Do Patients Feel Comfortable Asking Healthcare Workers to Wash Their Hands?
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Table 2. Comparison of Mean Observed Hand Hygiene Adherence in Units with the Highest and Lowest SAQ Domain Scores

<table>
<thead>
<tr>
<th>SAQ domain</th>
<th>Bottom tertile of domain scores</th>
<th>Top tertile of domain scores</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamwork climate</td>
<td>67</td>
<td>71</td>
<td>.07</td>
</tr>
<tr>
<td>Safety climate</td>
<td>64</td>
<td>72</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>67</td>
<td>73</td>
<td>.01</td>
</tr>
<tr>
<td>Stress recognition</td>
<td>69</td>
<td>67</td>
<td>.44</td>
</tr>
<tr>
<td>Working conditions</td>
<td>67</td>
<td>73</td>
<td>.01</td>
</tr>
<tr>
<td>Perceptions of hospital management</td>
<td>67</td>
<td>72</td>
<td>.02</td>
</tr>
<tr>
<td>Perceptions of unit management</td>
<td>66</td>
<td>71</td>
<td>.09</td>
</tr>
</tbody>
</table>

Note. SAQ, Safety Attitudes Questionnaire. P value is reported for comparison of means by Wilcoxon rank-sum testing.

Table 2 shows the comparison of mean observed hand hygiene adherence in units with the highest and lowest SAQ domain scores. The table indicates that units in the top tertile of domain scores had higher hand hygiene adherence compared to those in the bottom tertile, with statistically significant differences in several domains.

Perceptions of hospital management and perceiving that teamwork climate and job satisfaction are important for hand hygiene adherence. These domains had the highest adherence rates in the top tertile, while stress recognition resulted in the lowest adherence rates in the bottom tertile.

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More than 1.7 million hospitalized patients develop healthcare-associated infections (HAIs) each year in the United States. Appropriate hand hygiene by healthcare workers...
(HCWs) is associated with reduced rates of HAI, but it is challenging to sustain. Patient empowerment may improve HCW hand hygiene, and it is recommended by the World Health Organization's SAVE LIVES: Clean Your Hands campaign. We surveyed hospitalized patients to assess their beliefs about hand hygiene by HCWs and their willingness to engage HCWs.

We used an interviewer-administered questionnaire to survey patients at a 536-bed tertiary care academic medical center. The questionnaire was designed to measure patient awareness of HAI but also included 5 questions about hand hygiene. Currently, no standardized, consistent patient education about hand hygiene occurs at our institution.

Criteria for participation included (1) being at risk of developing or having a history of infection with methicillin-resistant Staphylococcus aureus or Clostridium difficile; or (2) being at risk of developing a central line–associated bloodstream infection; or (3) being at risk of developing or currently affected by a surgical site infection. At-risk patients were defined as those who had central venous catheters or indwelling urinary catheters and had recently undergone surgery and received antibiotics. Patients who were unable to respond and those with impaired cognition were excluded from the study. This study was granted exemption by the institutional review board. We collected data on a number of patient factors, including demographics and comorbidities. Pilot testing of the questionnaire was performed. Responses to 4 questions were recorded by the interviewer on a 5-point Likert-style scale and ranged from “strongly agree” to “strongly disagree.” The final question required a yes/no response. The survey questions are presented in Table 1. The term “washing hands” encompassed the use of either soap and water or waterless hand gel and was included because mock testing indicated patient preference for the term “hand-washing” rather than “hand hygiene.” For analysis, we combined the “strongly agree” and “agree” responses into one category and “disagree” and “strongly disagree” into another.

The Pearson χ² and Kruskal-Wallis tests were used for categorical data and nonnormally distributed data, respectively, using Stata 12.0 (Stata Corp). Because of the small sample size of the study population, we did not conduct multivariate analysis.

A total of 200 patients participated in the study (response rate, 94.78%). Table 1 presents the patient responses, stratified by sex. Of the patients surveyed, 99.5% believed that HCWs were supposed to wash their hands before and after caring for patients, and 90.5% believed that HCWs should be reminded to wash their hands if they forget. Only 64% and 54% indicated that they would feel comfortable asking nurses or physicians to wash their hands, respectively, and only 14% of patients reported ever having asked caregivers to wash their hands.

Patients who had worked in health care in the past were significantly more likely to feel comfortable asking both nurses and physicians to wash their hands than those patients who had never worked in health care (odds ratio [OR], 2.17 [95% confidence interval (CI), 1.09–4.32]; P = .027; and OR, 1.95 [95% CI, 1.04–3.68]; P = .038, respectively), and compared with patients who had no more than a high school education, patients with at least a college degree were nearly twice as likely to feel comfortable asking nurses to wash their hands (OR, 1.99 [95% CI, 1.04–3.82]; P = .038). Patients who had a family member who had worked in health care were significantly more likely to feel comfortable asking physicians to wash their hands than patients who did not have a family member who had worked in health care [OR, 2.32 [95% CI, 1.25–4.32]; P = .008]. There was also a significant positive association between the level of comfort patients had in asking both nurses and physicians to wash their hands and whether they had ever asked a HCW to wash their hands in the past (OR, 5.58 [95% CI, 1.62–19.21]; P = .006; and OR, 6.29 [95% CI, 2.10–18.88]; P = .001, respectively).

The values we report here are lower than those reported in a study from Switzerland that indicated that approximately

| TABLE 1. Patients’ Responses to Survey Questions, Stratified by Sex |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Category                        | All patients    | Male            | Female          | P               |
|                                 | (n = 200)       | (n = 101)       | (n = 99)        | P               |
| Answered “strongly agree” or “agree” |                  |                 |                 |                 |
| Healthcare workers are supposed to wash their hands before and after caring for patients | 199 (99.5) | 100 (99.0) | 99 (100) | .321 |
| If healthcare workers forget to wash their hands, you should remind them to do so | 181 (90.5) | 89 (88.1) | 92 (92.9) | .246 |
| You would feel comfortable asking one of your nurses to wash his or her hands if he or she forgot | 128 (64) | 64 (63.3) | 64 (64.6) | .85 |
| You would feel comfortable asking one of your physicians to wash his or her hands if he or she forgot | 108 (54) | 56 (55.4) | 52 (52.5) | .679 |
| Answered “yes” |                  |                 |                 |                 |
| In the past, have you ever asked one of your caregivers (a nurse or doctor) to wash his or her hands? | 28 (14) | 13 (12.8) | 15 (15.2) | .642 |

Note: Data are no. (%) of patients unless otherwise indicated. P values are for comparisons between male and female patients.
70% of patients did not feel comfortable asking HCWs to perform hand hygiene. Patients’ comfort level when asking HCWs to perform hand hygiene may be very context and region specific, but it is clear that more needs to be done to empower patients to feel comfortable asking caregivers to wash their hands or use waterless hand gel.

Our findings have 2 important implications. First, within our patient population, baseline beliefs about the importance of appropriate hand hygiene in the healthcare setting were universally high; more education is unlikely to empower patients further. Second, hand hygiene campaigns should focus interventions on making patients more comfortable with asking HCWs to wash their hands.

Our study had a number of limitations. First, we surveyed a small group of patients in a single institution, using a convenience sample composed of patients at risk for or with a history of HAI, and therefore generalizability may be limited. Second, in this survey, patients with impaired cognition or who were unable to respond were excluded. This group probably included sicker patients who were at high risk for HAI; HCW hand hygiene is most important for these patients, and interventions to promote hand hygiene compliance other than patient engagement must be explored. Third, patients’ responses may have been affected by the presence or absence of family and friends at the time of the survey. Future hand hygiene campaigns should focus on empowering patients to engage in improving HCW compliance with hand hygiene, including an assessment of whether expecting patients to tell HCWs to practice hand hygiene will promote compliance.

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