Electronic screening for mental illness in patients with psoriasis

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**Conflicts of interest:** None to declare.

**Data availability:** All data are held on a restricted server at King’s College Hospital NHS Foundation Trust behind the Trust firewall and in line with Trust policies like all other clinical data. Data held on the IMPARTS server is only accessible to staff members working on the IMPARTS programme, and data processors by approval. Information relevant to patient care is added to the patient’s electronic care record. Data may be used to monitor the delivery of the IMPARTS programme, for clinical audit and service evaluation. Aggregated IMPARTS data may be used to publish research at various levels.

**Ethics statement:** IMPARTS programme ethical approval (IMPARTS Research Database REC reference: 12/SC/0422). All applications to use data collected routinely under the IMPARTS programme are scrutinized by a patient-led oversight committee to ensure that the use of data is appropriate and in line with ethics committee approval.

Dear Editor, Individuals with psoriasis have an increased risk of depression, anxiety, and severe mental illness.¹,² National guidelines recommend assessing for mental health alongside psoriasis disease severity and disease impact (NICE). Systematic screening for depression and anxiety symptoms in tertiary centres has identified a significant burden of disease³ and has led to increased use of mental health care and improvement in psoriasis and quality of life.¹,⁴

This cross-sectional study examined the use of screening for mental illness in a large centre serving London and Southeast England. Individuals with a confirmed psoriasis diagnosis attending Guy’s and St Thomas’ NHS Foundation Trust and King’s College Hospital, London (January 2017 to January 2020) were invited to answer a series of questions about their health at every outpatient visit. A touchscreen tablet-based programme, Integrating Mental and Physical Healthcare: Research Training and Services (IMPARTS) was used to collect patient-completed screening questionnaires including the Patient Health Questionnaire (PHQ-9)⁵, Generalized Anxiety Disorder scale (GAD-7)⁶ and Dermatology Life Quality Index (DLQI)⁷. IMPARTS is a multifaceted platform of clinical and research services that integrates mental
healthcare into routine care\textsuperscript{3} Completed questionnaire data automatically populates the patient’s electronic health record with advice on mental health referral if questionnaire scores suggest a possible mental health condition. We performed statistical analyses using Stata. We assessed cross-sectional correlations between screening questionnaires using Spearman’s correlation coefficient. We used linear regression, adjusting for age, sex and year of visit and clustering for repeat questionnaires by individual patients to examine the relationship between DLQI and mental health.

Engagement in screening for mental illness rose gradually over time with substantial month-to-month variation (Figure panel A). In total 285 individuals provided data. Of these, 217 provided data at more than one visit (median number of visits 3, interquartile range [IQR] 2-4) over a median time of 1.5 years (IQR 0.9-2). Median age was 42 years (IQR 31-53), with a slight male predominance (n=147, 52%). On the first recorded visit, a third of the cohort screened positive for psoriatic arthritis (Psoriasis Epidemiology Screening Tool).

At first visit, 84% (n=238) of the cohort reported that their psoriasis had affected their quality of life (DLQI score >2). Quality of life impairment was reported as very large (DLQI score 11-20) by 32% (n=90) or extremely large (DLQI score 21-30) by 17% (n=47). The depression screen, defined by a positive answer to either of the first PHQ9 questions, was present in 35% (n=100). The anxiety screen, defined by a GAD7 score >5 was positive in 29% (n=82). Severe depressive symptoms (PHQ-9 >=20) were reported by 22% (n=60) and severe anxiety symptoms (GAD-7 >=15) were reported by 23% (n=64).

When examining across all visits, quality of life impairment was frequently reported (78% of visits had a DLQI score >2). Median DLQI score was 8 (IQR 2-16). Depression screen was positive on 30% of visits and anxiety on 25% of visits. Median PHQ-9 score was 1 (0-5) and GAD-7 was 2 (0-10). Severe depression and anxiety symptoms were more frequently reported by women than men [PHQ-9: women 24%, men 15%, GAD-7: 25% versus 14%], as was severe quality of life impairment [47% versus 33%].
Across all visits, the DLQI score moderately correlated with the PHQ-9 score (Rho 0.52) (Figure panel B) and weakly correlated with the GAD-7 scores (Rho 0.41) (Figure panel C). In linear regression, depression and anxiety were associated with DLQI scores (PHQ-9: β=0.48, 95% CI: 0.38 to 0.56, p<0.001, GAD7: β= 0.29, 95% CI: 0.21 to 0.36, p<0.001). For each one unit increase in PHQ9, DLQI score increased by half a point (R-squared 0.27), and for each one unit increase in GAD7, DLQI increased one third of a point (R-squared 0.18).

Our study has demonstrated increasing engagement in the screening of psychological wellbeing over time, and the burden of depression and anxiety in people with psoriasis. We demonstrated a strong relationship between mental health and quality of life. Our findings emphasise the importance of holistic care and managing individual’s mental health alongside their psoriasis to improve overall quality of life.

References
1. Elizabeth I Adesanya, Julian Matthewman, Yochai Schonmann, Joseph F Hayes, Alasdair Henderson, Rohini Mathur, Amy R Mulick, Catherine H Smith, Sinéad M Langan, Kathryn E Mansfield, Factors associated with depression, anxiety and severe mental illness among adults with atopic eczema or psoriasis: a systematic review and meta-analysis, Br J Dermatol, 2022;, ljac132,
Figure legend

Figure 1 (a) Monthly IMPARTS engagement in absolute number of visits between 2017 and 2020; (b) Scatter plot of DLQI and PHQ9 score with regression prediction line; (c) Scatter plot of DLQI and GAD7 scores with regression prediction line.
Figure 1

A. Monthly IMPARTS engagement in absolute number of visits between 2017 and 2020

Scatter plot of DLQI and (B)PHQ9 and (C)GAD7 scores with regression prediction line

Figure 1
173x230 mm (x DPI)