Dermatologists are increasingly confronted with frail, institutionalized elderly patients, as the world population is ageing rapidly and demand for permanent healthcare institutions is growing (1, 2). Skin problems are common among institutionalized elderly people and can have a significant impact on quality of life (3–6). Furthermore, dermatological care can be challenging and the opportunity to visit an outpatient dermatology clinic may be limited within this population due to factors such as immobility, multimorbidity, and cognitive impairment. The aim of this study was to investigate possible ways to improve dermatological care in this vulnerable population.

METHODS
In 2014, dermatologists and dermatology residents in the Netherlands were asked for suggestions to improve dermatological care in institutionalized elderly people in a nationwide web-based survey of geriatric dermatology. Baseline characteristics and years of experience (or training in case of a resident) of respondents were analysed. Suggestions were categorized into several topics. Data analyses were performed using Statistical Package for Social Sciences (SPSS®, version 20.0, IBM Corporation, Armonk, NY, USA).

RESULTS
Respondent characteristics are shown in Table I. In total, 83 (63.8%) dermatologists and dermatology residents suggested 149 possible ways to improve dermatological care among institutionalized elderly people. The most commonly made suggestions were: more and/or better utilization of telemedicine applications (27.5%), more visits to permanent healthcare institutions by dermatologists when indicated (22.1%), and more and/or better medical training of healthcare providers (21.5%). According to most respondents medical training should be targeted especially at elderly care physicians (78.1%), nursing staff (15.6%) and, to a lesser extent, dermatologists (6.3%). An overview of the suggested items is shown in Fig. 1.

DISCUSSION
This study provides some important suggestions for improving dermatological care in the institutionalized elderly population, which we believe are essential due to the growing population of elderly people who depend on institutionalized healthcare worldwide and the high prevalence of skin problems within this vulnerable population.

More and/or better utilization of telemedicine was the most common suggestion made. Several studies have shown that telemedicine applications could be of great value in improving medical care in institutionalized elderly people and have a positive effect on healthcare efficacy, quality of life, and a reduction in healthcare costs. The acceptance and feasibility of telemedicine applications were observed to be excellent among patients and caregivers (7–10). Furthermore, both Zelickson & Homan (7) and Binder et al. (8) showed that teledermatology consultations were able to replace some outpatient clinic visits.

Table I. Baseline characteristics for respondents in a web-based survey of geriatric dermatology

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total (n=83)</th>
<th>Dermatologists (n=59)</th>
<th>Dermatology residents (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean ± SD</td>
<td>42.9 ± 10.6</td>
<td>47.1 ± 9.3</td>
<td>32.0 ± 3.4</td>
</tr>
<tr>
<td>Male sex, n (%)</td>
<td>33 (39.8)</td>
<td>30 (50.8)</td>
<td>3 (12.5)</td>
</tr>
<tr>
<td>Years of experience, mean ± SD</td>
<td>–</td>
<td>13.8 ± 8.7</td>
<td>–</td>
</tr>
<tr>
<td>Year of training, n (%)</td>
<td>–</td>
<td>–</td>
<td>1: 3 (12.5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2: 4 (16.7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3: 4 (16.7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4: 5 (20.8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5: 8 (33.3)</td>
</tr>
</tbody>
</table>

SD: standard deviation.
Secondly, more visits to permanent healthcare institutions by dermatologists was another commonly made suggestion, which seems to be in concordance with previous studies showing considerable demands for consultation by different medical specialists and that availability of a consultant service by specialists could improve medical care for institutionalized elderly people (11, 12).

The final commonly made suggestion was more and better training of healthcare providers, especially elderly care physicians. This is despite the fact that basic dermatological training is currently included in most specialist training programmes for elderly care physicians across the Netherlands. A previous study showed a considerable demand for more and better continuing medical education among nursing home physicians, which emphasizes the importance of further development of educational programmes in the future (13). Finally, the Dutch Order of Medical Specialists is currently focussing more attention on elderly care in medical specialty training, including dermatology (14).

In conclusion, more (telemedicine) consultations and better medical training of healthcare providers seem important ways to improve dermatological care in permanent healthcare institutions. Future directions for researchers, health policymakers, and physicians should be focused on these aspects.

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