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Original

Satisfaction with current psoriasis treatment: misalignment between physician and patient perceptions

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Abstract

Psoriasis patients often report dissatisfaction with treatment. However, the extent to which patients and their treating dermatologists are aligned regarding satisfaction with psoriasis therapy is largely unknown. This was explored using data derived from the Adelphi 2011/2013 Psoriasis Disease Specific Programmes, two real world surveys of US dermatologists and their patients. Physicians and patients independently reported their satisfaction with psoriasis control (satisfied, dissatisfied). Two levels of satisfaction alignment between physician and patient responses were constructed: aligned (same responses) and misaligned (different responses). In addition, dermatologists provided patient treatment history and disease/symptom severity whereas patients reported data on health-related quality of life (HRQoL), using the EuroQOL 5-Dimension Health Questionnaire (EQ-5D) and Dermatology Life Quality Index (DLQI), and work productivity using the Work Productivity Activity index (WPAI). Multivariate regressions were employed to examine the relationship between satisfaction alignment, overall disease and symptom severity, HRQoL, and work productivity controlling for differences in patient demographics and comorbidities.

From 627 paired dermatologist and psoriasis patient records, 512 (81.7%) and 115 (18.3%) cases fell into the ‘aligned’ and ‘misaligned’ groups, respectively. Compared with patients in the aligned group, those in the misaligned group had more moderate to severe psoriasis (82.3% vs. 43.7%), moderate to severe itching (45.6% vs. 27.8%), pain (23.0% vs. 10.6%), and scaling (54.8% vs. 36.1%), and had lower current biologics use (27.0% vs. 42%) (all $p < 0.05$). The misaligned group was associated with reduced HRQoL (lower EQ-5D score: 0.86 vs. 0.91; higher DLQI score: 7.06 vs. 4.23) and greater work productivity loss (higher WPAI scores: 18.27 vs. 11.43) (all $p < 0.05$). Multivariate analyses confirmed these results ($p < 0.05$). Almost 1 in 5 patients were misaligned with their dermatologist’s level of satisfaction with their psoriasis treatment; misalignment was associated with increased disease and symptom severity, reduced HRQoL, and reduced work productivity.

Introduction

Psoriasis is a chronic, immune-mediated skin disorder affecting approximately 3% of the adult population in the US [1,2]. The key clinical symptoms of psoriasis include itching, painful skin, and scaling. Patients typically experience periods of relative

quiescence interspersed with periodic and unpredictable symptomatic worsening [3,4]. Psoriasis has a significant impact on health-related quality of life (HRQoL) for many patients and it can also result in reduced productivity in the work place [5,6].

Although there are no curative treatments for psoriasis, a range of therapeutic options are available to alleviate and control the key clinical symptoms of the condition including topical therapies, phototherapy, and both non-biologic and biologic systemic agents. However, dissatisfaction with treatment among patients with psoriasis is high [7,8]. A number of surveys have highlighted an association between the type of treatment patients receive and the reported level of patient satisfaction [9–11]. These surveys have consistently shown that the lowest levels of treatment satisfaction are associated with topical therapies, whereas higher levels of satisfaction are associated with biologic agents. Satisfaction with treatment from the dermatologist's perspective has not been widely explored, therefore minimal data are available describing physician perceptions of how well psoriasis symptoms are controlled in their patients. The extent to which patients and their dermatologists are in agreement with regards to treatment control may be of particular importance, but no such data is currently available.

For chronic conditions such as psoriasis and psoriatic arthritis, patient-centered strategies have been advocated [12,13]. Such strategies emphasize active involvement by the patient and two-way communication leading to physician – patient consensus regarding the preferred treatment approach [12,14]. In relation to this, alignment between physicians and their patients is emerging as an important concept to ensure the successful implementation of a treatment plan as well as optimal outcomes [15,16].

The aim of the current analysis was to examine whether there is misalignment between dermatologists and their psoriasis patients regarding satisfaction with current psoriasis therapies using large and recent US survey data. In addition, the characteristics of misaligned and aligned patients in terms of their HRQoL, disease severity, and symptom severity were examined.

Methods

Pooled data from the Adelphi 2011 and 2013 Psoriasis Disease Specific Programmes (DSP; [17]) were used for this analysis. The Adelphi Psoriasis DSP is a real-world, cross-sectional survey conducted with US patients with psoriasis and their treating dermatologist. Data included anonymized patient self-completion questionnaires (PSCs) and physician-reported patient record forms (PRFs). The DSP research was conducted in full accordance with the US Health Insurance Portability and Accountability Act 1996 (HIPAA; www.hhs.gov/ocr/privacy/).

Study population

Eligibility criteria for dermatologists included a US-based practice with physicians seeing at least 10 patients with psoriasis in a typical month. Dermatologists were required to have obtained their medical degree between 1972 and 2010 and to personally manage the care of patients with psoriasis.

Dermatologists were asked to provide patient treatment history through completion of a PRF for the next 7 patients consulting with psoriasis. Psoriasis patients eligible to participate in the survey were required to have, either currently or at some point in their disease history, an affected body surface area (BSA) greater than 10%, moderate or severe psoriasis in the physician's opinion, and systemic therapy prescribed for their psoriasis. Eligible patients were also invited to complete a Patient Self-completion (PSC) form on a voluntary basis. Physician-reported PRF and patient-reported PSC data were linked via unique identifiers.

Study measures

The PRF collected information on patient demographics, comorbidities, current clinical status including overall psoriasis severity (mild, moderate or severe), severity of psoriasis-related itching, pain, and scaling (none, mild, moderate or severe), and current psoriasis treatment (none/topical, phototherapy, non-biologic systemic, biologic). Physicians also reported satisfaction with the current control over psoriasis for each patient (satisfied, dissatisfied).

Independent of their dermatologist, patients reported their current satisfaction level with psoriasis treatment via the PSC questionnaire. Patient-reported HRQoL was measured with the EuroQoL 5-Dimension Health Questionnaire (EQ-5D; [18]) and Dermatology Life Quality Index (DLQI; [19]). The EQ-5D is a generic HRQoL tool that assesses five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. For each dimension, respondents are asked to indicate whether they

experience no problems, some/moderate problems, or extreme problems. A summary score is derived ranging from -0.59 to 1, with a score of 1 representing perfect health and lower scores indicating poorer health states. The DLQI is a dermatology-specific instrument that evaluates six domains of HRQoL: symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment. Respondents indicate the extent to which they have experienced problems in each of these domains using a 4-point Likert scale ranging from 0 (not at all or not relevant) to 3 (very much) over a recall period of 1 week. Domain scores are presented individually as a percentage and are summed to generate an overall score (0-30; higher scores indicating lower HRQoL). Work productivity loss was measured via the Work Productivity Activity Index (WPAI; (20)). The WPAI consists of 6 questions that quantify work time missed, time impaired while at work, overall work impairment, and activity impairment over a 7-day recall period. Only the activity impairment domain is considered for patients not currently in employment.

Statistical analyses

Two levels of satisfaction alignment between dermatologist and patient responses were constructed and compared: aligned (physician and patient both satisfied or physician and patient both not satisfied) and misaligned (physician satisfied and patient not satisfied, or physician not satisfied and patient satisfied). Misaligned and aligned physician - patient pairs were compared to examine their overall psoriasis disease severity (mild, moderate, severe), the severity of itching, pain, and scaling symptoms (none, mild, moderate-to-severe), current highest therapy type (none/topical < phototherapy < non biologic systemic < biologic), HRQoL, and work productivity. Patients with moderate or severe psoriasis-related itching, pain, and scaling were combined into a single moderate-to-severe group for each symptom owing to low patient numbers in these individual categories. Therapy type was analyzed by considering the highest therapy level currently prescribed for each patient (none/topical < phototherapy < non biologic systemic < biologic).

Means and standard deviations (SD) were reported for continuous variables. Frequencies and percentages were reported for categorical variables. Statistical comparisons between groups were conducted with Mann-Whitney for continuous variables and Fishers or Chi-Squared tests for categorical variables.

Multiple ordered logistic regressions were used to explore the relationship between satisfaction alignment, overall disease, and symptom severity. Linear regressions were employed to examine the relationship between satisfaction alignment, HRQoL, and work productivity. All regressions controlled for differences in patient demographics and comorbidities. Statistical significance was set at 0.05 and all analyses were performed in STATA statistical software version 13.1 (StataCorp, 2013. Stata statistical software: Release 13. College Station, TX, StataCorp LP).

Results

Data were available for a total of 627 dermatologist-patient pairs; 512 (81.7%) represented aligned cases and 115 (18.35) were misaligned cases (Table 1). For the aligned group, the majority of cases were instances in which both the physician and the patient were satisfied (n=433, 84.6% of aligned cases). For the misaligned group, the majority of cases were instances in which the physician was not satisfied but the patient was satisfied (n=81, 70.4% of the misaligned group).

Table 1. Comparisons between physician and patient satisfaction levels

| | Physician Satisfied | Physician not satisfied |
|------------------------------|---------------------|-------------------------|
| Patient satisfied, n (%) | 433 (69.1%) | 81 (12.9%) |
| Patient not satisfied, n (%) | 34 (5.4%) | 79 (12.6%) |

Demographic information is presented in Table 2. Patients on average were 44.6 years old, 43.6% were female, and the majority of patients (87.7%) were Caucasian. Body mass index (BMI) scores indicated that 39.4% of patients were overweight (BMI >25 and ≤ 30) and an additional 24.2% were obese (BMI >30). The mean time since diagnosis was significantly longer for the aligned pairs (6.2 years) than the misaligned pairs (5.2 years, p<0.05). Mean percentage of BSA affected was significantly lower for the aligned (9.2%) vs. the misaligned (12.0) dermatologist – patient pairs (p<0.05).

Table 2. Patient Characteristics by physician and patient satisfaction alignment status

| | Total | Aligned | Misaligned |
|------------------------------------|-------------|-------------|--------------|
| N (%) | 627 (100) | 512 (42.7) | 115 (18.3) |
| Age (years), mean (SD) | 44.6 (15.4) | 45.0 (15.3) | 42.9 (16.0) |
| Female, n (%) | 273 (43.6) | 218 (42.7) | 55 (47.8) |
| Caucasian, n (%) | 543 (87.7) | 440 (86.8) | 103 (92.0) |
| BMI, mean (SD) | 27.5 (5.7) | 27.4 (5.7) | 27.7 (5.6) |
| ≤25 (underweight to normal), n (%) | 211 (36.4) | 175 (36.8) | 36 (34.9) |
| >25 and ≤30 (overweight), n (%) | 228 (39.4) | 188 (39.5) | 40 (38.8) |
| >30 (obese), n (%) | 140 (24.2) | 113 (23.7) | 27 (26.2) |
| Years since diagnosis, mean (SD) | 6.0 (8.3) | 6.2 (8.0) | 5.2 (9.4)* |
| % BSA affected, mean (SD) | 9.7 (11.3) | 9.2 (11.4) | 12.0 (10.3)* |

BMI, body mass index; BSA, body surface area; SD, standard deviation

*p<0.05 (aligned versus misaligned patients).

Disease and symptom severity

The level of disease severity differed significantly between the aligned and misaligned pairs (Figure 1). Patients in the misaligned group were less likely to have mild psoriasis (17.7% vs. 56.3%) but more likely to have moderate (69.0% vs. 39.0%) or severe psoriasis (13.3% vs. 4.7%) compared to those in the aligned group (p<0.05).

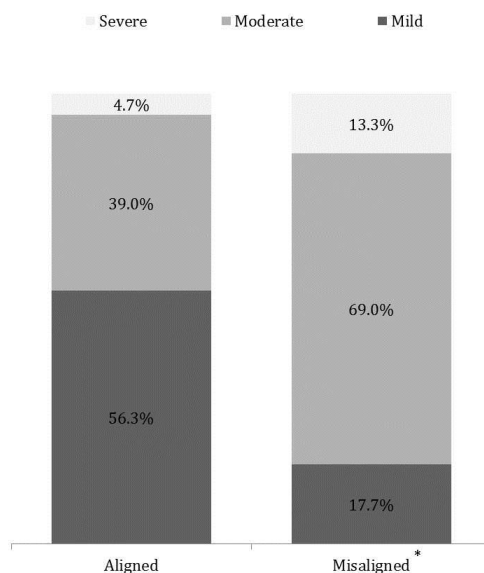


Figure 1. Psoriasis disease severity by physician-patient satisfaction alignment status

*P<0.05; Aligned patient group compared to misaligned patient group

Patients in the misaligned group were less likely to have no itching (19.3% vs. 28.8%) or mild itching (35.1% vs. 43.3%), but were more likely to have moderate-to-severe itching (45.6% vs. 27.8%) than those in the aligned group (p<0.05) (Figure 2). Similar patterns were observed for pain and scaling symptoms. For psoriasis-related pain, 51.3% of patients in the misaligned group had no pain, 25.7% had mild pain, and 23.0% had moderate-to-severe pain. This compared to 72.1% with no pain in the aligned group, 17.3% of aligned patients with mild pain, and 10.6% with moderate-to-severe pain. For scaling, for misaligned compared to aligned patients, the numbers were 10.4% vs. 20.4% for no scaling, 34.8% vs. 43.4% for mild scaling, and 54.8% vs. 36.2% for moderate-to-severe scaling (p<0.05).

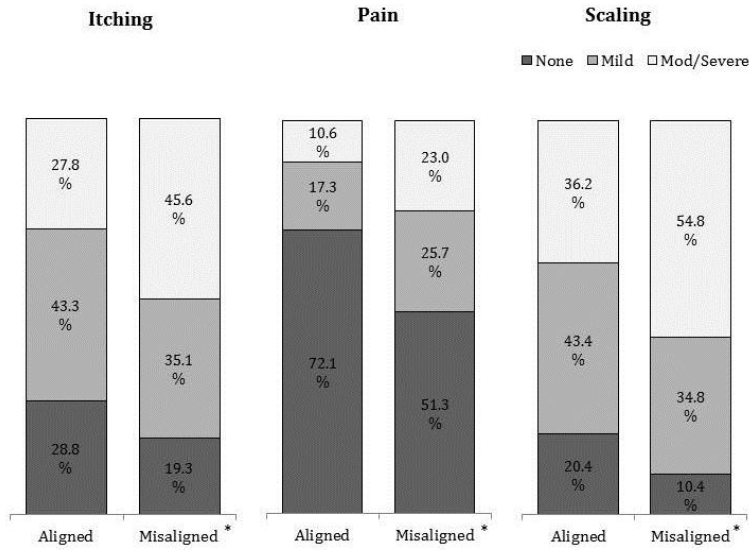


Figure 2. Symptom severity by physician-patient satisfaction alignment status
**P<0.05; Aligned patient group compared to misaligned patient group*

The current highest level of treatment received by the patients is shown in Figure 3. Patients in the misaligned group were less likely to be prescribed with biologics (27.0% vs. 42.0%), but were more likely to receive all other treatment types as their current highest therapy level including none/topical therapy (24.3% vs. 19.9%), phototherapy (25.2% vs. 17.8%), and systemic therapy (23.5% vs. 20.3%) than those in the aligned group (p<0.05).

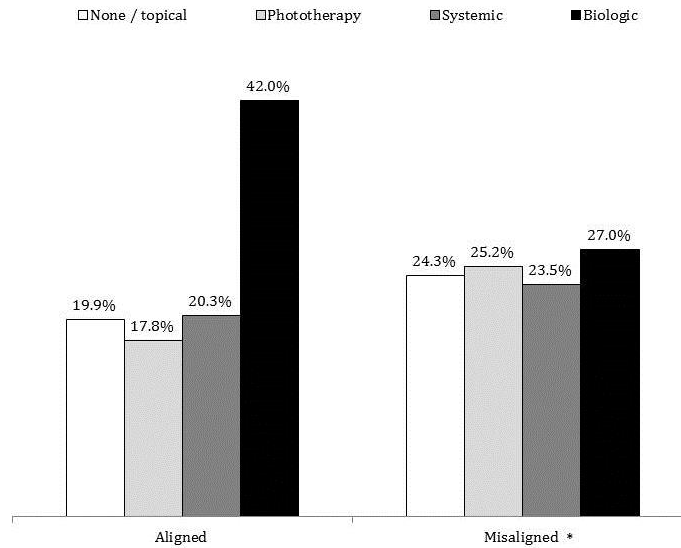


Figure 3. Current highest therapy level by physician-patient satisfaction alignment status
**P<0.05; Aligned patient group compared to misaligned patient group*

HRQoL and work productivity

Patients in the misaligned group had significantly reduced HRQoL (lower EQ-5D score: 0.86 vs. 0.91; higher DLQI total scores: 7.1 vs. 4.2) and greater work productivity loss (higher WPAI scores: 18.3 vs. 11.4) than those in the aligned group (all p<0.05)

(Figure 4). A similar trend was observed for all the DLQI subdomains except for “work and school,” as well as the WPAI work time missed and activity impairment scores.

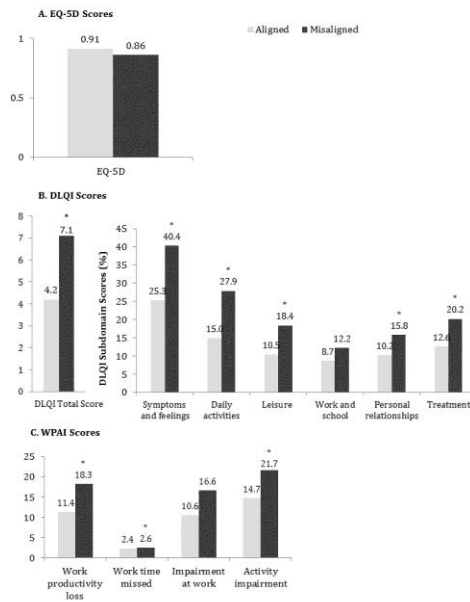


Figure 4. Health-related quality of life and work productivity by physician-patient satisfaction alignment status
A. *European 5-Dimension Health Questionnaire (EQ-5D) scores*; B. *Dermatology Life Quality Index (DLQI) scores*; C. *Work Productivity and Activity Impairment (WPAI) scores*.
* $P < 0.05$; Aligned patient group compared to misaligned patient group

Multivariate analyses

Multivariate results are shown in Table 3. Controlling for patient differences in demographics and comorbidities, ordered logistic regressions revealed that patients in the misaligned group were significantly more likely to have more severe overall disease (odds ratio [OR] = 4.7), more severe itching (OR=1.9), more severe pain (OR=2.5), more severe scaling (OR=2.3), and be in receipt of a higher therapy level (OR= 0.6) (all $p < 0.05$). Linear regression analyses indicated that physician and patient misalignment on treatment satisfaction was associated with poorer HRQoL (EQ-5D coefficient = -0.06, DLQI total score coefficient = 2.6) and reduced work productivity (WPAI coefficient = 7.8) (all $p < 0.05$).

Table 3. Regression results: relationship between physician – patient alignment, psoriasis disease severity, symptom severity, therapy level, HRQoL and work productivity.

¹ Ordered logistic regressions: Odds ratios (95% confidence intervals)

² Linear regressions: Coefficients (95% confidence intervals)

All regressions controlled for differences in age, gender, ethnicity, body mass index and comorbidities (psoriatic arthritis, hypertension, hyperlipidaemia, anxiety, depression and diabetes). * $p < 0.05$; reference = physician-patients aligned

[^]Other/topical<phototherapy<non-biologic systemic<biologic

Clinical Characteristics¹

| | Increased disease severity | More severe itching | More severe pain | More severe scaling | Higher level therapy type [^] |
|------------|----------------------------|---------------------|-------------------|---------------------|--|
| Misaligned | 4.7* (2.9-7.5) | 1.9* (1.2-3.1) | 2.5* (1.5-4.2) | 2.3* (1.3-4.0) | 0.6* (0.4-1.0) |

HRQoL²

| | | DLQI Subdomains | | | | | | |
|------------|-----------------------------|-------------------|-----------------------|---------------------|--------------------|----------------------|------------------------|------------------------|
| | EQ-5D | DLQI total | Symptoms and feelings | Daily activities | Leisure domain | Work and school | Personal relationships | Treatment |
| Misaligned | -0.06* (-0.09- -0.03) | 2.6* (1.3-3.9) | 14.4* (9.8-19.0) | 11.0* (5.3-16.6) | 7.6* (2.8-12.4) | 4.3 (-1.6 - 10.2) | 5.9* (1.1-10.7) | 6.0* (0.3- 11.6) |

Work productivity²

| | % Work productivity loss | % Work time missed | % Impairment at work | % Activity impairment |
|------------|--------------------------|--------------------|----------------------|-----------------------|
| Misaligned | 8.0* (0.8-15.2) | 1.2 (-2.6-5.0) | 6.7* (1.5-11.8) | 7.1* (1.8-12.4) |

Discussion

This large-scale, retrospective, real-world analysis was, to our knowledge, the first evaluation of the relationship between physician and patient alignment on satisfaction with current psoriasis treatment. It is encouraging to note that alignment was common, particularly since this largely related to both physician and patient reported satisfaction. However, almost 1 in 5 patients surveyed were misaligned with their dermatologists' level of satisfaction, and misalignment was associated with significantly increased disease and symptom severity as well as reduced HRQoL and work productivity. Despite these problems, patients in the misaligned group were significantly more likely to be treated with none/topical and phototherapy. Misaligned cases therefore represented a subset of patients in need of improved care, not only to address the clinical aspects of their disease including itching, pain and scaling symptoms, but also to ensure their broader needs are met in terms of HRQoL and work productivity.

In the present study, it was not possible to establish a causal relationship between physician-patient misalignment, severity of psoriasis disease and symptoms, HRQoL, and work productivity. Misalignment, possibly indicative of poor physician-patient communication, may itself lead to negative outcomes [15]. The paired survey method has been used previously to identify physician-patient discordance in other disease areas, and it has been recognized that poor alignment may impair effective medical care for patients [21]. Conversely, patients currently experiencing a significant impact of psoriasis on their HRQoL or work productivity may not be communicating this effectively to their physicians, leading to misalignment and making it increasingly challenging for dermatologists to prescribe the most appropriate treatments.

The majority of misaligned cases of psoriasis in this study were instances in which the physicians were not satisfied but the patients were satisfied. This suggests that these patients may have lower expectations than their dermatologist. Indeed, patients with low expectations may be less likely to raise problems during consultations with their physician. Given the increased likelihood for misaligned patients to be on none/topical and phototherapy, it is possible that some of these patients are resistant to trying biologics, even when the physicians perceive this to be the most suitable course of action based on their disease severity level and existing symptoms. This suggests that some patients may not be aware of the best outcomes that can be achieved. Therefore, physicians may have an opportunity to educate patients regarding the level of psoriasis control that is currently achievable with the newest therapies.

Effective communication between dermatologists and their psoriasis patients is crucial for addressing any treatment related issue in order to achieve a successful treatment goal. Previous studies have noted that HRQoL in addition to physical symptoms should be considered when disease severity is assessed [22,23]. Patients should therefore be encouraged to disclose this information either formally via the use of standardized tools such as the DLQI or informally via a discussion. With regards to communication on treatment options, physicians may overestimate their patients' disease education [13,14,21]. Particularly, psoriasis patients have previously expressed a desire for more information from their dermatologists [16]. Given the levels of alignment reported in this study, it is likely that for the majority of patients, informative discussions are already taking place with their dermatologist.

However, there are patients currently misaligned with their physicians who might benefit from further education with regards to what treatments are available as well as the level of control that can be realistically achieved.

Patients in the aligned and misaligned groups had similar demographics; however patients in the misaligned group were, on average, more recently diagnosed than those in the aligned group. How this difference has impact on the physician-patient satisfaction with existing treatment is unclear. It is possible that the association between misalignment and a more recent diagnosis of psoriasis is related to a lack of effective communication as the patient and the health care provider do not know each other well enough to discuss these issues at length. Future studies could help to elucidate answers to this question.

It is important to note that the patient sample examined in this study was drawn from a population of psoriasis patients who were recently seen by a dermatologist. Therefore, it might be difficult to generalize our study results to the broader psoriasis population which includes patients who do not consult their physicians regularly as well as patients who are cared by non-dermatologist physicians.

Conclusion

Almost 1 in 5 psoriasis patients were misaligned with their dermatologists regarding satisfaction with current treatment. Compared to patients in the aligned group, patients in the misaligned group experienced more severe overall disease and psoriasis symptoms, and reduced HRQoL and work productivity.

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Conflict of interests

The study was sponsored by the Novartis Pharmaceuticals Corporation where Yang Zhao and Mary Kemhus are employed.

Neil J Korman declares the following conflicts of interest: Neil Korman is a Professor of Dermatology at University Hospitals Case Medical Center and Clinical Director at the Murdough Family Center for Psoriasis in Cleveland, Ohio. He has served as a speaker for Novartis, on an advisory board for Novartis and received grant funding for his participation in this project. Dr. Korman has also served on advisory boards for Abbvie, Amgen, Celgene, Eli Lilly, Janssen, and Pfizer, receiving grants and honoraria; was investigator for Abbvie, Amgen, Celgene, Eli Lilly, Pfizer, and and as a speaker for Abbvie, Celgene, Janssen, served as a consultant for Astellas; and operated as an investigator, speaker, and on advisory boards for Janssen where he received grants, honoraria, and residency/fellowship program funding.

Abbreviations

| | |
|-------|---|
| BMI | Body mass index |
| BSA | Body surface area |
| DLQI | Dermatology Life Quality Index |
| DSP | Disease Specific Programme® |
| EQ-5D | EuroQoL 5-Dimension Health Questionnaire |
| HIPAA | Health Insurance Portability and Accountability |
| HRQoL | Health-related Quality of Life |
| OR | Odds Ratio |
| PRF | Patient Record Form |
| PSC | Patient Self-Completion |
| SD | Standard Deviation |
| US | United States |
| WPAI | Work productivity Activity Index |

