Academic Achievement and Primary Care Specialty Selection of Volunteers at a Student-run Free Clinic

Sumeet S. Vaikunth, MD, MEd
Whitney A. Cesari, MD
Kimberly V. Norwood, MA
Suzanne Satterfield, MD, DrPH
Robert G. Shreve, EdD
J. Patrick Ryan, PhD
James B. Lewis, MD

University of Tennessee Health Science Center, College of Medicine, Memphis, TN
Background

- LCME states: “An institution that offers a medical education program should make available sufficient opportunities for medical students to participate in service-learning activities and should encourage and support medical student participation.”
Clinica Esperanza

- Started in 2005 by medical students at the University of Tennessee Health Science Center in Memphis, TN.
- Weekly clinic with 10-20 patient encounters.
- Patient population is uninsured Hispanic population in Memphis, TN. Tennessee had a 134% increase in Hispanic population from 2000 to 2010, the third largest increase of any state.
- Medical students who volunteer at this clinic do not receive any academic credit, and service-learning is not required as part of our medical school’s curriculum.
Literature Review

**Academic Achievement**

- **Tulane University School of Medicine-Brush, Markert, and Lazarus (2006)**
  - Students with the highest “commitment and involvement in service-learning” (CISL) were more likely to be in the second quartile, rather than the first, in class rank.

- **Medical University of South Carolina-Blue, Geesey, Sheridan, and Basco (2006)**
  - Increasing levels of medical school community service were associated with better academic performance, not only in medical school itself, but also in program directors’ evaluations of clinical skills during residency.

- **University of Nebraska Medical Center College of Medicine-Stoddard and Risma (2011)**
  - Those students with an extensive volunteer commitment did not have compromised academic performance, as no significant difference in grades between those who did and did not volunteer extensively was seen.
Literature Review

**Specialty Choice**

- UC, Davis School of Medicine-Campos-Outcalt (1985)
  - 96.5% of students who volunteered at the student-run clinic chose either Family Medicine, Internal Medicine or Pediatrics for specialty choice.

- University of Arizona College of Medicine-Campos-Outcalt, Chang, Pust, Johnson (1997)
  - Students’ involvement in a community service elective was associated with Family Medicine specialty choice.

- University of Florida College of Medicine-Davidson (2002)
  - Students’ participation in a community health education elective was associated with primary care specialty choice.

- University of Virginia School of Medicine-Owen, Hayden, and Connors (2002)
  - Female gender and higher participation in community service were associated with generalist specialty choice.

- Tulane University School of Medicine-Brush, Markert, and Lazarus (2006)
  - Specialty choice stratified into four categories, “Primary Care,” “Surgery-Based,” “Hospital-Based,” and “Non-Surgical, Non-Primary Care,” and no correlation was seen between CISL and one of these categories of specialty choice.
Objective

- Our study examines the associations between volunteering at a student-run free clinic and academic achievement, as well as volunteering and primary care specialty choice.
Volunteers had higher GPAs than non-volunteers (3.59 ± 0.33 vs. 3.40 ± 0.39, *P < .001)
Results

USMLE Step 1 and Step 2 CK Scores

Volunteers had higher Step 1 and Step 2CK scores than non-volunteers (229 ± 19 vs. 220 ± 21, *P < .001 and 240 ± 18 vs. 230 ± 21, *P < .001)
Volunteers with ≥ 7.5 hours did not have statistically significant higher GPAs than those with < 7.5 hours (3.64 ± 0.25 vs. 3.57 ± 0.37, P = .525)
Results

Step 1 & Step 2 CK of Volunteers

Volunteers with ≥7.5 hours did not have statistically significant higher USMLE scores than those with < 7.5 hours (230 ± 16 vs. 229 ± 19, P = .801 and 242 ± 13 vs. 240 ± 18, P = .403)
No significant difference in primary care choice of Volunteers, 52% (73/141) vs. Non-Volunteers, 51% (278/548), $\chi^2 = .051, P = .82$
Results

% Primary Care Specialty Choice of Volunteers

 Volunteers with $\geq 7.5$ hours, 67% (12/18) had higher primary care specialty selection than those with $< 7.5$ hours, 50% (62/123) but difference was not significant, $\chi^2 = 1.65$, $P = .19$
Conclusions

- Volunteers had higher academic achievement compared to non-volunteers.
- Though not a causal relationship, this association is interesting and has implications for emphasis on community service in medical school admissions, curriculum and extra-curricular offerings, especially considering the topic of medical student empathy.
Conclusions

- There was no significant difference in volunteers choosing primary care specialties.

- Perhaps students' desire to volunteer was based on factors other than interest in a primary care career. Students pursuing highly competitive specialties may want to add volunteer experience on their CV's.

- Thus, one would expect a significant difference away from primary care specialties if students’ volunteer experiences at the clinic had no impact.

- Numerous factors outside the scope of this study determine career selection.

- Further exploration of the associations between volunteerism, especially at student-run free clinics, and academic achievement and primary care specialty choice is warranted.
Acknowledgements

- We would like to acknowledge Dr. Alicia McClary, PhD, for her dedication to Clinica Esperanza, as the clinic would not have been created or sustained without her support.

- We would also like to acknowledge the clinical faculty who volunteer their time so graciously- Dr. James Lewis, Dr. Bruce Steinhauer, Dr. Patricia Adams-Graves, and Dr. Keith Ellis.

- Finally, we would like to acknowledge the generosity of Christ Community Health Center in Memphis, TN, as they continue to volunteer their facility and resources for our use.
References

References

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<thead>
<tr>
<th>Year</th>
<th>Overall Participation Rate</th>
<th>Female Participation Rate (\chi^2=0.75, P = 0.39)</th>
<th>GPA (3.13 \pm 0.35) vs. (3.18 \pm 0.45) (P=0.57)</th>
<th>Step1 (218 \pm 18) vs. (219 \pm 21) (P=0.70)</th>
<th>Step2CK (227 \pm 16) vs. (228 \pm 22) (P=0.85)</th>
<th>Primary Care Selection Rate (\chi^2 =0.56, P = 0.45)</th>
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<td>2008</td>
<td>9% (14/149)</td>
<td>13% (7/55)</td>
<td>(3.61 \pm 0.31) vs. (3.50 \pm 0.31) (P=0.31)</td>
<td>(224 \pm 21) vs. (223 \pm 22) (P=0.90)</td>
<td>(237 \pm 19) vs. (232 \pm 22) (P=0.29)</td>
<td>57% ((8/14)) vs. 47% ((63/135)) (\chi^2 =0.07, P = 0.79)</td>
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<td>2009</td>
<td>13% (17/136)</td>
<td>14% (7/50) (\chi^2=0.16, P = 0.69)</td>
<td>(3.70 \pm 0.31) vs. (3.43 \pm 0.35) (P=0.01)</td>
<td>(234 \pm 18) vs. (224 \pm 20) (P=0.008)</td>
<td>(246 \pm 17) vs. (232 \pm 21) (P&lt; 0.001)</td>
<td>48% ((8/17)) vs. 44% ((52/119)) (\chi^2 =0.24 , P =0.62)</td>
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<td>2010</td>
<td>17% (24/143)</td>
<td>15% (8/55) (\chi^2=0.32, P = 0.57)</td>
<td>(3.63 \pm 0.29) vs. (3.45 \pm 0.36) (P=0.005)</td>
<td>(233 \pm 19) vs. (225 \pm 21) (P=0.001)</td>
<td>(241 \pm 16) vs. (234 \pm 21) (P=0.01)</td>
<td>50% ((12/24)) vs. 55% ((66/119)) (\chi^2 =0.28 , P =0.60)</td>
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<td>2011</td>
<td>30% (41/136)</td>
<td>41% (24/58) (\chi^2=6.06, P = 0.014)</td>
<td>(3.63 \pm 0.26) vs. (3.39 \pm 0.47) (P&lt; 0.001)</td>
<td>(229 \pm 18) vs. (222 \pm 21) (P=0.005)</td>
<td>(241 \pm 18) vs. (234 \pm 21) (P&lt; 0.001)</td>
<td>49% ((20/41)) vs. 54% ((51/95)) (\chi^2 =0.28 , P =0.60)</td>
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<td>2012</td>
<td>36% (45/125)</td>
<td>39% (24/61) (\chi^2=0.58, P = 0.45)</td>
<td>(3.64 \pm 0.25) vs. (3.57 \pm 0.37) (P = 0.525)</td>
<td>(230 \pm 16) vs. (229 \pm 19) (P = 0.801)</td>
<td>(242 \pm 13) vs. (240 \pm 18) (P = 0.403)</td>
<td>56% ((25/45)) vs. 58% ((46/80)) (\chi^2 =0.04 , P =0.83)</td>
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<td>Total</td>
<td>20% (141/689)</td>
<td>21% (70/379) (\chi^2=6.16, P = 0.013)</td>
<td>(3.59 \pm 0.33) vs. (3.40 \pm 0.39) (P&lt; 0.001)</td>
<td>(229 \pm 19) vs. (220 \pm 21) (P&lt; 0.001)</td>
<td>(240 \pm 18) vs. (230 \pm 21) (P&lt; 0.001)</td>
<td>52% ((73/141)) vs. 51% ((278/548)) (\chi^2 =.051, P = 0.82)</td>
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<td>≥7.5 vs. &lt; 7.5 hours</td>
<td>13% (18/141)</td>
<td>14.3% (10/70) (\chi^2=0.288, P = 0.591)</td>
<td>(3.64 \pm 0.25) vs. (3.57 \pm 0.37) (P = 0.525)</td>
<td>(230 \pm 16) vs. (229 \pm 19) (P = 0.801)</td>
<td>(242 \pm 13) vs. (240 \pm 18) (P = 0.403)</td>
<td>67% ((12/18)) vs. 50% ((62/123)) (\chi^2 =1.65, P = 0.19)</td>
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