

## LETTER TO THE EDITOR

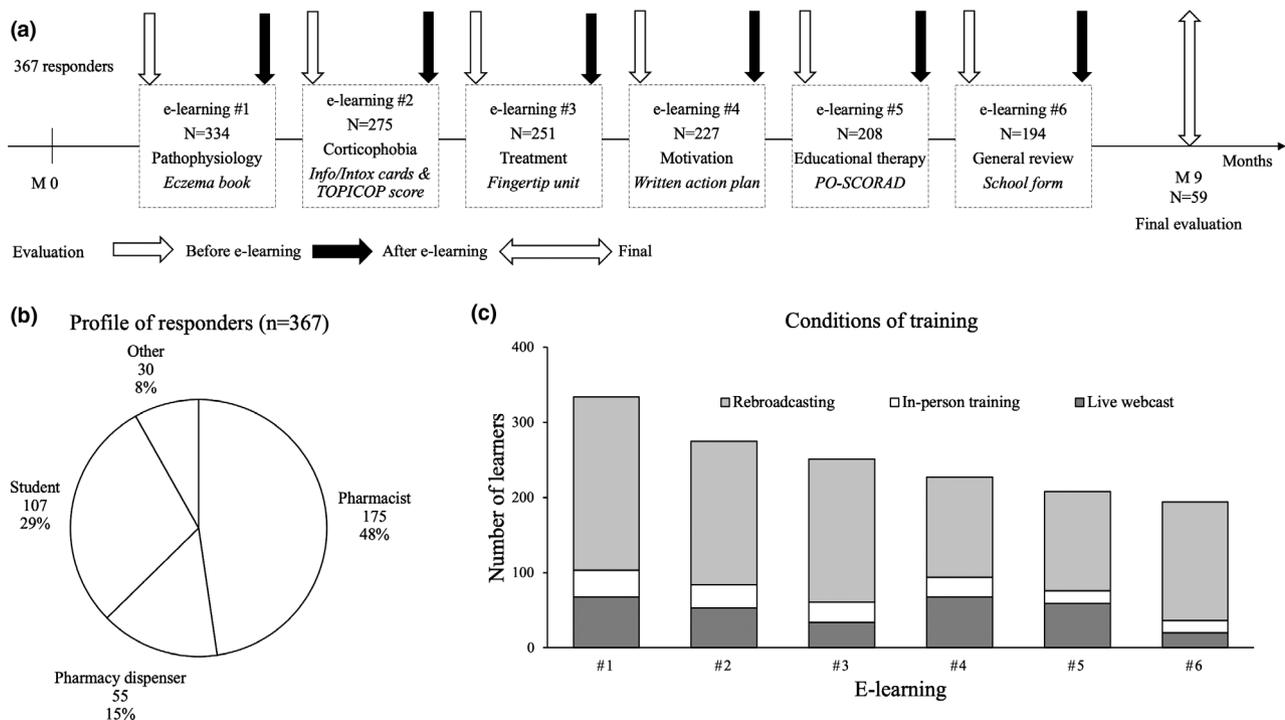
## Impact of an e-learning programme on pharmacists' management of atopic dermatitis

Dear Editor,

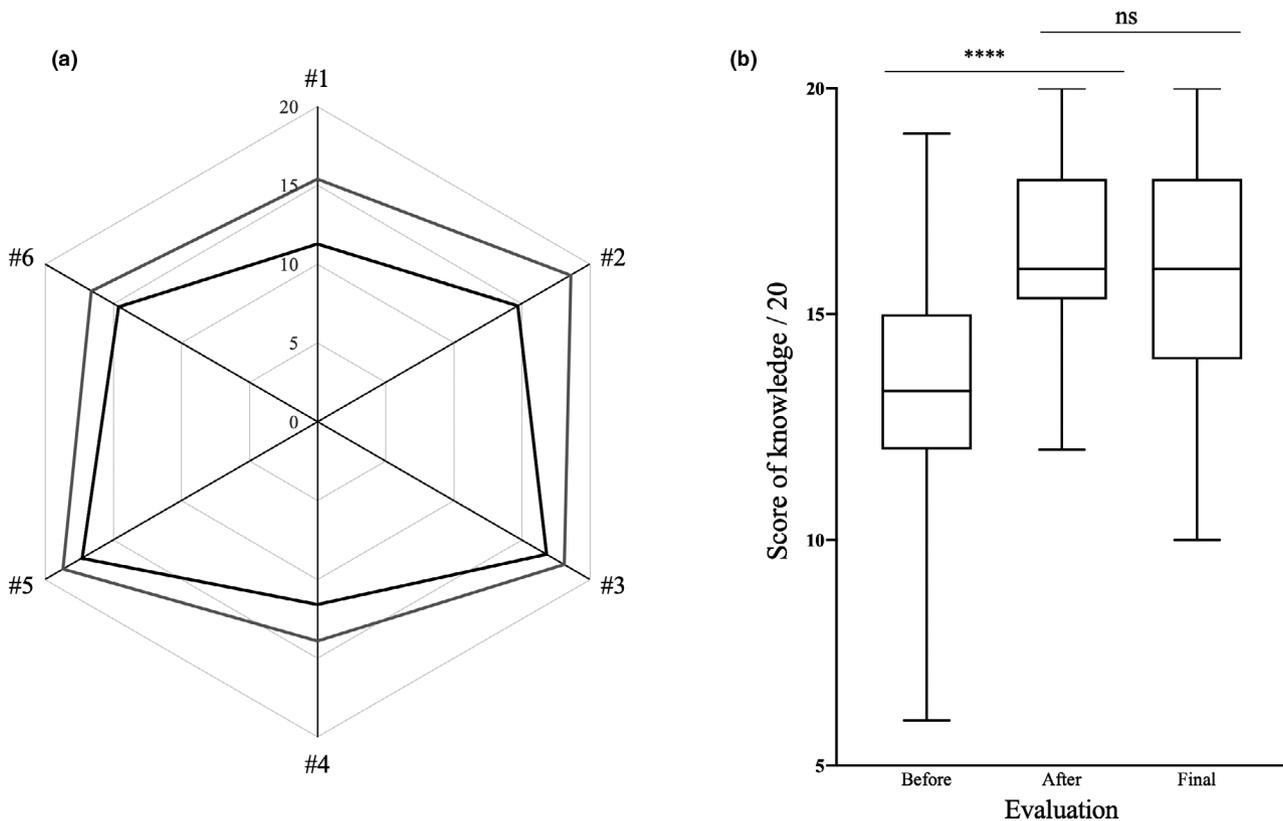
Atopic dermatitis (AD) is a common skin condition that has a significant impact on patients' quality of life. Inadequate compliance with therapy often leads to treatment failure; therefore, therapeutic education is fundamental for AD management. However, conflicting strategies among caregivers, including pharmacists, lead to confusion and therapeutic non-adherence. As pharmacists are the last healthcare workers to interact with patients before they commence at-home treatment, they play a key role in patient care. Corticophobia (the fear of using corticosteroids) is highly frequent among AD patients and is rooted partially in insufficient knowledge regarding topical corticosteroids.<sup>1,2</sup> This study aimed to

evaluate the impact of an e-learning programme on pharmacists' knowledge of AD management.

This e-learning programme, named Parcours Officiel du Patient (POP) training, comprised six complementary modules designed by six French AD reference centres and was validated through consensus by the French Group on Therapeutic Education in Dermatology (GET) (Fig. 1a). Participants were recruited by email or via conference or press release and had to register online (<https://poptraining.fondation-dermatite-atopique.org>) to complete the course. After the training, pharmacists could download various educational tools and display a label on the pharmacy's window indicating to patients their specific skill in the management of AD. We provided a blended approach to learning: in-person training, live webcast and rebroadcasting. Participants' level of knowledge was evaluated immediately before and after each e-learning session, as well as in a 9-month follow-up via an online questionnaire for final evaluation. A responder was defined as a registered participant with at least



**Figure 1** Characteristics of the e-learning programme and of the responders. (a) Design of the programme. Downloadable tools are indicated in italics. (b) Professional category of the responders. (c) Distribution of the responders, according to the e-learnings and the conditions of training.



**Figure 2** (a) Evaluation of knowledge along the e-learning programme. The mean scores before (black line) and after (grey line) each e-learning (from #1 to #6) are expressed using a spider web chart, with a maximum of 20 points. (b) Boxplots display the median of scores before, after and at the final evaluation. The paired *t*-test was used (\*\*\*\*,  $P < 0.0005$ ; ns, not significant).

one before/after e-learning evaluation recorded. Each evaluation was scored from 0 to 20.

The programme recorded 1630 registrations and 367 responders, with a maximum of 334 responses for the first e-learning session (Fig. 1a). The main professional category of the responders was pharmacists (48%, 175), students (29%, 107) and pharmacy dispensers (15%, 55) (Fig. 1b). The preferred method of the e-learning was by rebroadcasting, with a large audience on days when pharmacies were closed (Fig. 1c).

Participants' level of knowledge increased after each e-learning session, especially after the first two sessions dedicated to pathophysiology and corticophobia (Fig. 2a). Subanalysis by professional groups (pharmacists, students and pharmacy dispensers) showed similar trends, suggesting that all participants benefited from the training. The median score of AD knowledge was 13.4 (12.7–14.1) before training, 16.7 (16.2–17.3) immediately after training and 16.0 (15.4–16.6) after nine months (Fig. 2b). In addition, we registered 2261 downloads of the educational tools that were made available for responders. Thus, the e-learning programme significantly improved pharmacists' AD management knowledge, which was sustained over a 9-month period.

Pharmacists' need for appropriate training in AD management has been reported extensively.<sup>3,4,5</sup> This may be due to a lack of education regarding skin diseases and dermatological care in pharmacology training programmes. Capitalizing on the possibilities presented by current digital tools, we report here the efficacy of a free e-learning programme that sustainably improved participants' level of knowledge regarding AD management. Interestingly, the most significant knowledge progression was observed after participants completed the AD pathophysiology and corticophobia e-learning sessions. This confirms that corticophobia remains an important issue that digital training could partially mitigate.<sup>6</sup> However, we observed a low response rate (23%) and a decline in responders' participation over time, possibly due to the high number of modules required to be completed and because the programme was free of charge.

In conclusion, the digital approach presented here focused on pharmacists and facilitated a transfer of skills and knowledge via tools shared with patients. Future interventions should evaluate the impact of a shortened version of this programme, integrating patients' experiences in the pharmacy context.

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## Conflicts of interest

ACG has nothing to disclose. JFS is a consultant for the Eczema Foundation. SM is working for the Eczema Foundation. PB is working for Pierre Fabre Laboratories. CJD is working for the Eczema Foundation. AN is an investigator for AbbVie, Eli Lilly, Incyte, LEO Pharma, Novartis and Sanofi; is a consultant for Pfizer Inc., AbbVie, Eli Lilly, Galderma, LEO Pharma, Novartis and Sanofi; is a speaker for AbbVie, Regeneron and Sanofi; and is on advisory boards for Pfizer Inc., AbbVie, LEO Pharma and Sanofi.

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