Translating psoriasis guidelines into practice: Important gaps revealed

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Background: There is a well-established lack of adherence to evidence-based clinical guidelines. The American Academy of Dermatology (AAD) developed educational sessions entitled Translating Evidence into Practice based on the published guidelines for psoriasis and psoriatic arthritis.

Objective: We sought to determine the effectiveness of Translating Evidence into Practice sessions in improving patient care.

Methods: Pre- and post-session surveys were administered at Translating Evidence into Practice sessions. A follow-up was administered 6 months after completion of the most recent session, which was 2.5 years after the first session.

Results: At both post-session and follow-up, more than 92% of participants believed the sessions had improved their knowledge. The proportion of participants that self-reported assessing disease severity, comorbidities, and quality of life increased at follow-up. Participants' self-reported counseling of patients and confidence in treating psoriasis and psoriatic arthritis also increased at post-session and follow-up. Greater than 97% of participants thought the sessions would have a positive impact on their practice whereas 50% reported making a change in practice.

Limitations: Lack of a control group, the self-reported nature of the data, and potential participant bias are limitations.

Conclusion: The AAD’s Translating Evidence into Practice sessions are effective and well received for improving knowledge and practice and can be useful to determine self-reported practice gaps. (J Am Acad Dermatol 2016;74:544-51.)

Key words: assessment of severity; cardiovascular disease; guidelines; metabolic syndrome; practice gaps; psoriasis; psoriatic arthritis; quality of life.

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Psoriasis vulgaris is a chronic inflammatory disease characterized by erythematous plaques that affects 7.5 million Americans.\textsuperscript{1-4} Psoriatic arthritis (PsA) is an inflammatory spondyloarthropathy that develops in 7\% to 42\% of patients with psoriasis, with 15.5\% of patients remaining without a diagnosis.\textsuperscript{1,5-7} Both psoriasis and PsA negatively impact patients’ quality of life (QOL) leaving patients dissatisfied with their treatment.\textsuperscript{5,8-12} A German study found that the publication of psoriasis guidelines led to changes in psoriasis treatment decisions by 80\% of participating dermatologists.\textsuperscript{13} Within 3 years, the quality of care of patients with psoriasis improved.\textsuperscript{14} Two additional German studies examining adherence to psoriasis guidelines identified practice gaps regarding the use of or adherence to the guideline in clinical practice.\textsuperscript{15,16} Interestingly, one of these studies found that dermatologists who were knowledgeable of the guidelines were more likely to adhere to them.\textsuperscript{16} Similar to the findings in Germany, gaps in knowledge and guideline adherence among US dermatologists and dermatologic surgeons have been shown, albeit for conditions other than psoriasis.\textsuperscript{17-20} These studies also found that knowledge of the guidelines correlated with adherence.\textsuperscript{17-19} The American Academy of Dermatology (AAD) published guidelines for the management of psoriasis and PsA.\textsuperscript{2,5,21-24} Upon completion of the guidelines, the AAD began offering \textit{Translating Evidence into Practice} sessions to attendees of the annual meeting and summer academy meeting as a means to learn about the guidelines. These sessions featured presentations on guideline topics, and the participants were given reference materials based on the guideline recommendations. Our primary objective was to determine if \textit{Translating Evidence into Practice} sessions were effective at enabling dermatologists to improve patient care.

**METHODS**

\textit{Translating Evidence into Practice} sessions and reference materials

Sessions were offered as ticketed events for which attendees could register for a nominal fee. Learning objectives were to: (1) develop skills to treat patients with psoriasis and PsA with an emphasis on decision-making criteria that will enable the clinician to individualize therapy based on disease type, extent, response to previous treatments, QOL issues, and comorbidities; (2) recognize and diagnose challenging clinical cases and formulate appropriate evidence-based treatment of patients using the recently published 6 AAD evidence-based guidelines of care for psoriasis, which includes best practices; and (3) address gaps in clinical knowledge and care. Presentation topics were based on the published guidelines and were selected based on the expertise of the psoriasis guideline expert workgroup faculty.

Session attendees received reference materials, which consisted of 4 laminated pocket cards, 4 quick reference booklets, a pocket recommendation booklet, and a full set of published guidelines.

**Participants**

Attendees of the \textit{Translating Evidence into Practice} sessions were asked to participate in the study. Those who elected to complete paper forms or who participated using an audience response system were included as study participants.

**Data collection**

All pre- and post-session data were collected anonymously via paper forms or audience response system. Unless otherwise indicated, nonresponders were not included in calculations.

A follow-up was administered to registered attendees during the fall of 2013 (6 months to 2.5 years after the sessions). Session attendees were notified of the opportunity to participate via e-mail and were provided with 2 reminders. All follow-up data were collected anonymously.

**Statistical analysis**

Analyses of aggregate data were performed using $\chi^2$ tests.

**RESULTS**

**Demographics and guideline exposure**

There were 370 participants from 5 sessions, 66 of whom participated in the follow-up resulting in an overall response rate of 18\%. Follow-up responses
were paired to pre- or post-session responses in aggregate according to session, resulting in response rates of 19% to 24% for individual questions.

The majority of participants were board-certified dermatologists from the United States who had been in practice for 7 years or longer (Table I). When asked to what extent they read the guidelines before the session, 40.1% reported that they did not read the guidelines and 30.4% only read select sections/tables/figures (Table I).

**Practice patterns**

At pre-session, more than 62% of participants reported using mild/moderate/severe or body surface area, and less than 30% of participants self-reported using Psoriasis Area and Severity Index, physician global assessment, or another severity scale in their practice. There was an increase in the use of each severity scale polled at follow-up (Table II).

Assessment of patients for PsA, cardiovascular disease, and metabolic syndrome was reported by 31.2%, 22.0%, and 26.6% of participants, respectively, at pre-session. The self-reported assessment of cardiovascular disease and metabolic syndrome were increased at follow-up (Table II).

Of the 65.1% of participants who reported that they assess the QOL of their patients at pre-session, 87.3% reported using patient history to do so whereas much smaller proportions of participants reported using other QOL assessment tools. At follow-up, an increase in assessing QOL was observed along with increases in the use of 3 QOL assessment tools (Table II).

**Knowledge, counseling, and confidence assessments**

On average, 52.8% of participants answered clinical case-based questions correctly at pre-session. This improved to an average of 74.1% correct at post-session (data not shown). When individual questions were analyzed, 54.8% of questions (23 of 42) showed significant improvement ($P < .05$) from pre-session to post-session as determined by McNemar test (data not shown).

At pre-session, 58% to 75% of participants reported currently counseling their patients on smoking cessation, decreased alcohol intake, changes to diet, and exercise. At post-session, when asked if they were more likely to counsel patients as a result of attending the session, over 87% agreed for each topic. When asked what counseling was routinely performed at the time of follow-up, every topic remained increased compared with pre-session self-reporting, but had decreased compared with post-session intentions (Fig 1).

The majority of participants (86.7%) reported confidence in treating psoriasis at pre-session. At post-session, this improved to 89.7% of participants, and further improved to 93.8% at follow-up (Fig 2, A). Similarly, 40.7% of participants were confident in treating PsA at pre-session, which improved to 66.7% at post-session. In contrast to confidence in treating psoriasis, the confidence in treating PsA decreased slightly to 66.7% at follow-up (Fig 2, B).

### Table I. Participant demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Pre-session, % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional status</td>
<td></td>
</tr>
<tr>
<td>Board-certified dermatologist</td>
<td>65.4 (242)</td>
</tr>
<tr>
<td>Fellow</td>
<td>9.5 (35)</td>
</tr>
<tr>
<td>Resident</td>
<td>4.3 (16)</td>
</tr>
<tr>
<td>NP/PA</td>
<td>5.4 (20)</td>
</tr>
<tr>
<td>Other (eg, pharmacist)</td>
<td>15.1 (56)</td>
</tr>
<tr>
<td>No response</td>
<td>0.3 (1)</td>
</tr>
<tr>
<td>Years in practice</td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>15.7 (58)</td>
</tr>
<tr>
<td>3-4</td>
<td>10.0 (37)</td>
</tr>
<tr>
<td>5-6</td>
<td>9.2 (34)</td>
</tr>
<tr>
<td>$\geq$7</td>
<td>60.5 (224)</td>
</tr>
<tr>
<td>No response</td>
<td>4.6 (17)</td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>72.7 (178)</td>
</tr>
<tr>
<td>International</td>
<td>23.7 (58)</td>
</tr>
<tr>
<td>No response</td>
<td>3.7 (9)</td>
</tr>
<tr>
<td>Setting</td>
<td></td>
</tr>
<tr>
<td>Solo practice</td>
<td>23.0 (85)</td>
</tr>
<tr>
<td>Dermatology group practice</td>
<td>27.3 (101)</td>
</tr>
<tr>
<td>Multispecialty group practice</td>
<td>9.7 (36)</td>
</tr>
<tr>
<td>Academic</td>
<td>19.5 (72)</td>
</tr>
<tr>
<td>Department of Veterans Affairs</td>
<td>1.4 (5)</td>
</tr>
<tr>
<td>Military</td>
<td>2.7 (10)</td>
</tr>
<tr>
<td>Do not see patients</td>
<td>4.6 (17)</td>
</tr>
<tr>
<td>Other (eg, hospital, industry)</td>
<td>6.5 (24)</td>
</tr>
<tr>
<td>No response</td>
<td>5.4 (20)</td>
</tr>
<tr>
<td>Familiarity with guideline</td>
<td></td>
</tr>
<tr>
<td>Read completely</td>
<td>9.7 (34)</td>
</tr>
<tr>
<td>Read select sections/tables/figures</td>
<td>30.4 (107)</td>
</tr>
<tr>
<td>Browsed</td>
<td>19.9 (70)</td>
</tr>
<tr>
<td>Did not read</td>
<td>40.1 (141)</td>
</tr>
</tbody>
</table>

Data for these measures are shown as percent of total responders for each question with the n value representing the number of times an individual response option was selected.

*NP,* Nurse practitioner; *PA,* physician assistant.
Evaluation
At post-session, 97.8% of participants stated that participating in the session improved their knowledge regarding safety and efficacy of available treatments, and 97.2% stated the session would have a positive impact on their practice (Table III). In addition, 92.9% of participants believed that the guidelines could be easily translated into daily clinical practice, and 80.7% indicated that they would definitely recommend the session to their colleagues (Table III). At follow-up, 92.4% of respondents still thought that the session had increased their knowledge, 50% reported making a change in their practice, and 84.2% indicated that the reference materials were useful (Table III).

DISCUSSION
These data demonstrate that not all dermatologists assess severity and QOL in patients with psoriasis even though both are known to impact patients and treatment decisions.2-5,8-10,21-24 In addition, many comorbidities are known to be associated with psoriasis and can impact management plans,2,24-43 yet these data indicate that not all dermatologists assess or counsel their patients with psoriasis about comorbidities or lifestyle changes, which reaffirms and expands upon findings from recent independent surveys.42,43 In addition to these data, our previously published findings from a performance improvement module where participants audited patient charts indicated deficiencies in documentation of counseling patients in the areas of PsA, alcoholism, cardiovascular disease, metabolic syndrome, and smoking cessation.44 All together, these studies encourage dermatologists to perform and document a thorough patient history, including assessment of comorbidities and lifestyle choices, for patients suspected to have psoriasis to reduce the burden of psoriasis and PsA.

This study differs from the German psoriasis guideline studies discussed above in that there is no measurement before guideline publication and that a formal educational intervention was used.13-16 The changes in practice and remaining practice gaps reported here support the conclusions of the German studies; however, a follow-up study combining the 2 methodologies to determine impact of publishing a guideline followed by the impact of education based on the same guideline is warranted.

Barriers to implementation of guidelines have been previously identified and include patient-centric barriers (eg, risk of complications, refusal of treatment, inconvenience), organizational barriers (eg, cost, not valued), and guideline-specific barriers (eg, lack of knowledge, disagreement with guidelines from other specialties, oversimplification of practice, lack of access, overly complicated/unclear).15,16,45,46 The Translating Evidence into Practice session presentations aimed to address lack of knowledge whereas the reference materials aimed to address access and clarity concerns. Most respondents reported feeling more knowledgeable and found the reference materials to be useful; thus, we recommend guideline-based sessions and the
creation and distribution of similar materials for all published guidelines.

We recognize that a number of factors go into treatment decisions, and that not all factors may be included in clinical guidelines; however, we believe this study shows that educational sessions and reference materials can improve the quality of patient care where the use of guideline recommendations are deemed appropriate by expert physicians. Physician discretion may account for some of the persistent practice gaps that are observed at follow-up. Future studies should confirm these conclusions by examining the correlation between reported and documented performance improvements and improvements in patient outcome measures after a similar intervention. In addition, it would be interesting to determine if patient treatment satisfaction increases if patients and caregivers are made aware that they are being treated according to clinical guidelines.

Limitations of this study include lack of a control group throughout the study. An additional limitation is the self-reported nature of the data as physicians have been shown to be poor at self-assessing...
This is exemplified by the disagreement between the improvement in self-reported counseling rates on smoking cessation observed here and our previous chart abstraction data showing continued deficiencies in this area after participation in an online module. Finally, participant bias is a potential limitation as session attendance was at the attendees’ expense, not all attendees participated in the study, and not all participants answered every question. Further bias could result from not all questions being asked at every session, and only 18% of participants completing the follow-up survey. We have provided N and n values (see legends for Figs 1 and 2 as well as data in Tables II and III) and indicated the sessions in which questions were asked for transparency of the data presented here.

In conclusion, this study showed that case-based clinical guidelines sessions can effectively improve dermatologist’s knowledge and confidence in treating psoriasis and PsA. The sessions can also influence change in clinical practice. In addition, the study identified significant practice gaps among study participants. Assessing comorbidities including PsA will help in reducing practice gaps, effectively improving patient clinical outcome and reducing significant health care cost.

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