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Clinical and Experimental Dermatology – Letter to Editor

Title

Validation of the RECAP measure of eczema control for use in dermatology clinics

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Conflict of interest

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Ethical Approval

The study was approved by Yorkshire & The Humber - South Yorkshire REC (reference number 25901) and sponsored by the University of Bristol.

The HOME (Harmonising Outcome Measures for Eczema) initiative seeks to standardise outcome measures in trials of eczema treatments.¹ RECAP (Recap for atopic eczema) is a seven-item HOME recommended patient reported outcome measure of eczema control.² The total score of RECAP is from 0 to 28, with a greater score indicating poorer eczema control. In an online survey of 382 participants, RECAP was found to have good validity and reliability.³ However, validity and reliability can vary by both population and setting.

We investigated the acceptability and validity of RECAP in a clinic setting in Bristol, England.

Adults with eczema and parents of children with eczema attending hospital dermatology out-patient clinics and a nurse led community dermatology clinic were invited to complete a paper-based questionnaire. The questionnaire included RECAP together with POEM (patient reported eczema severity) and PROMIS (quality of life), both of which have been shown to have good validity.^{4,5}

To evaluate the construct validity of RECAP, the following hypotheses were prespecified:

- i. Eczema control worsens with increasing disease severity.
- ii. Poorer eczema control is associated with worse quality of life.
- iii. Eczema control worsens with disease 'bother' ("How much bother has your eczema been over the past week?" 0 none, 10 maximum).
- iv. A self-reported improvement/worsening in eczema would equate to a decrease/increase in RECAP score.

Participant recruitment was stopped early due to the COVID-19 pandemic. A total of 43 adults and parents of children completed the questionnaires (Table 1), below our target sample size of 98.

Recap had a high completion rate (adult 96.3%, child 93.7%), with mean (SD, minimum, maximum) scores for adults of 13.9 (7.2, 0, 28) and children 9.5 (6.8, 0, 21). Adult and child participants used a range of response options and there were no apparent floor or ceiling effects (3.7% of adult and 6.25% of child participants had the minimum RECAP score; 3.7% of adult and no child participants had the highest RECAP score; Figure 1).

Hypothesized associations between RECAP and other variables were observed. More severe disease (POEM) was associated with poorer eczema control (Pearson's correlation coefficient (adults 0.75, $p < 0.0001$; children 0.91, $p < 0.0001$; Table 2; Figures 2a and 2b). Poorer eczema control (RECAP) was associated with a worse self-rated level of eczema control (Spearman's rank coefficient: adults -0.85, $p < 0.0001$; children -0.81, $p = 0.0002$; Table 2). Worse eczema control was associated with poorer quality of life (PROMIS) (Pearson's correlation coefficient: adult mental health -0.55, $p = 0.0035$) but was not associated with

adult physical health (Pearson's correlation coefficient 0.20, $p=0.34$) or child health (Pearson's correlation coefficient -0.07 , $p=0.80$). A positive relationship between RECAP and the single "bother" item was observed (Pearson's correlation coefficient: adults 0.89, $p<0.0001$; children 0.82, $p=0.001$) with worse control associated with a greater impact on participants lives.

Despite encouraging results suggesting RECAP has good acceptability and validity in clinics, results should be interpreted with caution due to the small sample size. Further research with larger numbers of diverse patients is needed before RECAP can be recommended for routine use in dermatology clinics.

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Tables

Table 1: Participant characteristics

	Adults	Children
Number (%) of participants	27 (62.8)	16 (37.2)
Mean age years (SD, range)	42.6 (19.4, 16-78)	3.4 (3.6, 0-13)
Female (%)	19 (70.4)	4 (25.0)
Ethnicity		
White English/Welsh/Scottish/Irish/ Northern Irish	23 (85.2)	11 (68.8)
White and Asian/Caribbean/Other	2 (7.4)	2 (12.5)
Pakistani	1 (3.7)	0 (0.0)
Black (African)	0 (0.0)	1 (6.3)
Other	0 (0.0)	2 (12.5)
Missing*	1 (3.7)	0 (0.0)

Table 2: RECAP scores by categorised POEM severity and self-reported eczema control

	Mean (standard error) of RECAP	
	Adults	Children
Eczema severity by categorised POEM		
Clear or almost clear (0-2)	0 (*)	2 (1.5)
Mild eczema (3-7)	6.5 (0.65)	4.75 (1.0)
Moderate eczema (8-16)	12.1 (1.6)	13.8 (2.2)
Severe eczema (17-24)	18.4 (1.9)	18 (*)
Very severe eczema (25-28)	21 (3.0)	0 (0.0)
Self-reported global eczema control		
Clear	0 (*)	0 (0.0)
Mild	7.8 (0.7)	5.1 (1.3)
Moderate	14 (1.5)	15.2 (1.7)
Severe	21 (1.4)	21 (*)
Very severe	26 (2.0)	0 (0.0)

**Standard error omitted as one observation*

Figures

Figure 1: Distribution of adult and child RECAP scores

