

TEACHING ORGAN AND TISSUE DONATION IN MEDICAL AND NURSING EDUCATION: A  
NEEDS ASSESSMENT

**Ashley E. Anker, M.A.**

*Department of Communication  
University at Buffalo, The State University of New York  
Buffalo, New York, USA*

**Thomas Hugh Feeley, Ph.D.**

*Communication, Family Medicine, Nursing & Health Behavior  
University at Buffalo, The State University of New York  
Buffalo, New York, USA*

**Erica Friedman, M.D.**

*Department of Medical Education  
Mount Sinai School of Medicine  
New York, New York, USA*

**Joan Kruegler**

*New York Alliance for Donation  
New York, New York, USA*

**Contact Information:**

Ashley Anker  
University at Buffalo, The State University of New York  
8F Baldy Hall, North Campus  
Amherst, NY 14260  
Phone: 585-738-6254  
Fax: 716-645-2086  
Email: [aanker1@yahoo.com](mailto:aanker1@yahoo.com)

**Acknowledgement:** This project was supported by grant No. 1 R39OT05404 from Health Resources and Services Administration's Division of Transplantation (HRSA/DoT), US Department of Health and Human Services. The contents of this publication are solely the responsibility of the authors and do not necessarily represent the view of HRSA/DoT.

## ABSTRACT

**Context:** Research on organ donation education is limited due to its reliance on convenience samples and its failure to assess methods of instruction on the topic.

**Objective:** To describe medical and nursing students' training in organ donation by examining curriculum content and methods of instruction using a national sample of medical schools and a statewide sample (New York) of nursing schools.

**Design:** Self-report online survey.

**Participants:** Nursing and Medical Deans responsible for curriculum development and evaluation.

**Outcome Measure:** Participants provided information on the inclusion of specific organ donation topics, skills related to organ donation, and the declaration of personal donation intentions within their respective educational programs. Methods of instruction on such topics (e.g., standardized patients, lectures, small groups) were also assessed.

**Results:** Although many educational programs include an organ donation component, a significant portion of schools failed to provide instruction on donation consent processes, definitions of brain and cardiac death, and the discussion of organ donation during a routine healthcare visit. The majority of schools rely on lectures as the sole method of instruction. Recommendations are made for program improvements that include use of active learning methods, stringent assessments using standardized patients, and curriculum changes.

**Key Words:** Organ donation, medical, nursing, education

## **Teaching Organ and Tissue Donation in Medical and Nursing Education: A Needs Assessment**

It is widely recognized that the United States faces a public health crisis in the form of an organ shortage. This shortage results in a long list of individuals waiting for, and sometimes never receiving, life-saving organ transplants.<sup>1-2</sup> During 2007 alone, 52,869 individual's names were added to the transplant waiting list,<sup>3</sup> with waiting list candidates reaching a staggering 99,863 names as of September 28, 2008.<sup>4</sup> Such figures are even more daunting when one considers that there were only 14,400 donors in 2007 to supply the need for transplantable organs.<sup>5</sup> While multiple suggestions have been offered for resolving the organ shortage, ranging from policy changes<sup>6</sup> to public education,<sup>7</sup> the present study suggests that the education of healthcare professionals is also critical to resolving the organ shortage. Healthcare professionals are important to furthering the cause of donation, as they have been identified as an information source about donation,<sup>8-9</sup> and are considered influential in encouraging donation.<sup>10-11</sup> Specifically, the present paper reports on the current state of organ donation education in samples of medical and nursing school deans.

### **Role of Healthcare Professionals in Organ Procurement**

Historically, healthcare professionals have been responsible for identifying potential organ donors at the time of death and asking for familial consent to donation.<sup>12</sup> However, two pieces of legislation -- required request and routine referral laws -- have changed the role of healthcare professionals in the procurement system. Required request laws state that all eligible families must be offered the option of organ donation, while routine referral laws require that hospitals notify a local organ procurement organization [OPO] of a patient's impending death.<sup>6</sup> Such laws are intended to allow specially trained OPO coordinators to request donation, rather than having untrained hospital staff approach a family.<sup>13</sup> These laws have resulted in some improvements in procurement success<sup>13</sup> and have changed the process

of approaching families for donation. Physicians and other healthcare professionals are no longer encouraged (unless specially trained), to approach a family for donation.<sup>14</sup> Under the current request system, however, healthcare professionals still play an important role in increasing the donor pool; Healthcare professionals must still be able to respond to family-initiated questions about donation, educate a family about brain death, and be involved in “team huddles” to collaborate with OPO coordinators on the best methods of approaching a potential donor family.<sup>14-15.</sup>

One method of creating a pool of healthcare professionals who are knowledgeable about organ donation is to educate future members of the healthcare profession while they are still enrolled in medical or nursing schools. Both medical and nursing students have been documented as having generally positive attitudes toward donation,<sup>16-18</sup> with up to 80% of students reporting signing a donor registry or card.<sup>17</sup> Unfortunately, such positive attitudes toward donation have generally been accompanied by low levels of knowledge on the topic.<sup>19-20</sup> Specifically, students in various samples have been found to lack knowledge on donation consent processes, brain death, and donor eligibility criteria.<sup>17, 19-20</sup> Educating future healthcare professionals on the topic of organ donation is critical, as many of the identified barriers to donation, such as families who decline donation due to a failure to understand brain death,<sup>21</sup> are directly relevant to the role of healthcare professionals. Encouragingly, studies that have intervened in the medical and/or nursing student population have documented students’ increased knowledge, self-efficacy, attitudes toward donation, and favorable program evaluations following intervention.<sup>22-24</sup>

### **Assessment of the Current State of Medical and Nursing Education**

A significant limitation of the prior research on healthcare students and organ donation is the failure to consider how organ donation is implemented in healthcare programs across the United States. To date, only one study has considered how a national sample of nursing schools provides education on organ donation<sup>25</sup> and this study focused on specific topics incorporated into the curriculum; it did not

consider specific methods of instruction that may be more or less effective in promoting donation, nor did it assess efforts to teach students to declare their own donation intentions. In medical schools, efforts are even more limited, with convenience samples and data from students in other countries offering the only information on organ donation instruction in medical schools.<sup>16-17; 19</sup> Specifically, the authors were unable to identify any national effort to study organ donation instruction and assessment in medical schools. The present study surveys a national sample of medical schools and a statewide (New York) sample of nursing schools on organ donation topics contained in their curriculum and the methods utilized to instruct students on such topics. Results of the present study will provide a framework for future interventions in the medical/nursing student community, identifying areas where students are in need of further education or assessment.

## METHOD

### **Overview**

The present study was designed to examine the current instruction and assessment of organ donation in a national sample of medical schools and a statewide (New York) sample of nursing schools. Individuals in charge of education or curriculum development were identified and received an e-mail invitation to participate in an online survey (developed through [www.surveymonkey.com](http://www.surveymonkey.com)) that queried respondents as to how organ donation topics, skills related to organ donation, and the declaration of personal donation intentions were addressed within the school's curriculum.

### **Participants**

Using information available from the American Medical Association and the New York State Nurse's Association, lists were compiled of accredited nursing schools in New York and medical schools in the United States. By visiting each school's website, e-mail addresses were obtained for the individuals in charge of curriculum development (e.g., Medical Schools Deans, Medical Education Coordinators,

Nursing Deans, Directors, etc.). Such a process resulted in the identification of 126 deans in medical schools and 107 deans or directors in New York nursing schools, who received an e-mail invitation to participate in the survey. Following the first round of e-mails, non-respondents were sent additional reminder invitations after two and three weeks' elapsed.

### **Survey Design**

Based on a review of the relevant literature and communication with professionals in the donation and transplantation fields, a survey was developed to examine medical/nursing school curriculum content in the following three areas: (1) instruction in organ donation, (2) instruction in skills related to organ donation, and (3) assessment of student knowledge regarding organ donation. All questions were multiple-choice and aimed to explore both the inclusion of the content area within a school's curriculum, as well as the method of instruction (i.e., lecture, small group interaction, patient interaction, standardized patient, or "other" methods) used to present the material to students.

## **RESULTS**

### **Instruction in Deceased Organ Donation**

A total of 54 medical schools and 50 nursing schools completed the survey, resulting in response rates of 42.8% and 46.7%, respectively. Forty medical schools (74.1%) and 34 nursing schools (68.0%) presently provided instruction on organ donation. Overall, the topic of donation was considered to be "important" in the schools' curriculums (Medical:  $N = 28$ ; 51.9%; Nursing:  $N = 21$ ; 42.0%), followed by being identified as "somewhat important" (Medical:  $N = 14$ ; 25.9%; Nursing:  $N = 11$ ; 22.0%) or mandatory/critical (Medical:  $N = 9$ ; 16.7%; Nursing:  $N = 10$ ; 20.0%). Medical and nursing schools diverged somewhat in terms of how students were taught about organ donation. Of those schools that reported providing instruction on the topic, medical schools reported teaching students through lecture ( $N = 29$ ; 72.5%), small group interactions ( $N = 26$ ; 65.0%) or patient interactions ( $N = 19$ ; 47.5%). In

contrast, nursing schools reported providing instruction through lectures ( $N = 28$ ; 82.4%), “other” methods of instruction ( $N = 6$ ; 17.4%), small groups ( $N = 5$ ; 14.7%), or patient interactions ( $N = 4$ ; 11.7%). Other methods of instruction included innovative techniques such as inviting organ procurement coordinators or donor/recipient families to speak to nursing students. Of those schools that reported including an organ donation component in their curriculum, schools were also asked to report how students were instructed on specific organ donation topics (See Table 1).

### **Skills Related to Organ Donation**

All schools, regardless of whether they provided instruction in post-mortem organ donation, were asked to report how they taught students about two related issues: (1) how to discuss end-of-life issues (i.e., health care proxy, advance directive) with a patient, and (2) how to discuss organ donation at a routine healthcare visit. Results suggested that end-of-life issues were discussed in the majority of nursing and medical programs, but preferred methods of instruction differed by program. Medical schools tended to teach end-of-life issues through small group interactions ( $N = 46$ ; 85.2%), lectures ( $N = 36$ ; 66.7%), patient interactions ( $N = 20$ ; 37.0%), or standardized patients ( $N = 15$ ; 27.8%). Nursing schools, in contrast, taught end-of-life issues primarily through lectures ( $N = 36$ ; 72.0%), small groups ( $N = 10$ ; 20.0%), or patient interactions ( $N = 7$ ; 14.0%). Four nursing programs (8.0%) also reported that they do not teach end-of-life issues. In contrast, many medical ( $N = 27$ ; 50.0%) and nursing schools ( $N = 21$ ; 42.0%) reported that they do not teach students how to discuss organ donation during a routine healthcare visit. When the topic was introduced to students, schools utilized lectures (Medical:  $N = 8$ ; 14.8%; Nursing:  $N = 10$ ; 20.0%), small groups (Medical:  $N = 11$ ; 20.4%; Nursing:  $N = 3$ ; 6.0%), patient interactions (Medical:  $N = 6$ ; 11.1%; Nursing:  $N = 5$ ; 10.0%), and standardized patients (Medical:  $N = 2$ ; 3.7%) as methods of instruction. In addition to being asked about how students were instructed on topics

related to post-mortem donation, schools were also questioned on if and how they taught students to declare their personal donation intentions (See Table 2).

### **Assessment of Organ Donation Knowledge**

In total, 21 medical schools (38.9%) and 30 nursing schools (60.0%) reported that they provide assessments of students' knowledge on organ and tissue donation. Of those medical schools using an assessment, short answer exams ( $N = 9$ ; 42.9%), standardized patients ( $N = 4$ ; 19.0%), oral exams ( $N = 1$ ; 4.8%), and "other" methods ( $N = 7$ ; 33.3%) of assessment, such as multiple choice examinations, small group interactions, or observation of students in a clinical context, were common. Of the nursing schools reporting an assessment of organ donation knowledge, methods included primarily short answer exams ( $N = 12$ ; 40.0%) and "other" methods of assessment ( $N = 2$ ; 6.6%), such as multiple choice examinations.

## **DISCUSSION**

The present study offers baseline information on the current state of organ donation education in medical and nursing schools. Results suggest that organ donation is seen as an important topic and has been incorporated into the curricula of a significant portion of the schools surveyed. While such findings represent an important first step toward creating a healthcare team that is well-educated and positive toward donation, results also suggest areas of improvement that should be targeted by those looking to intervene with medical/nursing student populations.

### **Improving Instruction in Organ Donation**

While a substantial portion of schools report offering instruction on organ donation, the present study also identified deficits in students' donation education. For example, 20.0% of medical schools and 8.8% of nursing schools who provide donation instruction also report that they do not teach their students about the consent process, including the individuals responsible for obtaining donation consent. Current practice in organ procurement suggests that OPO coordinators and specially trained staff members should

be the only individuals who approach a family about donation,<sup>6,14</sup> as unexpected donation requests have led families to decline donation.<sup>26</sup> Without education on the consent process, medical and nursing professionals cannot be expected to abide by the required referral laws and consult OPO officials prior to speaking with families. A lack of education could lead to well-intended, but overzealous, healthcare professionals requesting donation at inappropriate or unexpected times. As such, it is recommended that future training programs in organ donation teach students about required referral laws and the rationale behind such laws to prevent inappropriate donation requests from occurring.

A small minority of medical (5.0%) and nursing (11.8%) programs also reported that they do not teach students the definitions of brain and cardiac death. Of those programs that do offer instruction on the topic, lectures were the educational format of choice. Previous research has suggested that brain death can be a difficult topic for both the general public and the healthcare community to grasp,<sup>27</sup> and is directly relevant to organ donation as families of brain dead patients often decline donation when they do not understand the patient's diagnosis.<sup>21,28</sup> As medical professionals are the individuals responsible for educating families about brain death, it is critical that future programs in organ donation include information about this topic. Programs may also do well to instruct students on brain death using methods such as patient interaction or patient observation, where students can physically observe the clear signs of brain death in a patient. Perhaps such a training format can make brain death more salient and easily understood within the medical community, allowing healthcare professionals to transfer such knowledge to patients' families.

Finally, a review of all of the topics included in organ donation programs suggests that most students are taught about organ donation through lectures. While lectures are certainly valuable, recent research that aims to teach undergraduate students about organ donation suggests that active learning opportunities may be even more beneficial to students' educational successes regarding donation.<sup>29</sup> For a

topic such as organ donation, which is not salient to the general population,<sup>30</sup> active learning opportunities such as patient interactions or interactions with standardized patients may offer optimal learning opportunities that are easily remembered. Particularly for students who are entering rural hospitals, as opposed to large trauma centers, a more vivid presentation of organ donation information may help students to recall knowledge on a topic that they are likely to encounter infrequently during their employment.

### **Importance of Skills Regarding Donation**

Results of the present study suggest that not only are medical and nursing students lacking education on particular post-mortem donation topics, but students are also not being taught to discuss organ donation with patients during routine healthcare visits. While medical students believe that physicians should discuss donation with patients,<sup>17</sup> and many healthcare providers report being asked about organ donation,<sup>31</sup> few healthcare practitioners actually have information available on donation for their patients.<sup>32</sup> Noting the positive attitude of medical students toward speaking about donation with patients could offer a prime opportunity to teach students early in their careers to instill in patients the importance of documenting donation decisions in life.

Similarly, the present study also found that many schools fail to teach students how to document their own donation decisions in life. Such findings are important for a number of reasons. First, families often consider and follow the wishes of the decedent in considering donation,<sup>26,33</sup> and professional training in healthcare offers the perfect opportunity for students to create a documentation of their personal wishes. Second, and perhaps more importantly, healthcare professionals have the potential to create hospital environments and normative social influences that are positive toward donation. For example, among nurses who have worked procuring donor organs, attitudes toward donation are somewhat negative.<sup>34</sup> Educating students on the benefits of donation early in their career may serve to create a healthcare

environment that is positive toward donation and can encourage familial consent to donation through staff modeling of prosocial donation behaviors.<sup>35</sup>

### **Improving Assessments of Organ Donation Knowledge**

Among both medical and nursing schools, the present study suggested that only a moderate amount of schools provide an assessment of students' donation knowledge. When assessed, students tend to be asked to complete short answer examinations about donation. While such efforts represent worthy first steps in encouraging donation, they may provide assessment at merely the "knows," rather than the "shows how" level.<sup>36</sup> Assessments using techniques such as standardized patients may offer a more accurate picture of students' donation knowledge, particularly as recent research (Feeley, T. H., Anker, A. E., Soriano, R., Friedman, E., & Kane, T., unpublished data, 2008) suggests that students are often unable to reproduce their organ donation knowledge in interactions with standardized patients. Thus, findings of the present study also recommend that more stringent assessments of organ donation knowledge be implemented in medical/nursing curriculums, to create a pool of healthcare professionals who are able to deal with challenging, real-life, donation situations.

### **CONCLUSION**

The present study represents the first national effort to consider the state of organ donation instruction in medical schools and a supplementary assessment to previously existing research on donation education in nursing schools.<sup>25</sup> Study results are relevant to the future success of the donation system, as healthcare professionals are in a unique position to positively influence donation outcomes by creating hospital environments that are supportive of donation, working in cooperation with OPO staff to request donation, and by providing families with adequate information on brain death. Results of the present study suggest that medical and nursing students are not given adequate information or training to meet these roles, as national programs lack curriculum components designed to enhance students' knowledge of

brain death and the consent process and simultaneously rely primarily on lectures as a method of training. Future interventions in medical/nursing schools would do well to incorporate greater information on brain death and consent processes, provide more active learning opportunities to students, and assess students' donation knowledge using more involved techniques, such as standardized patients.

## REFERENCES

1. Punch, J. D., Hayes, D. H., LaPorte, F. B., McBride, V., & Seely, M. S. Organ donation and utilization in the United States, 1996-2005. *Am J Transplant.* 2007;7:1327-1338.
2. Schnitzler, M. A., Whiting, J. F., Brennan, D. C., et al. The life-years saved by a deceased organ donor. *Am J Transplant.* 2005;5:2289-2296.
3. Waiting list additions: State by listing year [database on the Internet]. Organ Procurement and Transplantation Network. [retrieved on September 10, 2008]. Available from <http://www.optn.org/latestData/rptData.asp>.
4. Waiting list candidates [database on the Internet]. Richmond (VA): The United Network for Organ Sharing. [retrieved on September 28, 2008]. Available from <http://www.unos.org>.
5. Donors recovered in the U.S. by donor type [database on the Internet]. Organ Procurement and Transplantation Network. [retrieved September 9, 2008]. Available from <http://www.optn.org/latestData/rptData.asp>.
6. Institute of Medicine. *Organ donation: Opportunities for action*. Washington, DC: The National Academies Press; 2006.
7. Feeley, T. H. College students' knowledge, attitudes, and behaviors regarding organ donation: An integrated review of the literature. *J Appl Soc Psychol.* 2007;37:243-271.
8. Feeley, T. H. & Servoss, T. J. Examining college students' intentions to become organ donors. *J Health Commun.* 2005;10:237-249.
9. Sander, S. L. & Miller, B. K. Public knowledge and attitudes regarding organ and tissue donation: An analysis of the northwest Ohio community. *Patient Educ Couns.* 2005;58:154-163.

10. Gallup Organization. 2005 national survey of organ and tissue donation attitudes and behaviors. [Retrieved on September 28, 2008]. Available from <http://www.organdonor.gov/survey2005/sources.shtm>.
11. Saub, E. J., Shapiro, J. & Radecki, S. Do patients want to talk to their physicians about organ donation? Attitudes and knowledge about organ donation: A study of Orange County, California residents. *J Commun Health*. 1998;23:407-417.
12. Kiberd, C. Curriculum effect on nursing students' attitudes and knowledge toward organ donation and transplantation. *ANNA Journal*. 1998;25:210-216.
13. Siminoff, L. A. & Mercer, M. B. Public policy, public opinion, and consent for organ donation. *Camb Q Healthc Ethic*. 2001;10:377-386.
14. Williams, M. A., Lipsett, P. A., Rushton, C. H., et al. The physician's role in discussing organ donation with families. *Crit Care Med*. 2003;31:1568-1573.
15. Shafer, T. J., Wagner, D., Chessare, J., Zampiello, F. A., McBride, V., & Perdue, J. Organ donation breakthrough collaborative: Increasing organ donation through system redesign. *Crit Care Nurse*. 2006;26:33-49.
16. Cantwell, M. & Clifford, C. English nursing and medical students' attitudes toward organ donation. *J Adv Nurs*. 2000;32:961-968.
17. Essman, C. & Thornton, J. Assessing medical student knowledge, attitudes, and behaviors regarding organ donation. *Transplant P*. 2006;38:2745-2750.
18. Schaeffner, E. S., Windisch, W., Freidel, K., Breitenfeldt, K. & Winkelmayr, W. C. Knowledge and attitude regarding organ donation among medical students and physicians. *Transplantation*. 2004;77:1714-1718.

19. Bardell, T., Hunter, D. J. W., Kent, W. D. T., & Jain, M. K. Do medical students have the knowledge needed to maximize organ donation rates? *Can J Surg.* 2003;46:453-457.
20. Jones-Riffell, A. J. & Stoeckle, M. L. Attitudes of upper division nursing students toward organ donation. *J Contin Educ Nurs.* 1998;29:274-281.
21. West, R. & Burr, G. Why families deny consent to organ donation. *Australian Crit Care.* 2002;15:27-32.
22. Essman, C. C. & Lebovitz, D. J. Donation education for medical students: Enhancing the link between physicians and procurement professionals. *Progress in Transplantation.* 2005;15:124-128.
23. Feeley, T. H., Tamburlin, J. & Vincent, D. E. An educational intervention on organ and tissue donation for first-year medical students. *Progress in Transplantation.* 2008;18:1-6.
24. Garcia, C. D., Barboza, A. P., Goldani, J. C. et al. Educational program of organ donation and transplantation at medical school. *Transplant P.* 2008;40:1068-1069.
25. Chabalewski, F. L., Ellis, J. M., & McGaw, L. J. Education related to organ donation and transplantation in undergraduate nursing schools: 1993 versus 2000. *Progress in Transplantation.* 2002;12:243-253.
26. Siminoff, L. A., Gordon, N., Hewlett, J. & Arnold, R. M. Factors influencing families' consent for the donation of solid organs for transplantation. *JAMA.* 2001;286:71-77.
27. DuBois, J. M. & Anderson, E. E. Attitudes toward death criteria and organ donation among healthcare personnel and the general public. *Progress in Transplantation.* 2006;16:65-73.
28. Pelletier, M. The organ donor family members' perception of stressful situations during the organ donation experience. *J Adv Nurs.* 1992;17:90-97.

29. Feeley, T. H., Anker, A. E., Williams, C. R. & Vincent, D. E. A multi-campus classroom intervention to promote organ and tissue donation. In E. Alvaro & J. Siegel (Eds.). *Applied psychology and organ donation: Implementing and evaluating health behavior interventions* Lawrence Erlbaum Associates..
30. Anker, A. E., Feeley, T. H., & Kim, H. Examining the attitude-behavior relationship in prosocial donation domains. *J Appl Psychol*.
31. Rios, A., Conesa, C., Ramirez, P., et al. Information requested about organ donation in primary health care centers. *Transplant P*. 2006;38:2367-2370.
32. Coolican, M. B. & Swanson, M. A. Primary health-care physicians: Vital roles in organ and tissue donation. *Conn Med*. 1998;62:149-153.
33. DeJong, W., Franz, H. G., Wolfe, S. M., et al. Requesting organ donation: An interview study of donor and nondonor families. *Am J Crit Care*. 1998;7:13-23.
34. Regehr, C., Kjerulf, M., Popova, S. R., & Baker, A. J. Trauma and tribulation: The experiences and attitudes of operating room nurses working with organ donors. *J Clin Nurs*. 2004;13:430-437.
35. Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychol Rev*. 1977;84:191-215.
36. Miller, G. E. The assessment of clinical skills/competence/performance. *Acad Med*. 1990;65:S63-S67.

**Table 1: Topic-Specific Instruction in Organ and Tissue Donation**

<i>Topic</i>	<i>Method of Instruction</i>										
	<i>Lecture</i>		<i>Small Group</i>		<i>Patient Interaction</i>		<i>SPE</i>	<i>Other Method</i>		<i>Do Not Teach</i>	
	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>
Total <i>N</i> responding	40	34	40	34	40	34	40	40	34	40	34
Organ and tissue donor eligibility	23 (57.5%)	25 (73.5%)	16 (40.0%)	5 (14.7%)	11 (27.5%)	3 (8.8%)	1 (2.5%)	0 (0.0%)	1 (2.9%)	4 (7.1%)	3 (8.8%)
Individuals responsible and the process of obtaining consent for donation	20 (50.0%)	23 (67.6%)	15 (37.5%)	4 (11.8%)	10 (25.0%)	2 (5.9%)	1 (2.5%)	0 (0.0%)	0 (0.0%)	8 (20.0%)	3 (8.8%)
Definitions of brain and cardiac death	31 (77.5%)	23 (67.6%)	18 (45.0%)	2 (5.9%)	11 (27.5%)	1 (2.9%)	0 (0.0%)	0 (0.0%)	2 (5.9%)	2 (5.0%)	4 (11.8%)
Magnitude of the need for organ procurement	24 (60.0%)	24 (70.6%)	15 (37.5%)	3 (8.8%)	10 (25.0%)	2 (5.9%)	0 (0.0%)	1 (2.5%)	1 (2.9%)	5 (12.5%)	2 (5.9%)

Note: Med = Medical Schools; Nurs = Nursing Schools; SPE = Standardized Patients; Nursing schools did not report use of standardized patients for any topic and thus are excluded from this table

**Table 2: Instruction on Declaring Personal Donation Intentions**

<i>Topic</i>	<i>Method of Instruction</i>											
	<i>Lecture</i>		<i>Small Group</i>		<i>Patient Interaction</i>		<i>SPE</i>		<i>Other Method</i>		<i>Do Not Teach</i>	
	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>	<i>Med</i>	<i>Nurs</i>
Total <i>N</i> <i>responding</i>	54	50	54	50	54	50	54	50	54	50	54	50
Teach recognition of the importance of donation	25 (46.3%)	30 (60.0%)	20 (37.0%)	6 (12.0%)	13 (24.1%)	3 (6.0%)	2 (3.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (16.7%)	8 (16.0%)
Teach students to consider donating own organs	10 (18.5%)	16 (32.0%)	6 (11.1%)	5 (10.0%)	4 (7.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (3.7%)	1 (2.0%)	27 (50.0%)	17 (34.0%)
Teach students how to give personal consent to donation	10 (18.5%)	17 (34.0%)	12 (22.2%)	4 (8.0%)	6 (11.1%)	0 (0.0%)	0 (0.0%)	1 (2.0%)	2 (3.7%)	1 (2.0%)	22 (40.7%)	17 (34.0%)

Note: Med = Medical Schools; Nurs = Nursing Schools; SPE = Standardized Patients