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# Impact of atopic dermatitis on health-related quality of life and productivity in adults in the United States: An analysis using the National Health and Wellness Survey

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**Background:** Given its public health impact, there is need for broad and representative data on the humanistic burden of atopic dermatitis (AD).

**Objective:** To establish the humanistic burden of AD in US adults.

**Methods:** Data were from the 2013 US National Health and Wellness Survey; AD self-reports were propensity-matched with non-AD controls and with psoriasis controls. Bivariate analyses were conducted on burden outcomes between the AD and control groups.

**Results:** Demographics and baseline characteristics were comparable between matched groups. Subjects with AD (n = 349) versus non-AD controls (n = 698) had significantly higher rates of anxiety, depression, and sleep disorders (29.8%, 31.2%, and 33.2% vs 16.1%, 17.3%, and 19.2%, respectively [all  $P < .001$ ]); a lower Short Form-36 v2 mental component summary score (44.5 vs 48.0, respectively [ $P < .001$ ]); a lower physical component summary score (47.6 vs 49.5, respectively [ $P = .004$ ]), and lower health utilities (0.67 vs 0.72, respectively [ $P < .001$ ]) in addition to a higher work absenteeism rate (9.9% vs 3.6%, respectively [ $P < .001$ ]) and activity impairment rate (33.6% vs 25.2%, respectively [ $P < .001$ ]). Subjects with AD and psoriasis controls (n = 260 each) showed similar impairment in health-related quality of life and productivity.

**Limitations:** Data were self-reported.

**Conclusion:** AD is associated with a substantial humanistic burden that is similar in magnitude to that of psoriasis, which is also recognized for its debilitating symptoms, indicating the need for more effective treatments for AD. (J Am Acad Dermatol 2017;77:274-9.)

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Pennsylvania) from Abbvie, Eli Lilly, Janssen, Novartis Corp, Regeneron, Sanofi, and Pfizer Inc.; and he has received payment for CME work related to psoriasis. Dr Gelfand is also a co-patent holder of Resiquimod for the treatment of cutaneous T-cell lymphoma.

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**Key words:** atopic dermatitis; burden of dermatitis; burden of disease; eczema; mental health; mood disorder; patient-reported outcomes; productivity; quality of life; sleep disorder.

Atopic dermatitis (AD) is a complex immune-mediated, chronic inflammatory skin condition characterized by intense pruritus,<sup>1-3</sup> with a prevalence of at least 3% in the US general population.<sup>4,5</sup> Presenting either as adult-onset disease or beginning in childhood/infancy and persisting or recurring in adulthood,<sup>4,6,7</sup> adult AD has a prevalence that has been estimated as being on the order of 2% to 10%, with moderate or severe disease prevalent in 34% to 46% of adult patients with AD.<sup>8,9</sup>

The substantial public health impact of AD in terms of both population-level health loss and attendant disability was established by the 2010 Global Burden of Skin Disease project and more recently validated by the Cochrane Skin Group in 2014.<sup>10,11</sup> Whereas skin conditions in general were the fourth leading cause of nonfatal disease burden across all chronic diseases, AD was particularly implicated as causing the greatest population-level disability within the skin disease classification alone.<sup>10</sup> To inform further national and global health debate on prioritizing skin diseases on health care agendas,<sup>11</sup> further broad and representative studies of AD are required, particularly from a humanistic perspective.

The objective of this study was to establish the humanistic burden of AD in the US adult general population in terms of mood and sleep disorders, effects on health-related quality of life (HRQoL), and impairment of work productivity (including lost wages) and everyday activities and also to assess how variations in AD severity affect this burden. Further examination of these outcomes in patients with psoriasis was conducted to provide contextualization against another common chronic inflammatory skin disease that is widely recognized to be associated with high prevalence and significant patient impairment.<sup>5,10,12-14</sup>

## METHODS

### Study design

This cross-sectional study investigated the burden of adult AD in the United States on the basis of the

2013 US National Health and Wellness Survey (NHWS), a large, Internet-based, general population survey fielded to randomly sampled patient segments

of the population 18 years and older (Kantar Health, New York, NY). The survey covered patient diagnosis and health profiles, demographics, attitudes and approaches to health care, patient-reported outcomes, and health care resource utilization. The NHWS sample is drawn from an Internet panel maintained by Lightspeed Research (Warren Township, NJ). Panel members are recruited through opt-in e-mails, partner panels, e-newsletter campaigns, banner place-

ments, and affiliate networks, with registration via unique e-mail addresses and passwords, after completion of an in-depth demographic profile.

### Subjects

The survey sample for AD was identified on the basis of the following 2 questions, for which inclusion in the AD sample required “yes” to be chosen for both questions: “Which of the following conditions (dermatitis/eczema/AD) have you experienced in the past 12 months?” If “yes” was chosen for AD, the following question was asked: “Has your AD been diagnosed by a physician?” Those who did not report any of the conditions were eligible to be placed into the non-AD control group before a propensity matching process.

Subjects with AD were further categorized into 2 severity groups (mild vs moderate or severe) on the basis of self-reported disease severity in response to the question, “How severe is your AD? Mild/moderate/severe.” Additionally, subjects with psoriasis were selected and similarly categorized on the basis of whether respondents had ever experienced psoriasis (and if so, whether their symptoms had ever been diagnosed as psoriasis by a physician) and their self-reported disease severity. Respondents who reported a diagnosis of both conditions were excluded from the analysis. Severity for psoriasis was reported on the basis of the following question: “According to the National Psoriasis Foundation, the palm of the hand equals 1

### CAPSULE SUMMARY

- Relative to other chronic diseases, the public health impact of atopic dermatitis (AD) is high.
- There is limited knowledge of the humanistic burden of AD in adult patients.
- Similar to psoriasis, which is associated with a high burden, AD has significant impact on mood and sleep, health-related quality of life, work productivity, and everyday activities.

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