Dermatology
Learning

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Dermatology VR Resource

Collaboration between

Blended Learning Team

Physicians Associate Education

Overview

Designed with Physician Associates, the Dermatology VR Resource is an in-house virtual reality learning tool developed at LTHTR to transform dermatology education. It provides immersive, scenario-based training and features a diverse library of skin conditions across multiple skin tones, addressing key gaps in traditional teaching materials. By offering a more inclusive and engaging learning experience, it helps prepare learners for real-world clinical encounters with greater confidence and cultural competence.

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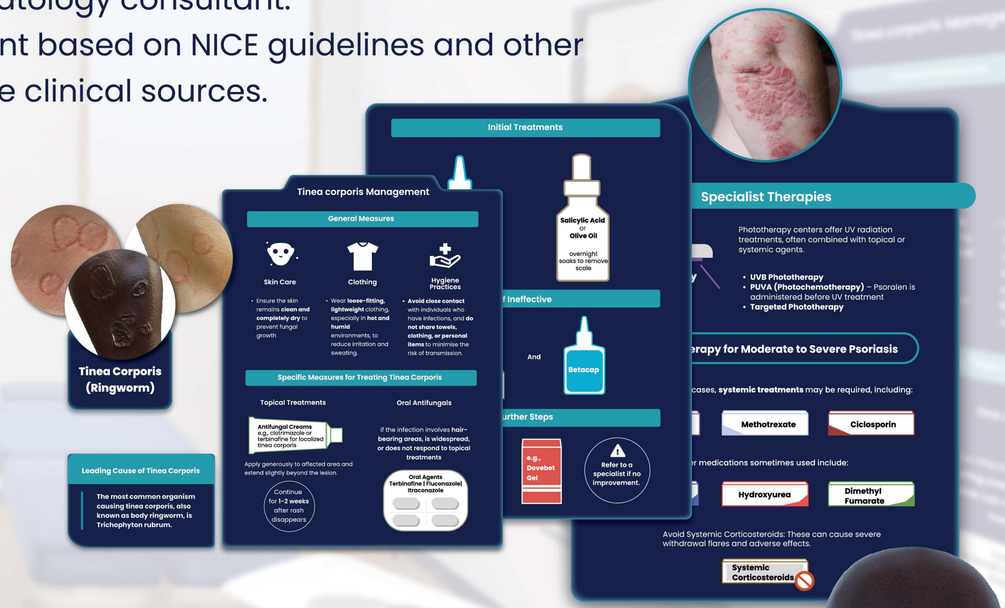
Feature 1 • Three Interactive Digital 3D Patients

- Includes three skin tones with a range of dermatological conditions.
- Customise lesion location and severity to support diagnostic skill development.

Feature 2 • Visual Learning Material

- **46** high-quality dermatological images approved by dermatology consultant.
- All content based on NICE guidelines and other reputable clinical sources.



Feature 3 • Simulated Skin Inspection

- Examine skin conditions up close using a virtual magnifying tool.
- Practice real-life diagnostic techniques in a realistic VR environment.

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Top View of Patients' Waiting Room

One of the two main areas in the Dermatology VR is the patients' waiting room. In VR experience, users are guided by a virtual Physician Associate, Rachel, who provides a brief introduction. From there, users can choose to begin with either the VR Tutorial or the Learning Mode to start exploring dermatology content.

*The patients' waiting room has been designed in accordance with **Health Building Note 00-01: General Design Guidance for Healthcare Buildings** by UK Department of Health, ensuring a realistic and compliant virtual environment.*

Patients' waiting room


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Rachael
Hi, and welcome to Dermatology Learning VR!
Clinical Room
Dermatology
Eczema
Melanoma
Patients' waiting room

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Patients' waiting room

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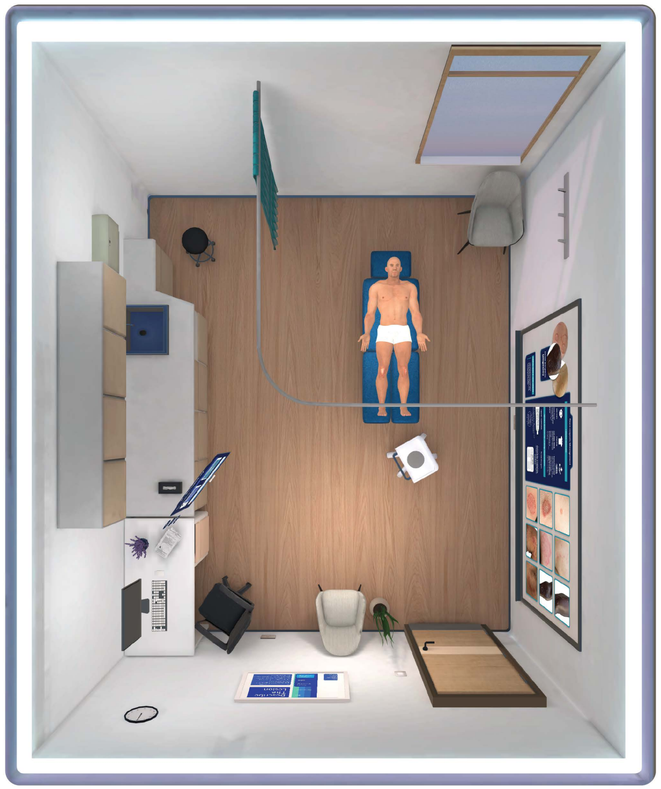
The Clinical Room (Consultation Room) is where users engage in dermatology learning within the VR experience. Users can explore a range of variables, including different skin conditions (currently psoriasis and tinea corporis), patient ethnicity (with varied skin tones), patient positioning, and severity levels of each condition.

Detailed information about each rash is displayed on a whiteboard within the room. Additionally, users can utilise a virtual magnifying glass to examine symptoms more closely and interact with digital patients—enhancing diagnostic skills and preparing them for real-world clinical practice.



Top View of Clinical Room

*The Clinical Room has been designed in accordance with **Health Building Note 00-03: Clinical and Clinical Support Spaces** by UK Department of Health.*

Clinical room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Menu
Content
Help
Dermatology
Learning
Skin Condition
Psoriasis
Position
Anatomical
Prone
Supine
Patients
David (Caucasian)
Lee (Asian)
Kofi (African-Caribbean)
Skin Condition Level
Mild
Moderate
Severe
Symptoms
Clinical room

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Clinical room

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Based on high-quality dermatological images approved by a dermatology consultant, a range of rashes at varying severity levels has been developed across three different skin tones, ensuring clinical accuracy and educational value.

Rashes Creation

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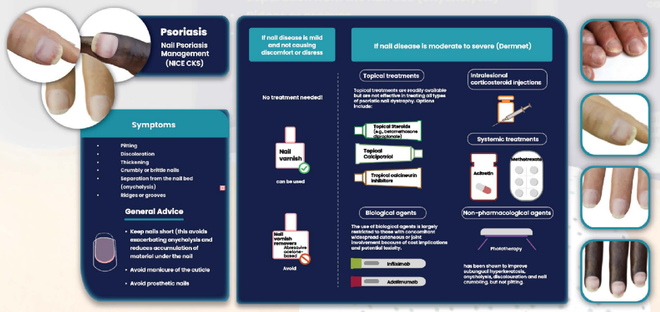
Users can use a virtual magnifying glass to closely examine skin rashes in detail. The digital patient's position can be adjusted to provide better visual access to affected areas.



By selecting a rash, additional information—including treatment guidance and dermatological reference images—is displayed on the interactive whiteboard for further learning.

Information Board

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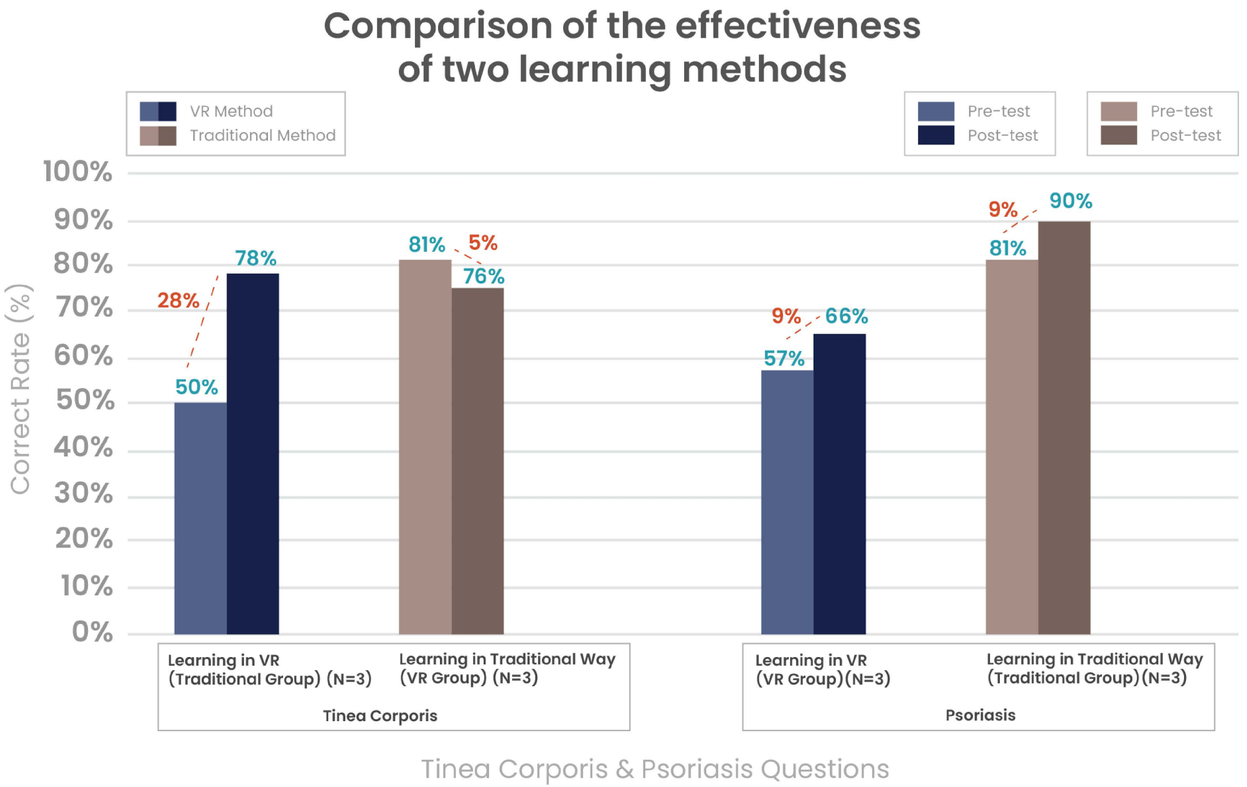
User Testing

A pilot study with six medical students evaluated the Dermatology VR application for usability and learning effectiveness.

The app received an **excellent** SUS usability score of 82.9 (industry average: 68). Participants showed improved knowledge, with a **9% increase for Psoriasis** and a **28% increase for Tinea Corporis.** VR outperformed traditional methods for Tinea Corporis, while both approaches were equally effective for Psoriasis.

While results are promising, the small sample size limits generalisability. As a next step, we plan to conduct further research with a larger and more diverse participant group to validate these findings and assess the long-term impact of VR-based dermatology education.



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Demo Video Link
https://vimeo.com/1089057382/c281254f4b?share=copy