UC Davis
Dermatology Online Journal

Title
The effect of perceived health status on satisfaction with care among acne patients: A population-based study

Permalink
https://escholarship.org/uc/item/8n41c4s5

Journal
Dermatology Online Journal, 29(5)

Authors
Kingston, Paige
Korouri, Edwin
Peterson, Hannah
et al.

Publication Date
2023

DOI
10.5070/D329562419

Copyright Information
Copyright 2023 by the author(s).This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at https://creativecommons.org/licenses/by-nc-nd/4.0/

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

The effect of perceived health status on satisfaction with care among acne patients: a population-based study

Paige Kingston[1] BS, Edwin Korouri[2] BS, Hannah Peterson[3] BS, Kathryn Lee[4] BA, Rosario Agüero[1] MD, Margaret Y Huang[1] BS, Danielle Yee[5] MD, April W Armstrong[5] MD MPH

Affiliations: [1]Keck School of Medicine, University of Southern California, Los Angeles, California, USA, [2]Rosalind Franklin University of Medicine and Science, Chicago Medical School, North Chicago, Illinois, USA, [3]Loma Linda University School of Medicine, Loma Linda, California, USA, [4]Saint Louis University School of Medicine, Street Louis, Missouri, USA, [5]University of California, Los Angeles, Los Angeles, California, USA

Corresponding Author: April W Armstrong MD MPH, University of California, Los Angeles, 200 Medical Plaza Drive, Suite 450, Los Angeles, CA 90095, Email: armstrongpublication@gmail.com

Keywords: acne, satisfaction

To the Editor:
Acne is the most common chronic skin condition in the United States and accounts for more than 5 million physician visits per year [1]. Moderate-to-severe acne affects up to 20% of adolescents and young adults and is associated with increased rates of acne complications and mental health conditions such as anxiety and depression [2-5]. Therefore, severe acne and its associated comorbidities can contribute negatively to a patient's self-perceived health.

Perceived health status refers to a patient's perception of their overall health. Many patients view health as a global experience, including physical and mental health, social functioning, and general well-being [6]. Perceived health status may be one of the factors contributing to a patient's overall satisfaction with their care [7]. High patient satisfaction is important because it is associated with increased treatment adherence and improved health outcomes in dermatology [8].

Few prior studies have investigated the effects of patient characteristics and their perceived health status on patient satisfaction within dermatology. This study aims to determine the effect of perceived health status on satisfaction with care among acne patients in the United States.

We performed a cross-sectional, population-based study using the 2009-2017 and 2019 Medical Panel Expenditure Survey (MEPS). We included all patients with a reported diagnosis of acne who reported a visit with a dermatologist. Perceived health status was reported on a 5-point scale: 1 – "excellent", 2 – "very good", 3 – "good", 4 – "fair", 5 – "poor". Patient satisfaction was based on overall satisfaction with healthcare, including that for acne care, with 0 representing "worst healthcare possible" and 10 representing "best healthcare possible" in the last 12 months.

A weighted total of 2,482,499 patients with acne were identified using *International Classification of Diseases, Ninth Revision* and *Tenth Revision* (ICD9 and ICD10, respectively) codes in the MEPS. Sociodemographic and clinical characteristics of the cohort are summarized in **Table 1**. We performed a multivariable linear regression to describe the relationship between perceived health status and satisfaction with care, adjusting for age, sex, income, education, employment, insurance status, region, and Charlson comorbidity index.

Overall, we observed significant differences in satisfaction with care based on the perceived health status of acne patients (**Table 2**). Patients who perceived themselves to be in worse overall health were less likely to be satisfied with their care. Specifically, patients who perceived themselves in "poor" health were over one and a half times less

Table 1. *Weighted demographic and clinical characteristics of patients with acne from the 2009-2017, 2019 Medical Panel Expenditure Survey.*

	Weighted Cohort (N=2,482,499)	
Variables	**Number**	**%**
Mean satisfaction with care (SEM)	8.618 (0.0645)	-
Perceived health status		
Excellent	619,269	24.95
Very good	1,095,664	44.14
Good	480,728	19.36
Fair	126,318	5.09
Poor	160,520	6.46
Mean age, years (SEM)	35.67 (1.26)	-
Sex		
Female	1,923,527	77.48
Male	558,972	22.52
Race		
White	2,035,934	82.01
Black	220,066	8.86
Native American Indian/Alaskan	40,123	1.62
Asian/Hawaiian/Pacific Islander	154,133	6.21
Multiple	32,243	1.30
Ethnicity		
Hispanic	225,361	9.08
Non-Hispanic	2,257,138	90.92
Education		
No degree	269,211	10.84
High school/GED	953,983	38.43
Bachelors/advanced degree	1,061,797	42.77
Other/inapplicable	197,508	7.96
Employment		
Employed	1,668,571	67.21
Not Employed	813,928	32.79
Insurance Status		
Private	2,152,832	86.72
Public	199,718	8.05
Uninsured	129,949	5.23
Region		
West	491,387	19.79
Northeast	427,802	17.23
Midwest	443,765	17.88
South	1,119,545	45.10
Poverty category		
Very low income	225,914	9.10
Low income	88,290	3.56
Middle income	754,083	30.38
High income	1,414,212	56.96
CCI, mean (SEM)	0.21 (0.02)	-

GED, general education development; CCI, Charlson Comorbidity Index.

likely to report high satisfaction with care compared to patients with "excellent" perceived health (aOR -1.65, 95% CI -2.82- -0.48, P=0.006).

Patient satisfaction is an important quality measure in today's healthcare environment and can positively affect health outcomes [8]. Therefore, it is important

Table 2. *Multivariable logistic regression analysis of the association between perceived health status and satisfaction with care, adjusting for comorbidities and covariates.*

	Dependent variable: satisfaction with care	
Independent variables	**aOR* (95% CI)**	**P-value#**
Perceived health status		
Excellent	1 (Ref)	-
Very good	-0.45 (-0.69- -0.22)	<0.001
Good	-0.78 (-1.12- -0.44)	<0.001
Fair	-1.57 (-2.14- -1.00)	<0.001
Poor	-1.65 (-2.82- -0.48)	0.006
CCI	0.03 (-0.14-0.20)	0.72
Age	0.02 (0.01-0.02)	<0.001
Sex		
Male	1 (Ref)	-
Female	0.07 (-0.20-0.34)	-0.60
Poverty category		
Very low income	1 (Ref)	-
Low income	-0.08 (-0.72-0.55)	0.79
Middle income	0.03 (-0.37-0.42)	0.90
High income	0.16 (-0.20-0.51)	0.38
Education		
No degree	1 (Ref)	-
GED/high school diploma	0.21 (-0.34-0.75)	0.46
Bachelors/advanced degree	-0.25 (-0.78-0.28)	0.36
Other/inapplicable	0.17 (-0.42-0.77)	0.56
Employment		
Not employed	1 (Ref)	-
Employed	-0.06 (-0.32-0.19)	0.63
Insurance status		
Private	1 (Ref)	-
Public	0.07 (-0.31-0.46)	0.70
Uninsured	-1.23 (-2.02- -0.45)	0.002
Region		
West	1 (Ref)	-
Northeast	-0.12 (-0.43-0.18)	0.42
Midwest	0.03 (-0.27-0.32)	0.86
South	-0.10 (-0.37-0.18)	0.49

aOR, adjusted odds ratio; CI, Confidence Interval; CCI, Charlson Comorbidity Index; GED, general education development.
*Estimates are adjusted for survey sampling weights.
#Statistical significance was determined at $P \leq 0.05$.

for dermatologists to be aware of factors contributing to patient satisfaction. Notably, our study identified that, if a patient perceives their health to be poor, irrespective of other factors, they are less likely to be satisfied with their acne care.

In many parts of the world, mechanisms exist for patients to regularly evaluate the performance of the dermatologists. In some parts, these evaluations can impact a dermatologist's reputation, compensation, and other factors. It is important to know that these evaluations are not entirely dependent on one's performance as a clinician. As our results indicate, differences in a patient's perceived health status can predict higher versus lower patient satisfaction. A clinician may provide high quality care; however, a patient may view this care as inferior based on their own perception of their health. Moreover, clinicians who practice in under-resourced areas or in patient populations with more severe disease, may experience that they have lower patient satisfaction despite implementing the same treatments as with other patient cohorts.

With acne patients, clinicians must be particularly vigilant. Moderate-to-severe acne can negatively affect a patient's perception of their overall health due to impairments in social functioning and mental well-being. Optimizing patient satisfaction in acne patients with acne is essential to improve treatment compliance and continuity of care, which can minimize acne complications and development of psychiatric comorbidities.

To improve patient satisfaction among acne patients, dermatologists can focus on strengthening the clinician-patient relationship and engaging in shared decision-making with their patients. Shared decision-making is a collaborative process between a clinician and patient, in which the clinician provides treatment recommendations, and the patient expresses their values and beliefs. Shared decision-making has been shown to increase patient satisfaction with dermatologic care [9].

In conclusion, a patient's perceived health status can directly affect their satisfaction with care. Our study found that if a patient perceives their health to be poor, they are less likely to be satisfied with their acne care. Clinicians should be aware of factors contributing to patient satisfaction to improve outcomes and mitigate complications in patients with acne.

Potential conflicts of interest

AWA has served as a research investigator, scientific advisor, and/or speaker to AbbVie, Almirall, Arcutis, ASLAN, Beiersdorf, BI, BMS, EPI, Incyte, Leo, UCB, Janssen, Lilly, Mindera, Nimbus, Novartis, Ortho Dermatologics, Sun, Dermavant, Dermira, Sanofi, Regeneron, and Pfizer. All other authors report no conflicts of interest.

References

1. Knutsen-Larson S, Dawson AL, Dunnick CA, Dellavalle RP. Acne vulgaris: pathogenesis, treatment, and needs assessment. *Dermatol Clin*. 2012;99-106, viii-ix. [PMID: 22117871].
2. Bhate K, Williams HC. Epidemiology of acne vulgaris. *Br J Dermatol*. 2013;168:474-85. [PMID: 23210645].
3. Samuels DV, Rosenthal R, Lin R, Chaudhari S, Natsuaki MN. Acne vulgaris and risk of depression and anxiety: A meta-analytic review. *J Am Acad Dermatol*. 2020;83:532-541. [PMID: 32088269].
4. Nguyen CM, Koo J, Cordoro KM. Psychodermatologic Effects of Atopic Dermatitis and Acne: A Review on Self-Esteem and Identity. *Pediatr Dermatol*. 2016;33:129-35. [PMID: 27001316].
5. Marron SE, Tomas-Aragones L, Boira S. Anxiety, depression, quality of life and patient satisfaction in acne patients treated with oral isotretinoin. *Acta Derm Venereol*. 2013;93:701-6. [PMID: 23727704].
6. Barsky AJ, Cleary PD, Klerman GL. Determinants of perceived health status of medical outpatients. *Soc Sci Med*. 1992;34:1147-54. [PMID: 1641676].
7. Xiao H, Barber JP. The effect of perceived health status on patient satisfaction. *Value Health*. 2008;11:719-25. [PMID: 18179667].
8. Renzi C, Abeni D, Picardi A, et al. Factors associated with patient satisfaction with care among dermatological outpatients. *Br J Dermatol*. 2001;145:617-23. [PMID: 11703289].
9. Morrison T, Johnson J, Baghoomian W, et al. Shared Decision-making in Dermatology: A Scoping Review. *JAMA Dermatol*. 2021;157:330-337. [PMID: 33533921].