Dermatology Practical & Conceptual

Psoriasis Is Associated With Increased Risk of Psychiatric Disorders and Sexual Dysfunction in a Case-Control Study of 29,912 Patients

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Key words: Comorbidities, Psoriasis, Psychiatric disorders, Risk factors, Skin disease

Citation: Marella P, Lipner SR. Psoriasis Is Associated With Increased Risk of Psychiatric Disorders and Sexual Dysfunction in a Case-Control Study of 29,912 Patients. *Dermatol Pract Concept*. 2024;14(4):e2024256. DOI: https://doi.org/10.5826/dpc.1404a256

Accepted: May 15, 2024; **Published:** October 2024

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Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

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Introduction

Psoriasis is a chronic skin condition that may significantly impact patients' quality of life and mental health [1]. It has been suggested that psoriasis is associated with psychiatric disorders, but this has been relatively understudied. Therefore, we aimed to explore potential associations between psoriasis and psychiatric disorders by conducting a nested matched case-control study using a national database.

Case Presentation

The National Institute of Health *All of Us* database was queried 8/31/23–9/13/23 for psoriasis cases using International Classification of Diseases (ICD) and Systematized Nomenclature of Medicine (SNOMED): ICD10CM-L40 and SNOMED 9014022, and controls (1:3) matched across age, sex, race, ethnicity, and smoking status. Comorbidity frequencies of psoriasis and control patients were determined for anxiety (concept code: 441542), depressive disorder (concept code: 440383), mood disorder (concept code: 444100), sleep apnea (concept code: 313459), sexual dysfunction (concept code: 4237140), personality disorder (concept code: 441838), somatoform disorder (concept code: 435784), eating disorder (concept code: 439002), insomnia (concept code: 436962), bipolar disorder (concept code: 436665), substance abuse (concept code: 4279309), schizophrenia (concept code: 435783), and dermatomyositis (concept code: 80182). Dermatomyositis was used as a negative control comorbidity with no difference across control and psoriasis patients ($P>0.05$). Wald's test compared the two groups ($P<0.05$).

There were 7,478 psoriasis cases, with mean age 61.5 years, with 59% females, 72.7% White and 7.6% Black patients, and 22,434 matched controls, with similar demographics between groups (all $P>0.05$, Table S1). Psoriasis patients had increased prevalence of anxiety (48.5%, OR 3.72 [3.52–3.93]), depression (45.1%, OR 3.61 [3.41–3.82]), sleep apnea

(31.6%, OR 3.27 [3.07–3.48]), sexual dysfunction (3.9%, OR 3.17 [2.68–3.74]), somatoform disorder (3.0%, OR 3.10 [2.57–3.74]), eating disorder (2.2%, OR 2.92 [2.36–3.62]), insomnia (26.0%, OR 2.79 [2.61–2.98]), and schizophrenia (1.7%, OR 2.17 [1.72–2.72]) (Table 1, Figure 1).

Discussion

Our study shows associations between psoriasis and psychiatric disorders, including depression, anxiety, and schizophrenia, which reinforces findings from previous studies. For example, a meta-analysis of population-based studies reported an association between psoriasis and depression (OR 1.57 [1.40–1.76]) [2], a meta-analysis of case-control studies showed a correlation between psoriasis and anxiety (OR 1.48 [1.18–1.85]) [3], and a meta-analysis of observational studies reported an association between psoriasis and schizophrenia (OR 1.41 [1.19–1.66]) [4].

We also found associations between psoriasis, sleep disorders, sexual dysfunction, and somatoform disorder,

Table 1. Psychiatric Comorbidity Frequency of Psoriasis vs Control Patients.

Co-diagnoses, *n* (%)	Psoriasis Patients (*n*=7478)	Case Controls (*n*=22,434)	Odds Ratio	p-value
Anxiety	3628 (48.5)	4536 (20.2)	3.72 [3.52-3.93]	< 2.2 x 10^-16
Depressive Disorder	3375 (45.1)	4166 (18.6)	3.61 [3.41-3.82]	< 2.2 x 10^-16
Mood Disorder	3533 (47.2)	4474 (19.9)	3.60 [3.40- 3.80]	< 2.2 x 10^-16
Sleep Apnea	2365 (31.6)	2779 (12.4)	3.27 [3.07-3.48]	< 2.2 x 10^-16
Sexual Dysfunction	289 (3.9)	281 (1.3)	3.17 [2.68-3.74]	< 2.2 x 10^-16
Personality Disorder	316 (4.2)	312 (1.4)	3.13 [2.67-3.67]	< 2.2 x 10^-16
Somatoform Disorder	225 (3.0)	222 (1.0)	3.10 [2.57-3.74]	< 2.2 x 10^-16
Eating Disorder	165 (2.2)	172 (0.8)	2.92 [2.36-3.62]	< 2.2 x 10^-16
Insomnia	1948 (26.0)	2517 (11.2)	2.79 [2.61-2.98]	< 2.2 x 10^-16
Bipolar Disorder	600 (8.0)	724 (3.2)	2.62 [2.34-2.93]	< 2.2 x 10^-16
Substance Abuse	927 (12.4)	1293 (5.8)	2.31 [2.12-2.53]	< 2.2 x 10^-16
Schizophrenia	128 (1.7)	179 (0.8)	2.17 [1.72-2.72]	< 2.2 x 10^-16
Dermatomyositis	23 (0.31)	52 (0.23)	1.33 [0.81-2.17]	0.13

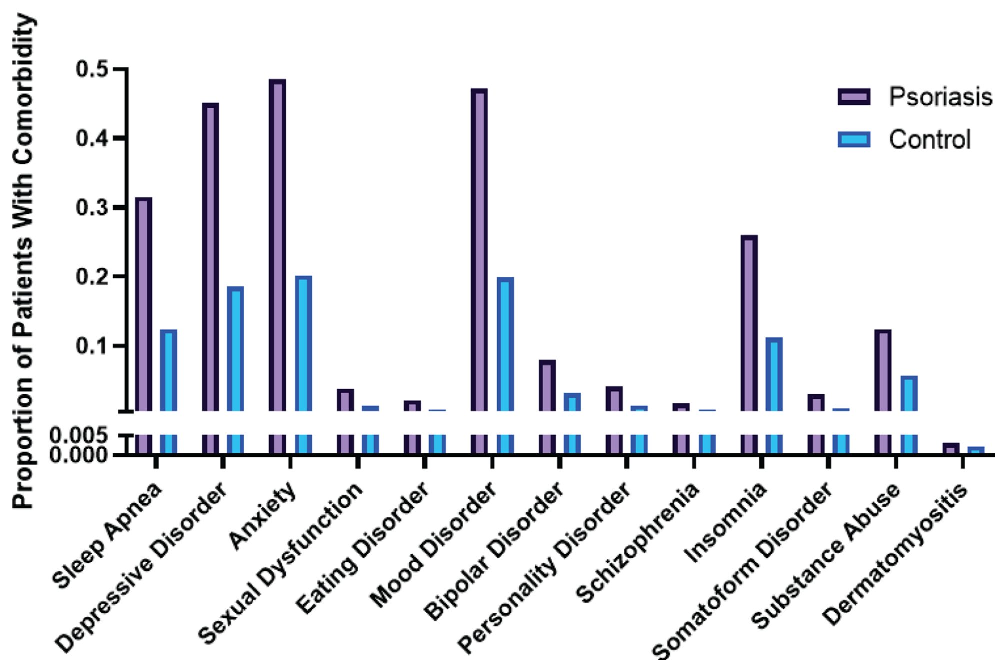

Figure 1. Proportion of patients with psychiatric comorbidities compared across psoriasis and control patients. All $P<0.05$ except for dermatomyositis, which serves as a negative control and had no significant difference in proportion in psoriasis and control patients with this comorbidity ($P>0.05$).

corroborating prior studies. A meta-analysis of 390 studies reported that sleep disorders and sexual dysfunction were the most common psychiatric comorbidities in psoriasis patients, affecting 50% and 71.3% of patients, respectively [5]. A 12-year population-based cohort study reported increased somatoform disorder prevalence in psoriasis patients (HR 1.60 [1.26–2.03]) [6].

Limitations include retrospective design, lack of disease severity information, lack of control for confounding variables, including socioeconomic status, and potential miscoding.

Conclusions

Our study strengthens previously reported associations between psoriasis and psychiatric disorders. We recommend that dermatologists screen for psychiatric comorbidities in psoriasis patients, including for depression, anxiety, somatoform disorder, schizophrenia, and sexual dysfunction, using the Patient Health Questionnaire, Positive and Negative Syndrome Scale, and Sexual Functioning Questionnaire, which would allow for referral to psychiatrists or urologists, respectively, for improved treatment outcomes.

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