Meeting the Family: Promoting Humanism in Gross Anatomy

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Background: Human dissection commonly occurs early in the undergraduate medical school curriculum, thus presenting an immediate opportunity for educators to teach and encourage humanistic qualities of respect, empathy, and compassion. Purpose: The purpose of this study was to measure the impact of the Donor Luncheon, a unique program in which medical students meet the families of the anatomical donor prior to dissection in the anatomy course at the University of Oklahoma College of Medicine. Methods: Students were randomized into groups of 8 to attend the luncheon and either met with family of the donor or attended the luncheon with no donor family present. A questionnaire measured students’ attitudes at 2 weeks, 6 weeks, and at the conclusion of the anatomy course. Results: Factor analysis revealed 5 scales. Analysis revealed statistically significant differences across time for Donor as Person, Dissection Process, and Donor as Patient and statistically significant differences between groups for Donor as Person and Donor as Patient. Conclusions: These results suggest that this program can provide students with the opportunity to maintain more humanistic attitudes at the beginning of their medical education career.

Unlike students at most other North American medical schools, freshman medical students at the University of Oklahoma (OU) College of Medicine have the opportunity to meet the family of the anatomical donor and to hear interesting and meaningful stories about the donor prior to entering the lab for their first dissection experience. It is commonly known that most medical schools, if not all, have some form of memorial service for the anatomical donors, which is generally held at the end of the Gross Anatomy course. This type of memorial service is also a critical component of the anatomical program at OU and serves as a means for students to recognize and honor the donors and their important contribution to medical education. The component that makes this anatomical program unique, however, is the Donor Luncheon—a program that emphasizes the human component of medicine by fostering interactions between students and the donor families before the donor’s body is ever dissected.

Human dissection within a gross anatomy course commonly occurs early in the undergraduate medical school curriculum, thus presenting an opportunity for medical educators to immediately begin to teach and encourage humanistic qualities of respect, empathy, and compassion, all of which are an integral part of professionalism in medicine. These qualities may develop rapidly and continue over time when students understand and appreciate that the donor was once a living person with a name, a family, and a life history. In most cases, the bodies that students use to cut, dissect, and explore are voluntarily donated and, in effect, become the student’s first model for the patient–physician relationship. Unfortunately, students may be inadequately prepared for their initial encounter with the human body and as a result may experience a variety of emotions. Studies report conflicting results regarding students’ attitudes toward human dissection and the emotional impact of the experience. For example, a number of studies report that some students may experience negative emotions like...
anxiety, disgust, and/or apprehension—particularly prior to the
first incision.11–18

Reports also point toward observations of increased feelings
of detachment or disinterest over time.19–23 Utilization of a cop-
ing mechanism, such as intellectualizing the experience, psy-
chologically and emotionally permits students to participate in
the dissection process and to view the donor body as a specimen
rather than a nonliving human being.20 Another term frequently
used in the literature is “detached concern,” which allows physi-
cians to listen empathically without becoming emotionally in-
volved.24 Halpren,25 however, argued that cultivating empathy
requires emotional engagement.

Weeks, Harris, and Kinzey26 suggested four ways that gross
anatomy instructors and other educators can help students de-
velop respect and compassion. The first recommendation is to
use language that demonstrates respect—specifically language
that uses the word “donor” instead of “cadaver” or “corpse.”
The authors noted that “donor” signifies a more positive con-
notation and reminds students and faculty of the extraordinary
privilege that has been given to them by the donor. Second is
the suggestion to furnish students with information about the
donor, such as the donor’s name, age, history, and cause of
death. These authors believe that having this information fur-
ther reminds students that the donor was at one time a living
human being. The third suggestion is for instructors to look for
opportunities to discuss with students any topics and feelings
that are stimulated by the dissection experience. As noted previ-
ously, some studies have found that students experience anxiety
and apprehension just prior to or during dissection. Addressing
these concerns, rather than denying them, may keep students
emotionally engaged longer. The final suggestion is for instructors
to conduct a memorial ceremony at the end of the gross anatomy
course to reinforce the attributes of respect, empathy, and compassion.
In describing the memorial service at the Medical College of
Virginia, Dixon27 stated that students’ guilt or grief is relieved
when they have the opportunity to hear from the families about
the life of the donor, thus allowing students to have closure to
their questions and speculations.

In this article, we describe a unique program in American
medical education and its effects on medical students’ attitudes
toward the anatomical donor and the dissection experience. The
Anatomical Donor Luncheon is designed to foster and promote
students’ empathy, respect, and compassion for the donor as a
person. The overarching goal for this program is to humanize
the gross anatomy experience by giving students the opportunity
to hear the deceased donor’s life story prior to the dissection
experience.

DESCRIPTION OF THE ANATOMICAL DONOR
LUNCHEON

The Donor Luncheon was initiated in 2000 and is an annual
tradition at our institution. During orientation week, all freshman
medical students attend a luncheon with the family members
of those anatomical donors that students will study as part of
their Gross Anatomy course. Families of the donors are mailed
a letter from the executive dean of the College of Medicine
inviting them to join the medical students for lunch. They are
told they will meet the group of students that will dissect the
donor’s body during the anatomy course. The letter explicitly
tells the families that this luncheon is an opportunity to stress
the humanistic aspects of medicine. No specific directions are
given to the donor families with regard to how they should
prepare for the luncheon and the ensuing discussion with the
students. However, many families bring photo albums, a written
script, or other materials that help tell the donor’s life story to
their group of medical students. Generally, three to five family
members attend the luncheon to represent the anatomical donor.
These family members often include the surviving spouse, adult
children, and/or siblings of the donor.

Prior to the Donor Luncheon, students are assigned to an
eight-person dissection team and receive a packet of informa-
tion that includes the donor’s name. On the morning of the
luncheon, Gross Anatomy faculty outline what students can ex-
pect. The students are encouraged to use the Donor Luncheon
as an opportunity to learn about the donor’s life story. Occasion-
ally, donor families that had initially agreed to participate in the
luncheon decide not to participate, thus leaving some students
with no donor family members present. When this occurs, a
faculty facilitator sits with the students to discuss the anatomy
course and any concerns or fears students have related to their
upcoming dissection experience. Independent of whether or not
students meet the donor’s family at the Donor Luncheon, all
students are provided with the donor’s name, age, and cause of
death before they enter the dissection lab.

We believe the Donor Luncheon supports our goal to promote
empathy, compassion, and respect and hypothesize that students
who participate in this program will be less likely to disengage
from the dissection experience and feel more empathic toward
the anatomical donor. To investigate this hypothesis, we de-
sign a prospective, randomized study to measure the effects
the Donor Luncheon had on freshman medical students’ atti-
uettes about their dissection experience.

METHODS

This prospective, randomized study was approved by the In-
stitutional Review Board of the University of Oklahoma Health
Sciences Center.

Participants

During freshman orientation of 2005, incoming medical stu-
dents (N = 157) were asked to participate in this study and
underwent informed consent before the Donor Luncheon. All
students had been previously randomly assigned to a dissection
group with eight students, working on a single donor for the
duration of the Gross Anatomy course. Assignment was done
via a computer randomization program. Three groups were ran-
domly selected not to have a donor family present at the Donor
Luncheon. In addition to these 24 students, two additional families that had agreed to participate in the luncheon did not attend. Therefore, 40 students (five groups) served as the control group, whereas those whose families attended the luncheon were the intervention group (15 groups).

**Questionnaire Development and Administration**

The Human Dissection Questionnaire was created by a review of the literature to assess outcomes of the Donor Luncheon program. Two of the authors (SMC and JBV) developed an initial pool of 30 items. These authors worked with an additional author (DOD) to review and revise the items to create a 24-item questionnaire. Each item was scaled on a 5-point Likert scale (*strongly agree* to *strongly disagree*). To provide evidence of construct validity, we performed exploratory factor analysis with varimax rotation to identify latent dimensions among the items. We used scree plot examination, eigenvalues of 1.0 or greater, and a minimum of two items loading on a factor at 0.40 or greater.

This questionnaire was administered to students online within the first 2 weeks of the start of the Gross Anatomy course (T1), at 6 weeks (T2), and at the conclusion (T3) of the course to assess the impact of the Donor Luncheon on students’ attitudes toward their dissection experience. An initial invitation was sent by e-mail, followed by three e-mail reminders approximately 1 week apart.

**Statistical Analysis**

Differences over time and between the two groups were analyzed via multivariate analysis of variance (MANOVA) using SPSS version 17.0. We set alpha at <.05, and we set educational significance (effect size) at $\eta^2 = .06$ and 0.16 as medium and large-sized differences based on published recommendations since there was no prior research in this area to guide us.

**RESULTS**

Seventy-eight students completed all three questionnaires, for a response rate of 50%, with response rates of 64%, 59%, and 56% at T1, T2, and T3, respectively. Most students were Caucasian, with male subjects composing more than half (Table 1). Demographics were representative of the medical school class as a whole. We found no statistically significant differences in grade point average, MCAT averages, age, race/ethnicity, or gender between the intervention or control groups.

Factor analysis revealed five scales that accounted for 63% of the overall variance. Prior to analyses, negatively worded items were reverse coded so that higher numbers represented more favorable attitudes. The five scales were as follows: viewing the donor as a person (Donor as Person), outlook toward the dissection process (Dissection Process), emotions toward the cadaver (Emotional Reactions), having a sense of hurting the donor (Personalization), and viewing the donor as a patient (Donor as Patient). Cronbach’s alpha for each scale revealed high internal consistency for most scales, with .83, .85, .74, .63, and .47 alpha levels for Donor as Person, Dissection Process, Emotional Reactions, Personalization, and Donor as Patient, respectively. Each of the scales, along with the items that factored on the scale, is presented in Table 2.

We conducted a MANOVA to assess differences in attitudes across time and between the two groups. Analysis revealed overall statistically significant differences across time for Donor as Person, Dissection Process, and Donor as Patient (Table 3, Figure 1). Our analysis also revealed statistically significant differences between groups (Intervention vs. Control) for Donor as Person and Donor as Patient (Table 3, Figure 1). Even though students attitudes toward the donor as a person were initially neutral and showed a significant decrease over time ($p < .001$, $\eta^2 = .34$), attitudes of the intervention group remained higher at each time point ($p = .016$, $\eta^2 = .07$). As is noted in Table 3, student attitudes towards the dissection process improved over time ($p < .001$). However, this change represented a small effect size ($\eta^2 = .02$), and we found no differences between groups. Neither Emotional Reactions nor Personalization changed over time. Finally, students attitudes toward the Donor as Patient statistically significantly increased over time ($p < .001$, $\eta^2 = .11$), with differences noted between the two groups ($p = .043$, $\eta^2 = .05$).

**DISCUSSION**

The primary objective of the Donor Luncheon is to humanize the gross anatomy experience and reinforce our medical school’s goals of teaching empathy, compassion, and respect. The Donor Luncheon offers students the opportunity to meet the donor’s family and to hear the donor’s life story prior to the first day of dissection. The purpose of this study was to assess the impact of the Donor Luncheon on students’ attitudes toward the dissection process.

The principal findings of this study can help inform anatomy course directors at other medical schools. Our hypothesis that students who met the donor families and heard about the donor’s
TABLE 2

Items and scales of the Human Dissection Questionnaire

<table>
<thead>
<tr>
<th>Donor as Person</th>
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<tbody>
<tr>
<td>Q5. I feel myself thinking of the donor’s family. (r)</td>
<td>Q8. I find myself identifying with the donor, the dead person. (r)</td>
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<tr>
<td>Q9. I quit thinking of the donor as a human being and detached myself from the process.</td>
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<tr>
<td>Q12. I find myself empathizing with the donor’s family. (r)</td>
<td>Q13. I find myself thinking of the donor as a live person. (r)</td>
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<td>Q16. I find myself approaching it more intellectually than emotionally.</td>
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<tr>
<td>Q17. I find myself approaching it more emotionally than intellectually. (r)</td>
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<td>Q22. I feel a connection with the donor. (r)</td>
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<tr>
<th>Dissection Process</th>
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<tbody>
<tr>
<td>Q1. I feel a sense of disgust.</td>
<td>Q9. I quit thinking of the donor as a human being and detached myself from the process.</td>
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<tr>
<td>Q2. I feel a sense of anxiety.</td>
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<td>Q3. I feel a sense of dislike for the process of dissection of the human body.</td>
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<td>Q7. I want to avoid the dissection laboratory.</td>
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<tr>
<td>Q14. I find myself being disturbed by the mutilation that is occurring on the donor’s body.</td>
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<tr>
<td>Q23. I find myself quite apprehensive to making an incision.</td>
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<tr>
<th>Emotional Reactions</th>
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<tr>
<td>Q4. I feel a sense of excitement for the process of discovery. (r)</td>
<td>Q6. I feel guilty for having access to the donor while his/her family misses their loved one.</td>
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<tr>
<td>Q11. I find myself feeling sad.</td>
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<tr>
<td>Q15. I find myself suppressing my feelings.</td>
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<tr>
<td>Q20. I feel alone in the experience.</td>
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<tr>
<td>Q24. I think I might be willing to donate my body to be used as a cadaver. (r)</td>
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</table>

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<tr>
<th>Personalization</th>
<th></th>
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<tbody>
<tr>
<td>Q18. I have a sense of hurting the cadaver.</td>
<td>Q21. I have dreams of the donor</td>
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<tr>
<th>Donor as Patient</th>
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<tbody>
<tr>
<td>Q10. I find myself wondering about the suffering the donor must have had while dying of his/her disease.</td>
<td>Q19. I feel the experience is an invasion of the donor’s privacy.</td>
</tr>
</tbody>
</table>

Note. All item scales 1 (strongly agree) to 5 (strongly disagree). Items noted (r) were reverse coded for analysis.

Life would view the donor as a person more than the control group was supported by these study results. Although it is true that student attitudes about the donor as a person decreased over time for both groups, it is important to point out that at baseline and throughout the Gross Anatomy course, attitudes about the donor as a person started out higher and remained significantly higher across time for the intervention group. Students in the intervention group found themselves thinking of the donor’s family more, were less likely to detach or disengage themselves from the dissection process, and did not quit thinking of the donor as a human being. We believe this lack of detachment or disengagement by students was the result of students meeting the family and hearing specifics about the donor’s life. The fact that students reported a continued tendency to think of the donor as a human being is a crucial finding in our attempt to humanize the gross anatomy experience through the Donor Luncheon. These findings suggest that interaction with the family facilitates higher empathy, compassion, and respect.

Last, students who met their donor’s family found themselves wondering less about the suffering the donor might have experienced as a result of his or her disease and did not believe that dissection was an invasion of the donor’s privacy. We believe this is most likely because students were exposed to the donor’s narrative and were not left to invent one of their own. Although we cannot be certain of discussions between the students and donor families at the Donor Luncheon, we know that most students had the opportunity to hear stories about their donor and, in a sense, get to know the donor. Thus, the intervention group did not have to wonder about how this person might have experienced his or her illness and any suffering that might have occurred. The authors agree with Weeks et al.26 that students who know the donor’s history and meet his or her family may increase students’ appreciation of the donor as a human being. When students have an opportunity to hear the donor’s life story, it connects them to a real person and patient, thus increasing the likelihood that the donor will be treated with empathy, compassion, and respect.

It is not particularly surprising that student attitudes regarding the donor as a person declined over time. Likewise, students were not affected differently by the process of dissection, and they had no extreme emotional reactions or personalization toward the cadaver. Previous studies in fact suggest that students quickly develop coping mechanisms and a sense of detachment that allows them to participate in the dissection experience.19–23

Although these results strongly suggest that meeting the donor families prior to the dissection lab helps students to connect to the anatomical donor as a person with a lived life, it is apparent that the donor luncheon is not sufficient for student attitudes to remain high throughout the Gross Anatomy course. In reexamining the recommendations of Weeks et al.,26 we suggest that the area we must improve is additional opportunities to bolster student attitudes, both as the onset and during the dissection process. We propose that providing students with the opportunity to reflect on the donor luncheon and their dissection experience can be a powerful trigger for reflection.29 Based on the results of this study, we are now attempting to create more opportunities for students through written narrative exercises.30

These conclusions must be tempered by several limitations of this study. First, our results reflect only 1 year of students at one medical school; therefore, studies with additional
TABLE 3
Analysis of scale results between time points and between groups (intervention and control)

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>p</th>
<th>η²</th>
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<tr>
<td></td>
<td>M</td>
<td>CI</td>
<td>M</td>
<td>CI</td>
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<tr>
<td>Donor as Person</td>
<td></td>
<td></td>
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<tr>
<td>Intervention</td>
<td>2.94</td>
<td>2.75,3.14</td>
<td>2.51</td>
<td>2.32,2.70</td>
<td>2.34</td>
</tr>
<tr>
<td>Comparison</td>
<td>2.48</td>
<td>2.09,2.86</td>
<td>2.06</td>
<td>1.70,2.43</td>
<td>1.89</td>
</tr>
<tr>
<td>Process of Dissection</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Intervention</td>
<td>3.75</td>
<td>3.51,3.99</td>
<td>4.33</td>
<td>4.14,4.51</td>
<td>4.28</td>
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<tr>
<td>Comparison</td>
<td>3.86</td>
<td>3.39,4.33</td>
<td>4.11</td>
<td>3.75,4.78</td>
<td>4.17</td>
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<tr>
<td>Emotional Reactions</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Intervention</td>
<td>3.79</td>
<td>3.60,3.99</td>
<td>4.05</td>
<td>3.90,4.21</td>
<td>4.02</td>
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<tr>
<td>Comparison</td>
<td>3.97</td>
<td>3.58,4.35</td>
<td>4.01</td>
<td>3.70,4.32</td>
<td>4.04</td>
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<tr>
<td>Personalization</td>
<td></td>
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<tr>
<td>Intervention</td>
<td>4.52</td>
<td>4.32,4.73</td>
<td>4.75</td>
<td>4.62,4.89</td>
<td>4.59</td>
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<tr>
<td>Comparison</td>
<td>4.59</td>
<td>4.19,5.00</td>
<td>4.63</td>
<td>4.36,4.89</td>
<td>4.66</td>
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<tr>
<td>Donor as Patient</td>
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<td></td>
<td></td>
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<tr>
<td>Intervention</td>
<td>3.73</td>
<td>3.50,4.00</td>
<td>4</td>
<td>3.73,4.17</td>
<td>4.09</td>
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<tr>
<td>Comparison</td>
<td>3.25</td>
<td>2.79,3.71</td>
<td>3.4</td>
<td>2.97,3.84</td>
<td>3.81</td>
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Note. CI = confidence interval.

In summary, we believe our results affirm that a program such as the Donor Luncheon provides an ideal opportunity to begin to teach and encourage the humanistic qualities of respect, empathy, and compassion prior to students’ entry into the dissection lab. This program is one institution’s attempt to develop students’ emotional attachment, in the hopes of fostering and preserving humanism.

REFERENCES


