LETTERS TO THE EDITOR

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Integrating artificial intelligence and telehealth services in psychodermatology

Dear Editor,

Psychodermatology is an emerging discipline of medicine that focuses on the mind–skin connection and its disorders.[1] Roberts et al.[2] described psychodermatology as dermatologic manifestations caused by psychiatric disorders, psychiatric symptoms caused by dermatologic disorders, and the effects of psychological stressors and the physiologic response to dermatological disorders. Tohid et al.[3] suggest a close association of 13 primary psychiatric disorders causing dermatological diseases.

Different working models proposed to set up a psychodermatology clinic with a multidisciplinary team include psychiatrists, dermatologists, and psychologists. Consultation time, affordability, communication, and coordination between the team and the patients are constraints that affect service delivery. Only 13.75% of dermatologists have knowledge of psychocutaneous disorders.[4]

Artificial intelligence (AI) has increased clinical relevance for therapeutic applications in dermatology and psychiatry via telehealth services. Electronic Health Records data are obtained via phone and video interaction during telehealth appointments. These data help in advance genotyping and imaging with a detailed clinical history of patients in dermatology and psychiatry.[5,6] No implications of artificial intelligence are reported on psychodermatological practice. The current psychodermatology is based on in-person history, examinations, and questionnaire-based interviews related to the quality of life.[3]
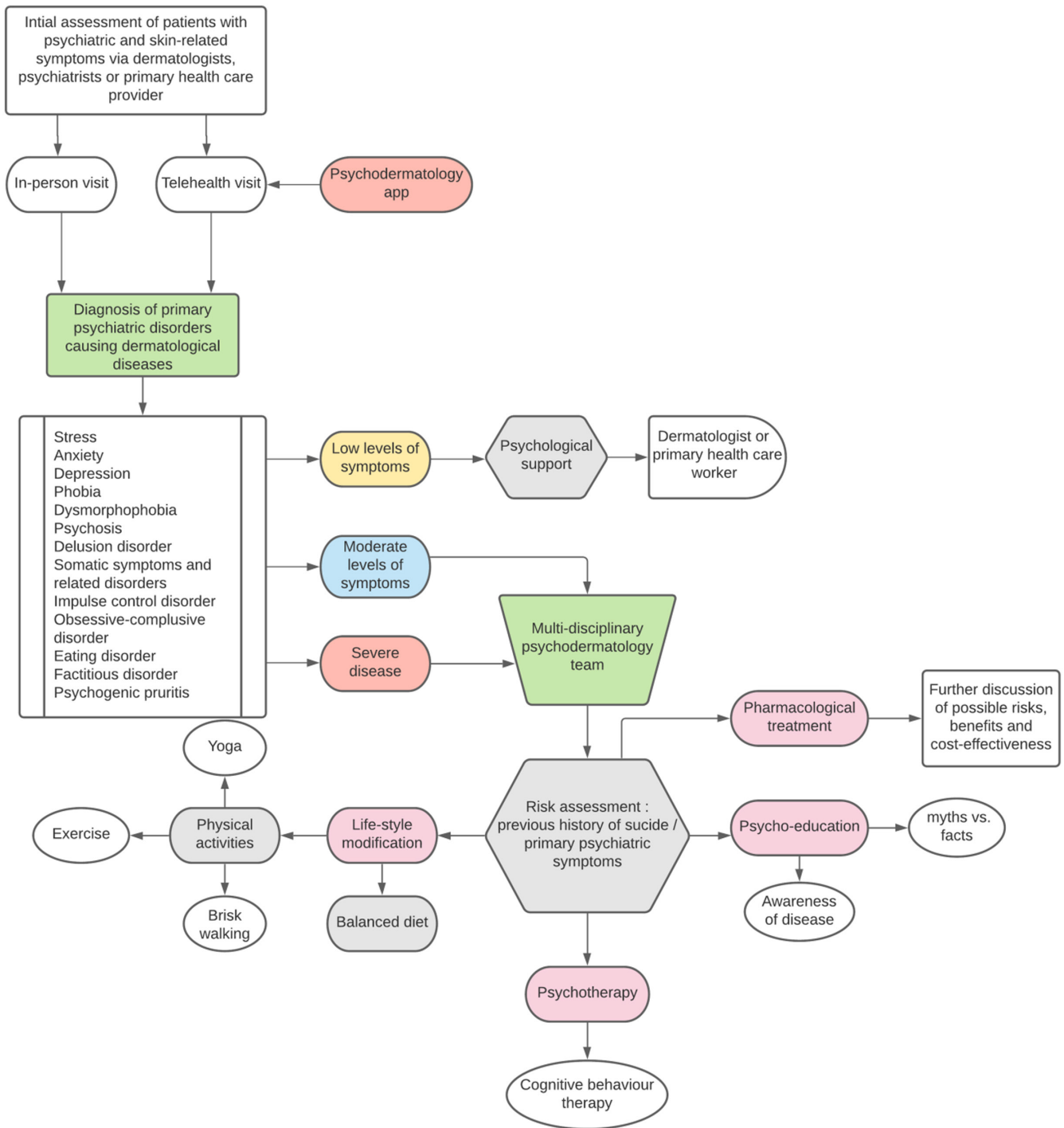
The application of AI in psychodermatology in the same manner as in telehealth management in psychiatry and dermatology is possible. AI can create algorithms with the integration of psychodermatology disease characteristics and the components to help in screening, visual-based diagnosis, management, and treatment. This will reduce the burden with paperwork, time consumption, ensure reliability issues, doctor availability, and increase patient compliance to follow-up. AI uses a user-friendly interface that is easier to use, cost-effective, and accessible to benefit the patient, and outweighs risks.[5] Since psychocutaneous disorders are complex, the patient's condition worsens with time without immediate multidisciplinary care.[3] In this sequential manner, a team of doctors and IT specialists can work in close association with the patient. (Figures 1 and 2). AI chatbots, phone, and video call will be responsible for obtaining information from patients via questionnaires, photographs of skin lesions, and detailed history of chief complaints. This information will be used in initial assessments by the doctors to create preliminary diagnosis. After diagnosis, the software will transfer information to the multidisciplinary team (Figure 2). Expert systems (ES), a component of AI susceptible to gathering expert knowledge, facts, and reasoning methods, is used in our proposed model. They use inferential methods to help with decision-making, problem-solving, and simulating physician knowledge. Image interpretation and diagnosis support are among the applications of ES. The rule-based reasoning (RBR) and case-based reasoning (CBR) subcomponents are the most widely employed in the ES system. The RBR enables an expert to transfer information to a computer. The computer assists in the resolution of issues that normally require the assistance of an expert. Clinical features must be specified in CBR in order to extract other cases and must be selective to avoid retrieving case studies.[7]

The standard guideline on AI-embodied applications on psychocutaneous disorder requires the regulatory body to approve and scrutinize bias in this intimidation, abuse, and privacy issues during the therapy. Physicians should maintain confidentiality and equity in the management of patients, under the strict supervision of administration.[6] Healthcare workers should receive further training for working on tele-psycho dermatological systems.

Tele-psychodermatology approach using psychodermatology software

FIGURE 1 Tele-psychodermatology approach using psychodermatology software

FIGURE 2 Psychodermatology software application
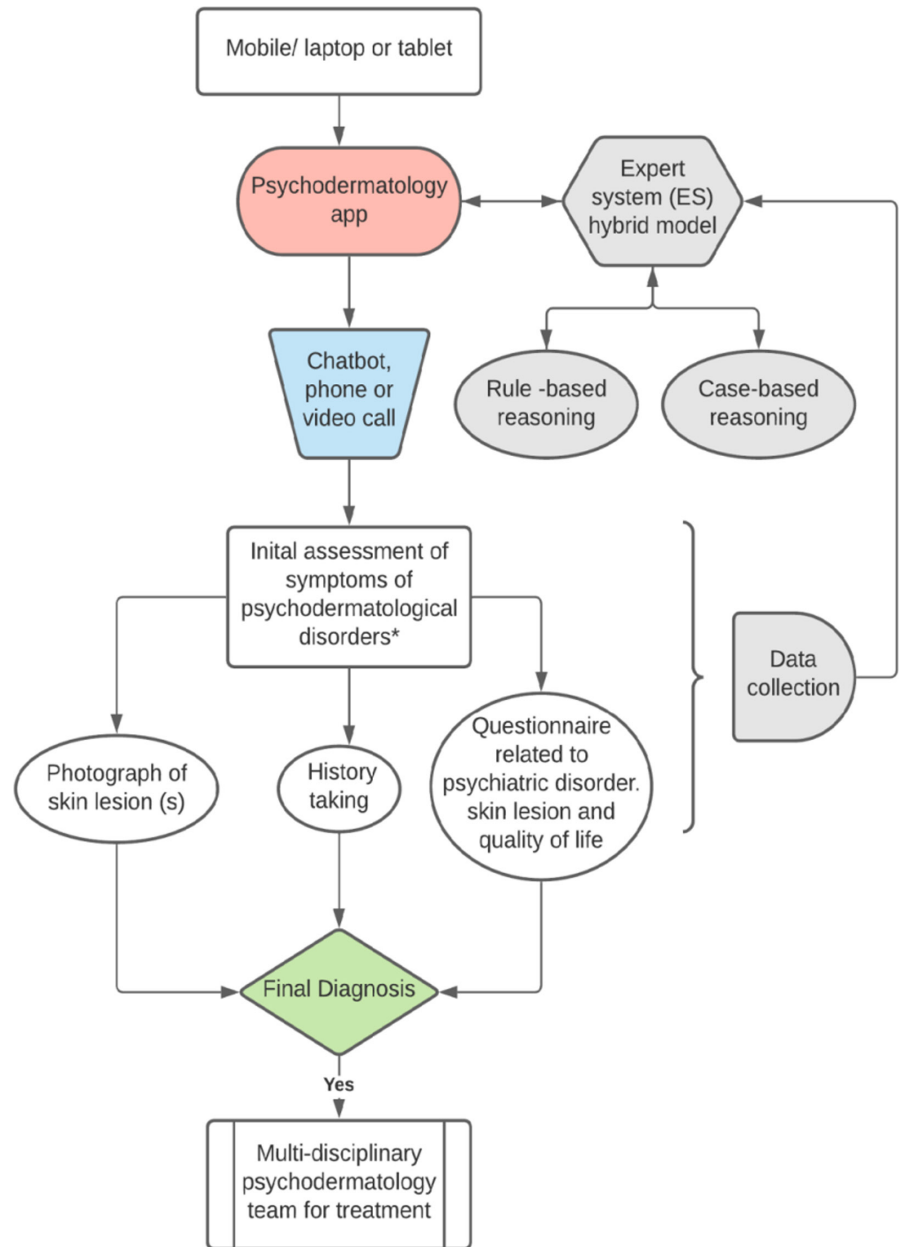
Psychodermatology software application

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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