Anatomy scores weakly predict PACKRAT and PANCE performance

INTRODUCTION and PROJECT GOALS
Anatomy education in the Duke Physician Assistant (PA) program has historically been prostate-based and heavily clinically oriented, and was performed by surgical fellows and residents, PA clinicians, and PA faculty. Based on alumni feedback, in 2009 this course was transformed into a foundational anatomy course with student-performed dissection and led by a biological anthropologist. This change included additional lab and lecture time, and as part of this modification data were collected describing incoming students’ prior anatomy experience. These data were used to combine experienced and non-experienced students into labs to group learning and maximize lab resource use. At present we have data for four years of students in this new anatomy curriculum.

The goal of this study was to evaluate whether these data describing past anatomy experience can be used to predict anatomy course performance and/or performance on the Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) and the Physician Assistant National Certifying Exam (PANCE).

RESULTS

Most students entered Duke with two semesters of undergraduate anatomy

- 45% of students had experience with plastinated specimens and human-animal (human and non-human), and 37% percent reported experiencing a combination of dissection and dissection
- Few students had only virtual dissection (7%) or human cadaver dissection (13%)
- 60% of incoming students had not previously worked with a human cadaver

When asked to rank their comfort level with performing human cadaver dissection, most students indicated that they were comfortable with supervision, fairly comfortable, or very comfortable.

- There was a sex difference in reported comfort levels; over four years, most male students reported that they were very comfortable with cadaver dissection and none considered themselves as uncomfortable with cadaver dissection. Conversely, females most commonly categorized themselves as ‘comfortable with supervision’ and 45% of incoming students had previously worked with a human cadaver

DISCUSSION AND CONCLUSIONS
The majority of Physician Assistant programs across the country (86%) require anatomy as an entrance pre-requisite (Rizzolo et al., 2011; PAEA, 2011). However, few programs delineate exactly what this previous anatomy experience should entail. At the Duke PA program, students are required to have taken at least one or four credit anatomy course, and while lab experience is encouraged, it is not required. The data presented here suggest students entering the Duke PA program with a wide array of anatomy experience, ranging from virtual dissection only to full human cadaver dissection. In fact, many of the incoming students have never worked with cadaver tissue and report discomfort at the idea of human cadaver dissection. However, this data also suggest that the level of anatomy experience prior to entering PA school does not predict PA school performance, either in the anatomy course itself, or on the PACKRAT/PANCE. This could suggest two interpretations: 1) utilizing prior experience data to ensure that lab groups contain a mixture of experience levels allows less experienced students to perform better overall, and 2) students who have had little anatomy experience would perform well in PA school regardless of their prior anatomy experience.

While there is little relationship between past anatomy experience and performance, past academic performance (NSGPA) and age were found to significantly predict PA school performance, with age negatively correlated with performance, and NSGPA positively correlated with performance. This negative correlation between age and performance may be a result of more demands on older students’ time (e.g., families, children), or because older applicants are more likely to be admitted with slightly lower GPAs but more applicable and extensive clinical experience (data not reported here). Finally, although the variance explained by the regression of PACKRAT and PANCE scores on anatomy performance is low, these relationships are highly significant. Given that so many other factors influence PACKRAT/PANCE performance, this result deserves further consideration, particularly in the context of other preclinical and clinical course performance.

We caution that these results may be specific to the Duke PA program and that similar data in other programs could yield different results. We also note that these data have no ability to speak to whether Duke PA student performance differs significantly when anatomy is provided or dissection based. We found no significant differences in anatomy, PACKRAT, or PANCE performance from when anatomy was dissection-based (e.g., instruction prior to 2009); however, we have no ability to judge how students would perform in the current course if only prosections were performed. Student feedback has overwhelmingly been positive and students value the hands-on experience that dissection provides them. When asked whether they believe that their dissection skills improved throughout the course, between 66% and 76% of students agreed, while only 81%-90% report having been comfortable with dissection at the start of the course. These data suggest that human cadaver dissection is a valuable component of education in the Duke PA program.

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LITERATURE CITED