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The Effect of Technology on Skin Development and Progress

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Abstract : Dermatology is often a neglected specialty in low-resource settings despite the high morbidity associated with skin disease. This becomes even more significant when associated with HIV infection, as dermatological conditions are more common and aggressive in HIV-positive patients. African countries have the highest HIV infection rates, and skin conditions are frequently misdiagnosed and mismanaged because of a lack of dermatological training and educational material. The frequent lack of diagnostic tests in the African setting renders basic clinical skills all the more vital. This project aimed to improve the diagnosis and treatment of skin disease in the HIV population in a district hospital in Malawi. A basic dermatological clinical tool was developed and produced in collaboration with local staff and based on available literature and data collected from clinics. The aim was to improve diagnostic accuracy and provide guidance for the treatment of skin disease in HIV-positive patients. A literature search within Embassy, Medline and Google Scholar was performed and supplemented through data obtained from attending 5 Antiretroviral clinics. From the literature, conditions were selected for inclusion in the resource if they were described as specific, more prevalent, or extensive in the HIV population or have more adverse outcomes if they develop in HIV patients. Resource-appropriate treatment options were decided using Malawian Ministry of Health guidelines and textbooks specific to African dermatology. After the collection of data and discussion with local clinical and pharmacy staff, a list of 15 skin conditions was included, and a booklet was created using the simple layout of a picture, a diagnostic description of the disease and treatment options. Clinical photographs were collected from local clinics (with full consent of the patient) or from the book 'Common Skin Diseases in Africa' (permission granted if fully acknowledged and used in a not-for-profit capacity). This tool was evaluated by the local staff alongside an educational teaching session on skin disease. This project aimed to reduce uncertainty in diagnosis and provide guidance for appropriate treatment in HIV patients by gathering information into one practical and manageable resource. To further this project, we hope to review the effectiveness of the tool in practice.

Keywords : prevalence and pattern of skin diseases, impact on quality of life, rural Nepal, interventions, quality switched ruby laser, skin color river blindness, clinical signs, circularity index, grey level run length matrix, grey level co-occurrence matrix, local binary pattern, object detection, ring detection, shape identification
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