Association between teaching in medical school and projected confidence teaching in residency

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BACKGROUND

• Teaching is an integral part of the task of the physician. On a daily basis, they are called upon to teach colleagues, residents, medical students and, perhaps most importantly, their patients.
• It is widely recognized that medical students benefit greatly from competent resident-teachers, and that over a third of their teaching comes from residents.
• A large volume of literature in medical education has been dedicated to exploring how to better train residents for teaching.
• There is growing interest in exploring whether exposure to teaching skills – either through formal didactics or through hands-on experiences – should be started prior to residency.

OBJECTIVE

• While learning how to teach is a critical component of residency training, it is not generally a part of core medical school curricula for medical students.
• Many medical schools offer teaching curricula and experiences in teaching but there is a gap of knowledge regarding the impact of these experiences on medical students.
• We conducted a survey to assess types of teaching experiences students participate in, and to determine if participating in these experiences is correlated with higher level of confidence in teaching as well as interest in academic medicine and in clinical education.
• We hypothesized that practicing teaching skills is related to improved predicted confidence in teaching and could lead to better teaching effectiveness in residency.

METHODS

• In winter of 2014, students from all years at a north-eastern medical school were asked to participate in an online survey which asked about:
  • types of teaching experiences both before and during medical school
  • demographic questions on age, gender and academic year
  • questions regarding self-reported attitudes towards teaching.
• The survey contained an assortment of question types including multiple choice, free-text and Likert scales.
• IRB approval was waived for this study.
• We analyzed the data using both non-adjusted and adjusted ordered logistic regression models.

REFERENCES


SUMMARY OF RESULTS

• About 43% of the medical school body responded to the online survey distributed (n=203).
• A majority of medical students participate in teaching experiences (56%), and the largest number of these experiences occur at the HAVEN Free Clinic.
• Engaging in teaching in medical school was correlated with the student’s perceived future interest in clinical education (OR=2.381; p=0.009), and with their confidence in their teaching skills (OR=2.817; p=0.001).
• Students felt that HAVEN Free Clinic prepared them best for teaching in residency (23%).

Table 1 – Characteristics of students that did and did not teach in medical school

<table>
<thead>
<tr>
<th>Total</th>
<th>Medical students that did teach in medical school (n=697)</th>
<th>Medical students that did not teach in medical school (n=110)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>17 (2.27)</td>
<td>17 (2.12)</td>
<td>0.91</td>
</tr>
<tr>
<td>Female</td>
<td>58 (46.93)</td>
<td>37 (33.64)</td>
<td>0.001</td>
</tr>
<tr>
<td>Medical</td>
<td>98 (54.44)</td>
<td>36 (32.73)</td>
<td>0.001</td>
</tr>
<tr>
<td>Senior</td>
<td>33 (55.59)</td>
<td>17 (15.45)</td>
<td>0.001</td>
</tr>
<tr>
<td>No undergrad teaching experience</td>
<td>61 (15.82)</td>
<td>9 (24.16)</td>
<td>0.033</td>
</tr>
<tr>
<td>Undergrad teaching experience</td>
<td>95 (84.18)</td>
<td>28 (75.84)</td>
<td>0.101</td>
</tr>
<tr>
<td>No gap year teaching experience</td>
<td>49 (53.15)</td>
<td>25 (50.00)</td>
<td>0.359</td>
</tr>
<tr>
<td>Gap year teaching experience</td>
<td>52 (46.85)</td>
<td>25 (50.00)</td>
<td>-</td>
</tr>
<tr>
<td>No prior to med school teaching experience</td>
<td>54 (12.18)</td>
<td>7 (14.14)</td>
<td>0.026</td>
</tr>
<tr>
<td>Prior to med school teaching experience</td>
<td>73 (87.82)</td>
<td>51 (85.86)</td>
<td>0.07</td>
</tr>
<tr>
<td>Competency in basic sciences</td>
<td>62 (0.86)</td>
<td>0.99 (0.86)</td>
<td>0.02</td>
</tr>
<tr>
<td>Competency in clinical knowledge</td>
<td>3.45 (0.94)</td>
<td>3.66 (0.99)</td>
<td>0.04</td>
</tr>
<tr>
<td>Competency in clinical skills</td>
<td>77 (0.92)</td>
<td>0.90 (0.96)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Table 2 – Association between teaching in medical school to self-reported confidence and interest in teaching

<table>
<thead>
<tr>
<th>How much do you feel that medical school has prepared you for teaching in residency? (OR, p-value)</th>
<th>How important a role do you think educating others will have in your career? (OR, p-value)</th>
<th>How interested are you in pursuing a career in academic medicine? (OR, p-value)</th>
<th>How confident are you in your teaching skills? (OR, p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>1.166 (p = 0.007)</td>
<td>0.905 (p = 0.001)</td>
<td>0.934 (p = 0.022)</td>
</tr>
<tr>
<td>Model 2</td>
<td>1.113 (p = 0.013)</td>
<td>0.926 (p = 0.001)</td>
<td>0.657 (p = 0.052)</td>
</tr>
<tr>
<td>Model 3</td>
<td>0.236 (p = 0.019)</td>
<td>0.731 (p = 0.002)</td>
<td>0.55 (p = 0.152)</td>
</tr>
<tr>
<td>Model 4</td>
<td>0.55 (p = 0.154)</td>
<td>0.381 (p = 0.009)</td>
<td>0.288 (p = 0.428)</td>
</tr>
</tbody>
</table>

REFERENCES


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LIMITATIONS

Limitations of this study include:

• It is a cross-sectional analysis and neither the directionality nor the causality of the relationships can be determined.
• The survey was completed by only 43% of students (n=203), and we cannot know if the respondent population is representative of the total population of medical students.
• Furthermore, the research asks about perceived confidence in and attitudes towards teaching, but does not assess actual resident teaching competence.

CONCLUSIONS

This research suggests that exposing students to teaching opportunities in undergraduate medical curricula could improve confidence in teaching and interest in education and could, in turn, improve educational experiences for residents, medical students and patients. It would be interesting to determine how student participation in existing teaching experiences could be enhanced and how new programs could be created to increase students’ knowledge of teaching as well as their confidence in teaching. Longitudinal research is needed to further assess the effects of undergraduate medical teaching experiences on quality of resident teaching.