testosterone and estradiol. Further research is needed on the subset of men who may be susceptible to 5α-reductase inhibitors.

Michael S. Irwig, MD

Author Affiliation: Division of Endocrinology and Center for Andrology, The George Washington University, Washington, DC.

Accepted for Publication: June 10, 2014.

Corresponding Author: Michael S. Irwig, MD, Division of Endocrinology, Medical Faculty Associates and George Washington University, 2150 Pennsylvania Ave NW, Washington, DC 20037 (mirwig@mfa.gwu.edu).

Published Online: September 17, 2014. doi:10.1001/jamadermatol.2014.1830.

Conflict of Interest Disclosures: None reported.

Additional Contributions: I thank Richard Amdur, PhD, for the statistical analysis, and I thank the study participants for their time.


Comparative Prevalence of Complementary and Alternative Medicine Use Among Outpatients in Dermatology and Primary Care Clinics

Previous studies suggest that people with skin diseases use complementary and alternative medicine (CAM)1,2; however, it is not known whether CAM was used specifically to treat their skin disease. We conducted a survey to determine differences in CAM use for skin diseases between patients attending dermatology clinics and those attending primary care clinics.

Methods | Research participants were recruited from 1 outpatient dermatology clinic and 1 outpatient family practice clinic at the University of California, Davis, Medical Center from November 1, 2010, to March 31, 2011. A total of 217 respondents participated in the anonymous survey, and the response rate was estimated at 62%. The study and the survey were approved by the University of California–Davis Institutional Review Board for Human Subjects Research, and all respondents provided written informed consent.

Univariate and multivariate analyses were performed with the primary outcome of CAM use among the participants. All covariates were included in all univariate and

Table 2. Semen Characteristics

<table>
<thead>
<tr>
<th>Participant</th>
<th>Concentration, Million/mL</th>
<th>Motility, %</th>
<th>Morphology, % of Normal</th>
<th>Volume, mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>3</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>4</td>
<td>2.5</td>
<td>3</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>2</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>2</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>7</td>
<td>45</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>8</td>
<td>45</td>
<td>2</td>
<td>3</td>
<td>4.0</td>
</tr>
<tr>
<td>9</td>
<td>52</td>
<td>2</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>10</td>
<td>54</td>
<td>2</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>11</td>
<td>55</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>12</td>
<td>59</td>
<td>2</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td>13</td>
<td>60</td>
<td>2</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>14</td>
<td>65</td>
<td>2</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td>15</td>
<td>109</td>
<td>2</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>16</td>
<td>115</td>
<td>2</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>17</td>
<td>126</td>
<td>2</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>18</td>
<td>144</td>
<td>2</td>
<td>3</td>
<td>4.0</td>
</tr>
<tr>
<td>19</td>
<td>320</td>
<td>2</td>
<td>3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Abbreviation: LLLR, lower limit of the reference range.

a Abnormal values are boldfaced within the table cells.

b The numbers 1 and 2 indicate first and second analyses, but not all participants underwent 2 analyses for all semen characteristics.

c No morphology results were reported for participant 5.

References

multivariate models. In multivariate analyses, certain subcategories within a covariate factor were collapsed to preserve the degree of freedom and model stability. Statistical significance was set at \( P < .05 \). All analyses were performed using Stata, version 11 (StataCorp LP).

**Results** | The demographics of those who took the survey are outlined in Table 1. Overall, 13.4% and 39.2% of the respondents reported CAM use for skin-related and non–skin-related conditions, respectively. Univariate analysis for the use of CAM for skin-related conditions (Table 2) revealed no difference in CAM use between the dermatology and primary care clinics (odds ratio [OR], 1.44; 95% CI, 0.74–2.78, \( P = .28 \)). Those of white ethnicity were less likely to use CAM compared with those of nonwhite ethnicity (OR, 0.19; 95% CI, 0.09–0.38, \( P < .001 \)). Respondents having completed a college degree were less likely to use CAM for a skin-related condition (OR, 0.41; 95% CI, 0.20–0.87, \( P = .02 \) (Table 2 and eTable 1 in the Supplement).

Herbal therapies were the most commonly used CAM (eTable 2 in the Supplement) for both skin-related (58.6%) and non–skin-related (51.8%) conditions. For skin-related conditions, 82.6% of respondents noted improvement, 17.2% noted no change, and none reported worsening. For non–skin-related conditions, 90.7% of respondents noted improvement, 7.0% noted no change, and 2.3% of respondents noted a worsening with CAM use.

**Discussion** | This study compares CAM use patterns for skin-related conditions between dermatology and primary care outpatient clinics. Previous studies have inferred skin-related CAM use patterns based on subanalyses of broader surveys\(^\text{2,3}\) or direct measurement of CAM use among only dermatology outpatients.\(^\text{4,5}\) Here, we show that skin-related
CAM use is similar among those who do and do not attend dermatology outpatient clinics.

Our results suggest that CAM is used more often in chronic skin conditions (eg, acne and eczema) rather than in acute skin conditions. Herbal therapies are the most commonly used CAM and may reflect that CAM therapies typically rely on herbal treatments.

There are several limitations to this study. Our survey was limited to English, and the respondents were predominantly of white ethnicity. Complementary and alternative edicine use is more prevalent among those who are nonwhite, and this may explain why our prevalence rates are lower than studies that have examined a more general US population. Our sampling is representative of Sacramento, California. Broader studies involving other regions are needed before drawing conclusions that would be relevant to a more general population. Because we conducted the survey anonymously, self-reported diagnoses could not be verified.

Physicians need to be aware that their patients may be engaged in CAM use for skin-related conditions, such as acne and eczema. Further clinical and basic science studies are needed to better understand their efficacy and mechanisms of action.

Raja K. Sivamani, MD, MS, CAT
J. Eileen Morley, MD
Balvinder Rehal, MD, MAS
April W. Armstrong, MD, MPH

Author Affiliations: Department of Dermatology, University of California-Davis, Sacramento (Sivamani, Rehal, Armstrong); School of Medicine, University of California-Davis, Sacramento (Morley); Department of Dermatology, University of Colorado-Denver, Aurora (Armstrong).

Accepted for Publication: July 3, 2014.
Corresponding Author: Raja K. Sivamani, MD, MS, CAT, Department of Dermatology, University of California-Davis, 3301 C St, Ste 1400, Sacramento, CA 95816 (rksivamani@ucdavis.edu).


Author Contributions: Drs Sivamani and Armstrong had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
Study concept and design: Sivamani, Armstrong.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: All authors.
Critical revision of the manuscript for important intellectual content: Sivamani, Armstrong.
Statistical analysis: Sivamani, Armstrong.
Administrative, technical, or material support: Sivamani, Armstrong.
Study supervision: Armstrong.

Conflict of Interest Disclosures: Dr Armstrong reports serving as investigator, advisor, and/or consultant to AbbVie, Amgen, Janssen, Eli Lilly, Merck, and Pfizer. No other disclosures were reported.