

Research team led by NTU Singapore finds information in a third of eczema apps inconsistent with international guidelines

A third (34 per cent) of eczema management mobile applications provide information that does not agree with international treatment and condition guidelines, a study led by Nanyang Technological University, Singapore (NTU Singapore) has found.

While many of the apps studied came with features such as information on the available therapies and a disease tracking function, a team led by **Associate Professor Josip Car** from the Lee Kong Chian School of Medicine (LKCMedicine) at NTU Singapore found a huge variation in the quality of apps available worldwide.

None of them fulfilled the complete set of criteria for educational information, tracking functions or health information principles, as set out by international eczema management recommendations such as the Guidelines for the Management of Atopic Dermatitis in Singapore and the UK's National Institute for Health and Care Excellence guidelines.

The study, published online this week in the [British Journal of Dermatology](#), highlights the need for mechanisms and guidelines to ensure app quality, and to guide personalised app selection for patients, caregivers and doctors. This is crucial for long-term conditions such as eczema, which are often managed in the community.

Eczema, characterised by itchiness and red, inflamed skin, is the top skin condition seen at the National Skin Centre in Singapore. Half the eczema patients in Singapore have to manage the condition throughout their lives. There is currently no cure for eczema, but maintenance treatments of daily moisturising can keep it under control.

Associate Professor Josip Car, who chairs the Health Services and Outcomes Research Programme at NTU's LKCMedicine, said the field of mobile health has great potential to lead to better patient care and self-management of eczema, provided that appropriate measures are taken to improve the quality standards of eczema management apps.

He said, "Smartphone apps have emerged as a novel approach to support the self-management of conditions that require long-term care, such as eczema. Our research shows that there is a large variance in the quality of eczema apps. While the assessed eczema self-management apps had shortcomings, certain apps did provide appropriate functions with accurate information and comprehensive tracking of eczema-related factors."

Matthew Gass from the **British Association of Dermatologists** said, "It is important that researchers continue to test the accuracy and safety of health apps. There has been an enormous boom in the number of dermatology apps available to the public, and with this comes the risk that some will be inaccurate, and even unsafe. Similar concerns have been raised in the past regarding skin cancer apps."

"App developers should clearly label the sources of their information and should make use of existing resources such as published National Institute for Health and Care Excellence guidelines in the UK. There is no doubt that apps will play a big role in the self-management of skin conditions, but we should have high standards for any health apps."

In this study, the NTU-led team assessed 98 apps for eczema management – 67 in English, 22 in Chinese, and 9 in Spanish. The researchers evaluated these apps using international eczema guidelines from Singapore, UK, US, Argentina and China to assess eczema educational information, eczema-specific tracking functions, and compliance with health information principles.

Of the apps assessed, 84 per cent provided educational information, 39 per cent tracking functions, and 13 per cent both. Among 38 apps with a tracking function, 82 per cent measured specific symptoms, disease severity or current skin condition and 89 per cent helped users to record medication usage including application of topical treatments. 34 per cent recorded environmental or dietary allergens.

In addition to the 34 per cent of apps providing information that was not in agreement with international guidelines, only 15 per cent provided information supported by international guidelines on pharmacological therapies and 16 per cent on non-pharmacological therapies. None of the included apps complied with all criteria for educational information, tracking functions or health information principles. 11 per cent of the apps failed to mention mainstay therapies such as the use of emollients and moisturisers.

Assoc Prof Car, who is also Director of the Centre for Population Health Sciences at NTU, said, “Perhaps the most useful way to address this issue would be to publish a list of recommended apps to aid clinicians in suggesting the appropriate options for eczema patients and caregivers.”

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Note to Editors:

[Paper](#) ‘Eczema apps conformance with clinical guidelines: A systematic assessment of functions, tools and content’ published in the *British Journal of Dermatology*
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