely to represent the target population than simple convenience sampling.²³

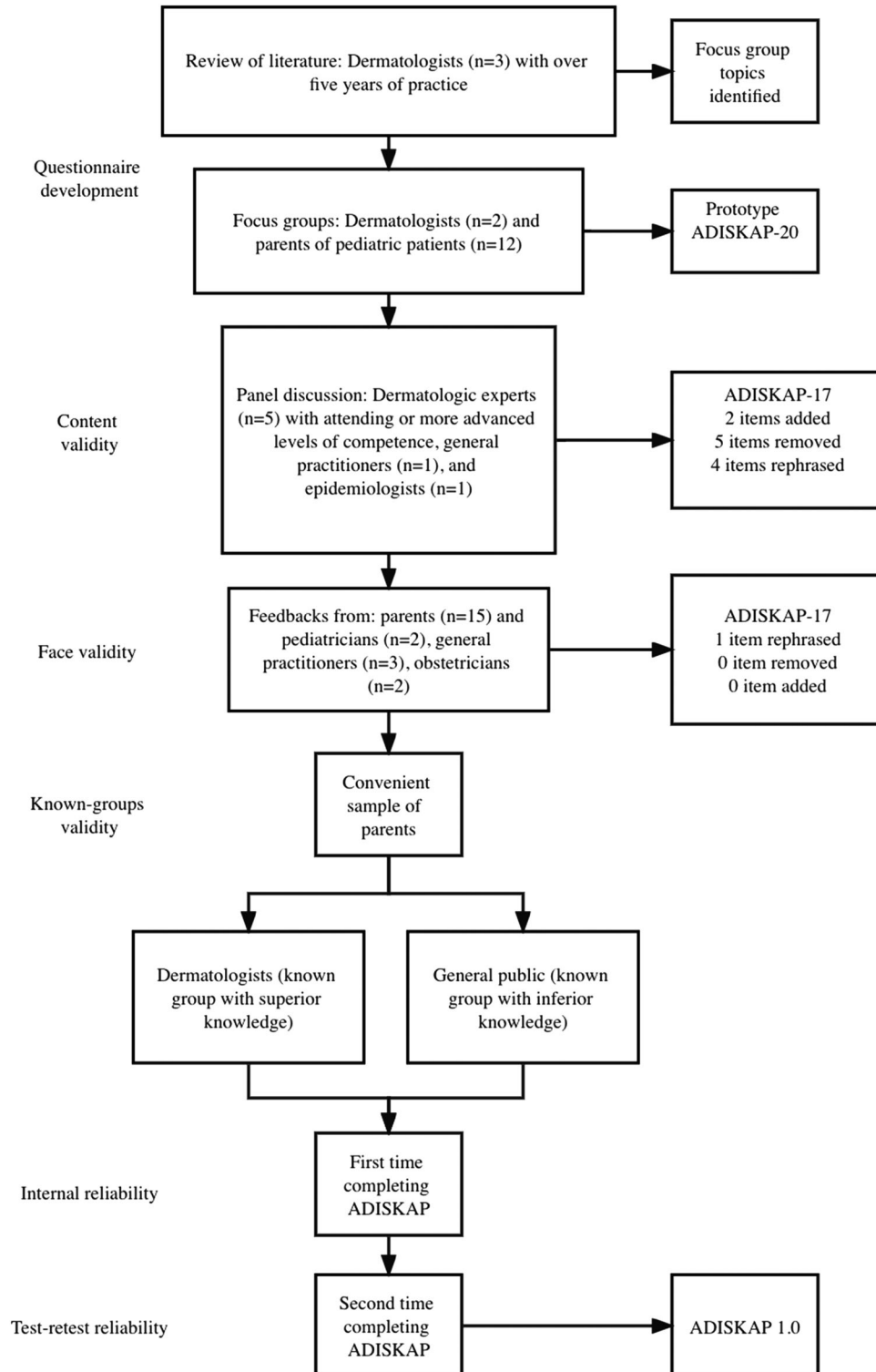


FIGURE 1 The flow of scale development and validation. ADISKAP, atopic dermatitis and infant skincare knowledge, attitude, and practice.

SHEET 1 The 17-item atopic dermatitis and infant skincare knowledge, attitude and practice scale (ADISKAP-17)

1. I should apply body wash every time I bathe my baby.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
2. Moisturizer should be applied all over my baby’s body.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
3. Moisturizer should be used no more than once a day.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
4. I only use moisturizer after I bathe my baby.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
5. Massage oil is an adequate supplement for baby moisturizer.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
6. Moisturizer is not necessary for my baby at summer time.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
7. Sweat is an irritant to the baby’s skin. [†]	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
8. I’m concerned to use topical corticosteroids on my baby.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
9. Topical corticosteroids will make babies fat.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
10. Topical corticosteroids will induce premature puberty in babies.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
11. If I had to use topical corticosteroids on my baby, I’d be concerned that my baby will become addicted to the drug.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
12. If I had to use topical corticosteroids on my baby, I’d be concerned that my baby will become resistant to the drug.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
13. When bathing my baby, I set the temperature at above 40°C. [‡]	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
14. My baby should be scrubbed regularly when bathing. [‡]	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
15. I dry my baby off naturally at a warm place after bathing. [§]	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
16. My baby’s bath time should be kept within 10 minutes. ^{‡§}	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
17. A moisturizer a baby uses should be fragrance-free. ^{‡,§,¶}	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Undecided	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree

[†] Added at specialist panel discussion.

[‡] Removed due to poor test-retest reliability.

[§] Removed due to poor construct validity.

[¶] Added at face group discussion.

There are a number of limitations. Firstly, although we had a large sample size, there lacks an adequate representation of parents from non-Chinese ethnic origins. As KAP are developed within a cultural context, further validation is required to allow cultural adaptations. Secondly, this instrument is developed based on misconceptions of skin care practices of infants aged under 2 years old and among whom the validation process took

place, thereby, generalizability to a broader age group is limited. Finally, further validation is required to establish criterion validity. Criterion validity refers to the extent to which a measure is related to an outcome. Data collection for assessing the ability of the ADISKAP 1.0 instrument to predict the development and quality of life of AD in parent-child dyads is being undertaken by our team.

TABLE 1 Demographics of the participating parents

Items	Test-retest reliability (<i>n</i> = 228)		Known groups validity (<i>n</i> = 454)	
	Dermatologist (<i>n</i> = 48)	General public (<i>n</i> = 180)	Dermatologist (<i>n</i> = 59)	General public (<i>n</i> = 395)
Gender				
Male	11 (22.9)	24 (13.3)	13 (22.0)	53 (13.4)
Female	37 (77.1)	156 (86.7)	46 (78.0)	342 (85.6)
Age (years)	31.8 ± 3.7	30.8 ± 4.3	31.0 ± 4.0	31.0 ± 4.5
Education				
High school or lower	0 (0.0)	39 (21.7)	0 (0.0)	97 (24.6)
College	3 (6.3)	124 (68.9)	4 (6.8)	259 (65.6)
Graduate school or higher	45 (93.8)	17 (9.4)	55 (93.2)	39 (9.9)
Income (CNY per month)				
<5000	10 (20.8)	62 (34.4)	12 (20.3)	133 (33.7)
5000–9999	23 (47.9)	91 (50.6)	28 (47.5)	201 (50.9)
10 000–20 000	12 (25.0)	24 (13.3)	16 (27.1)	52 (13.2)
>20 000	3 (6.3)	3 (1.7)	3 (5.1)	9 (2.3)
History of atopic dermatitis of the child	13 (27.1)	60 (33.3)	14 (23.7)	128 (32.4)
Family history of atopic dermatitis				
First degree relatives	11 (22.9)	18 (10.0)	14 (23.7)	46 (11.7)
Other relatives	3 (6.3)	1 (0.6)	4 (6.8)	2 (0.5)
None	34 (70.8)	161 (89.4)	41 (69.5)	347 (87.9)

Data are shown as mean ± standard deviation or *n* (%).

TABLE 2 Intraclass correlation coefficient (ICC) and mean difference for atopic dermatitis and infant skincare knowledge, attitude, and practice (ADISKAP) test-retest reliability

Questionnaire item	ICC (95% CI)	<i>P</i> -value	Mean difference (test-retest)	SD
1	0.69 (0.61–0.75)	<0.001	−0.02	0.92
2	0.72 (0.64–0.79)	<0.001	−0.01	0.95
3	0.63 (0.54–0.70)	<0.001	−0.14	1.04
4	0.62 (0.53–0.69)	<0.001	−0.04	0.96
5	0.64 (0.56–0.71)	<0.001	−0.08	1.01
6	0.56 (0.47–0.65)	<0.001	0.10	0.92
7	0.61 (0.49–0.70)	<0.001	−0.04	1.20
8	0.66 (0.58–0.73)	<0.001	0.05	1.09
9	0.62 (0.53–0.69)	<0.001	0.14	1.10
10	0.59 (0.50–0.67)	<0.001	−0.04	1.24
11	0.68 (0.60–0.74)	<0.001	0.08	1.09
12	0.64 (0.56–0.72)	<0.001	−0.11	1.13
13 [†]	0.38 (0.27–0.49)	<0.001	0.00	1.26
14 [†]	0.48 (0.37–0.57)	<0.001	0.06	1.28
15	0.56 (0.46–0.64)	<0.001	0.01	1.18
16 [†]	0.46 (0.33–0.57)	<0.001	0.03	0.84
17 [†]	0.47 (0.34–0.58)	<0.001	−0.09	1.17
ADISKAP-17	0.83 (0.79–0.87)	<0.001	−0.05	6.45
ADISKAP 1.0	0.83 (0.79–0.87)	<0.001	−0.25	5.17

Abbreviations: CI, confidence interval; SD, standard deviation.

[†]Removed due to poor test-retest reliability.

TABLE 3 Participant responses and construct validity of atopic dermatitis and infant skincare knowledge, attitude, and practice (ADISKAP)-17 using the known-groups method

Questionnaire item	Score	Dermatologist (known group with superior knowledge, n = 59)	General public (known group with inferior knowledge, n = 395)	P-value
1	1	2 (3.39)	17 (4.30)	0.002
	2	3 (5.08)	61 (15.44)	
	3	3 (5.08)	61 (15.44)	
	4	22 (37.29)	124 (31.39)	
	5	29 (49.15)	132 (33.42)	
2	1	2 (3.39)	27 (6.84)	<0.001
	2	0 (0.00)	86 (21.77)	
	3	1 (1.69)	76 (19.24)	
	4	10 (16.95)	128 (32.41)	
	5	46 (77.97)	78 (19.75)	
3	1	1 (1.69)	55 (13.92)	<0.001
	2	4 (6.78)	109 (27.59)	
	3	5 (8.47)	121 (30.63)	
	4	23 (38.98)	91 (23.04)	
	5	26 (44.07)	19 (4.81)	
4	1	1 (1.69)	25 (6.33)	<0.001
	2	0 (0.00)	65 (16.46)	
	3	0 (0.00)	79 (20.00)	
	4	26 (44.07)	170 (43.04)	
	5	32 (54.24)	56 (14.18)	
5	1	1 (1.69)	32 (8.10)	<0.001
	2	3 (5.08)	96 (24.30)	
	3	9 (15.25)	112 (28.35)	
	4	22 (37.29)	112 (28.35)	
	5	24 (40.68)	43 (10.89)	
6	1	0 (0.00)	10 (2.53)	<0.001
	2	3 (5.08)	36 (9.11)	
	3	3 (5.08)	72 (18.23)	
	4	17 (28.81)	160 (40.51)	
	5	36 (61.02)	117 (29.62)	
7	1	5 (8.47)	39 (9.87)	0.004
	2	5 (8.47)	54 (13.67)	
	3	6 (10.17)	95 (24.5)	
	4	17 (28.81)	105 (26.58)	
	5	26 (44.07)	102 (25.82)	
8	1	1 (1.69)	103 (26.08)	<0.001
	2	3 (5.08)	81 (20.51)	
	3	14 (23.73)	149 (37.72)	
	4	12 (20.34)	37 (9.37)	
	5	29 (49.15)	25 (6.33)	

(Continues)

TABLE 3 (Continued)

Questionnaire item	Score	Dermatologist (known group with superior knowledge, <i>n</i> = 59)	General public (known group with inferior knowledge, <i>n</i> = 395)	<i>P</i> -value
9	1	1 (1.69)	43 (10.89)	<0.001
	2	1 (1.69)	53 (13.42)	
	3	3 (5.08)	124 (31.39)	
	4	9 (15.25)	105 (26.58)	
	5	45 (76.27)	70 (17.72)	
10	1	1 (1.69)	69 (17.47)	<0.001
	2	1 (1.69)	47 (11.9)	
	3	4 (6.78)	138 (34.94)	
	4	14 (23.73)	88 (22.28)	
	5	39 (66.1)	53 (13.42)	
11	1	1 (1.69)	93 (23.54)	<0.001
	2	2 (3.39)	67 (16.96)	
	3	7 (11.86)	140 (35.44)	
	4	16 (27.12)	59 (14.94)	
	5	33 (55.93)	36 (9.11)	
12	1	1 (1.69)	88 (22.28)	<0.001
	2	3 (5.08)	89 (22.53)	
	3	9 (15.25)	135 (34.18)	
	4	16 (27.12)	57 (14.43)	
	5	30 (50.85)	26 (6.58)	
13	1	2 (3.39)	20 (5.06)	0.005
	2	1 (1.69)	25 (6.33)	
	3	1 (1.69)	52 (13.16)	
	4	14 (23.73)	91 (23.04)	
	5	41 (69.49)	207 (52.41)	
14	1	1 (1.69)	36 (9.11)	<0.001
	2	3 (5.08)	49 (12.41)	
	3	4 (6.78)	58 (14.68)	
	4	9 (15.25)	99 (25.06)	
	5	42 (71.19)	153 (38.73)	
15 [†]	1	4 (6.78)	34 (8.61)	0.333
	2	5 (8.47)	49 (12.41)	
	3	7 (11.86)	54 (13.67)	
	4	20 (33.9)	118 (29.87)	
	5	23 (38.98)	140 (35.44)	
16 [†]	1	0 (0.00)	4 (1.01)	0.830
	2	4 (6.78)	23 (5.82)	
	3	9 (15.25)	66 (16.71)	
	4	20 (33.9)	137 (34.68)	
	5	26 (44.07)	165 (41.77)	

(Continues)

TABLE 3 (Continued)

Questionnaire item	Score	Dermatologist (known group with superior knowledge, n = 59)	General public (known group with inferior knowledge, n = 395)	P-value
17 [†]	1	1 (1.69)	13 (3.29)	0.442
	2	10 (16.95)	40 (10.13)	
	3	4 (6.78)	62 (15.70)	
	4	25 (42.37)	117 (29.62)	
	5	19 (32.20)	163 (41.27)	

Data are shown as n (%).

[†]Removed due to poor construct validity.

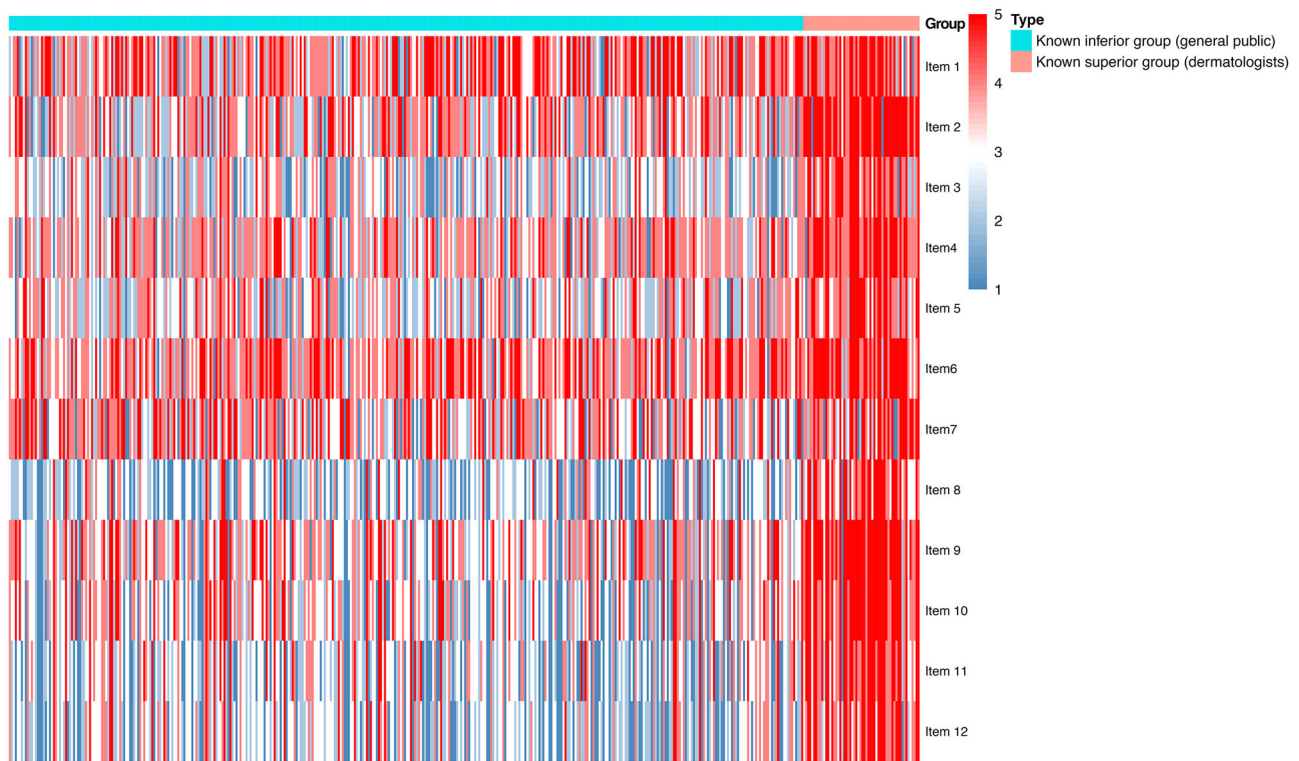


FIGURE 2 Heatmap of the knowledge, attitude, and practice traits of parents. The columns of the heatmap are ordered by groups.

In conclusion, ADISKAP 1.0 is a novel tool designed to measure the AD and skin care KAP of parents to guide educational initiatives. ADISKAP 1.0 was developed following rigorous procedures and was shown to be reliable and valid. Future endeavors could be directed at using this instrument to improve parental health literacy for pediatric AD patient education purposes.

CONFLICT OF INTEREST

Dr. Lin Ma is a member of *Pediatric Investigation* editorial board.

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SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

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