Posters

BT15

A systematic literature review of artificial intelligence-based smartphone applications for the diagnosis of malignant melanoma: with consideration for skin of colour

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Cutaneous malignant melanoma is a global health problem, with a rising incidence and significant mortality risk. Earlier diagnosis correlates with improved survival. Therefore, non-invasive diagnostic techniques offer much promise. Owing to their powerful processing systems and accessibility, smartphones are becoming recognized as potential skin-screening tools. There have been advances in developing smartphone-based artificial intelligence (AI) models to assess the risk of skin cancer in images of suspicious skin lesions. These applications are currently available to the consumer; however, concerns have been raised regarding the efficacy and safety of these applications. This systematic literature review assesses the strengths and limitations of these applications for the diagnosis of melanoma. In addition, this review assessed if skin colour is a variable considered in the testing and/or development of these applications. Patients with skin of colour are a demographic that may particularly benefit from such applications owing to the higher rates of delayed diagnoses observed and poorer long-term outcomes. MEDLINE, Embase, Scopus and Web of Science were searched in July 2021 to identify articles that assessed smartphone-based AI models that analyse images for detection of melanoma. In total, 23 articles were eligible for review; 13 presented original research for the development of new smartphone applications. For this group the ranges for sensitivity, specificity and accuracy were 70–98%, 70–96% and 75–95%, respectively. The remaining 10 articles were designed to validate existing smartphone applications and the data from these studies were recorded separately. A greater degree of variation was observed in the results from this group. The recorded ranges for sensitivity, specificity and accuracy were 6·8–93%, 9–100% and 9·7–100%, respectively. Our review identified three studies that disclosed patient demographics and, of these, only one study disclosed the number and variety of skin types included. No studies reported testing applications on different skin types. This systematic review demonstrated that there is wide variation in efficacy of smartphone applications diagnosing malignant melanoma. Skinvision was the only application that had been tested by multiple studies. In addition, several limitations relating to the development and testing of smartphone applications were identified, including a lack of clarity on skin tones included in image databases, and lack of inclusion of images captured by amateurs. Further development and additional regulation of this technology is necessary in order to ensure that applications are developed safely.

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Telephone consultations in the COVID-19 era versus pre-COVID face-to-face consultations: a survey of secondary care dermatology patient perceptions

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Since the first UK national COVID-19 lockdown, dermatology clinics have heavily relied on telephone consultations. However, sparse literature compares this modality with face-to-face (F2F) consultations in a cohort that has experienced both consultation types. This single-centre quality-improvement project aims to assess the role of telephone consultations in secondary care dermatology during the UK COVID-19 era by surveying patients who had both F2F and telephone consultations. We invited 156 adult patients in mid-December 2021 by telephone to answer five questions to determine satisfaction and consultation preference. Eligible patients had attended a telephone consultation(s) from January to February 2021 and an F2F consultation(s) 1 year before the first UK national lockdown for the same condition(s). The final cohort consisted of 44 women and 34 men with a median age of 52·5 years. The most common responses chosen to describe F2F consultation care quality were 'very good' (56%; n = 43) and 'good' (32%; n = 24). Most patients then felt that the telephone consultations were 'good' (37%, n = 28) or 'satisfactory' (25%, n = 19). Additionally, while almost half of the patients (47%, n = 36) thought that telephone consultations led to the same care as F2F, 41% (n = 31) stated this care was worse. The majority of patients (79%, n = 60) preferred F2F, with 13% (n = 10) expressing no preference. The most common reasons for an F2F preference were the ability to show skin (n = 47), ease of describing skin (n = 16) and that the consultation felt more natural (n = 7). Lack of travel (n = 3), convenience (n = 2) and safety (n = 2) were the prevailing reasons for telephone preference. Patients who have had both F2F and telephone consultations have higher satisfaction with F2F consultations, but most believe this modality leads to the same care as telephone consultations. Moreover, patients have a strong preference for F2F. This project reflects the overall patient experience, rather than opinions at one time-point, and disseminates reasons for preference but is limited by sample size, recall bias and social desirability bias.