

## Introduction

- **Purpose:** To identify correlations between nurse anesthesia program (NAP) design and residents' perceptions of academic quality and wellness
- **Aim:** Provide current evidence following recently updated requirements to foster insight into the impact of a required doctoral degree for entry-level residents
- **Academic quality:** Associated outcomes related to teaching, learning, research, and service within an institution—a learning environment that provides resources for both faculty and students to meet objectives and accreditation standards<sup>1</sup>
- **Wellness:** “A positive state of mind, body, and spirit reflecting a balance of effective adaptation, resilience, and coping mechanisms in personal and professional environments that enhance the quality of life”<sup>1</sup>

## Methods

- Retrospective Cross-Sectional Mixed-Methods survey
- Reviewed and approved by Central Connecticut State University's Institutional Review Board (Protocol #10433)
- **Development of Survey**
  - NAP-High Yield Elements (NAP-HYE): from literature review and informal poll
  - Academic quality & wellness: Dundee Ready Education Environment Measure (DREEM) questionnaire – validated for health science students
  - Survey items: yes/no questions, Likert scale, numerical value, and open-ended responses
- **Statistical Analysis**
  - DREEM scores correlated with NAP-HYE findings
  - Quantitative: Kruskal Wallis & Pearson correlation tests; Post hoc analysis: Dunn's test; *P*-values adjusted with the Holm method
  - Qualitative: thematic analyses were performed to determine common themes

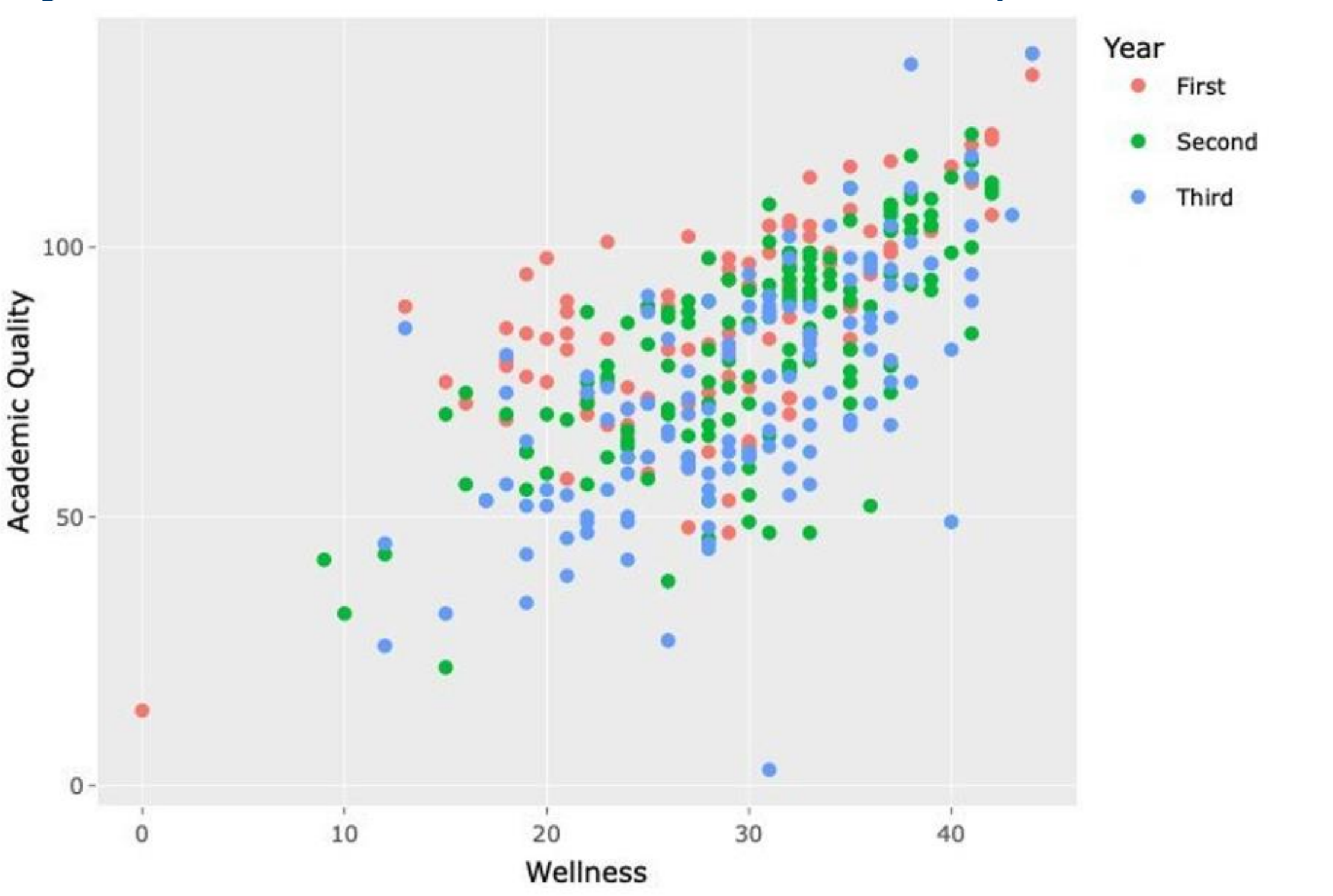
## Results

Table 1. Nurse Anesthesia Program High-Yield Elements Correlations to Perceived Academic Quality and Wellness

	Perceived academic quality			Perceived wellness		
	Test stat	P value (95% CI)	Implications	Test stat	P value (95% CI)	Implications
Formal mentorship <sup>b</sup>	$\chi^2 = 17.9$ ; df = 1	<.001	Positive difference <sup>c</sup>	$\chi^2 = 16.9$ ; df = 1	<.001	Positive difference <sup>c</sup>
Convenient housing to clinical sites <sup>b</sup>	$\chi^2 = 16.7$ ; df = 1	<.001	Positive difference	$\chi^2 = 10$ ; df = 6	.007	Positive difference
Perceived racial diversity faculty <sup>b</sup>	$\chi^2 = 7.1$ ; df = 2	.028	Positive difference <sup>c</sup>	$\chi^2 = 7.5$ ; df = 2	<.024	Positive difference <sup>c</sup>
Days off between semesters <sup>a</sup>	$r = .26$	<.001 (0.16-0.35)	Weak positive correlation	$r = .15$	.003 (0.05-0.25)	Weak positive correlation
No. of instructors teaching 1 course <sup>a</sup>	$r = .02$	.726 (-0.08-0.12)	No correlation	$r = .01$	.838 (-0.09-0.11)	No correlation
Simulation hours <sup>a</sup>	$r = .08$	.127 (-0.02 -0.18)	No correlation	$r = .12$	.021 (0.02-0.22)	No correlation
No. of clinical sites <sup>a</sup>	$r = -.16$	.002 (-0.26 - -0.06)	No correlation	$r = .05$	.364 (-0.05-0.15)	No correlation
No. of oral exams <sup>a</sup>	$r = -.04$	.42 (-0.14-0.06)	No correlation	$r = .02$	.731 (-0.12-0.08)	No correlation
Weekly clinical hours <sup>a</sup>	$r = -.21$	<.001 (0.31 - -0.11)	No correlation	$r = .04$	.487 (-0.07-0.14)	No correlation
Mode of instruction <sup>b</sup>	$\chi^2 = .13$ ; df = 2	.934	No statistically significant difference <sup>d</sup>	$\chi^2 = .11$ ; df = 2	.946	No statistically significant difference <sup>d</sup>
Front-loaded or integrated program <sup>b</sup>	$\chi^2 = .24$ ; df = 1	.622	No statistically significant difference	$\chi^2 = .22$ ; df = 1	.641	No statistically significant difference

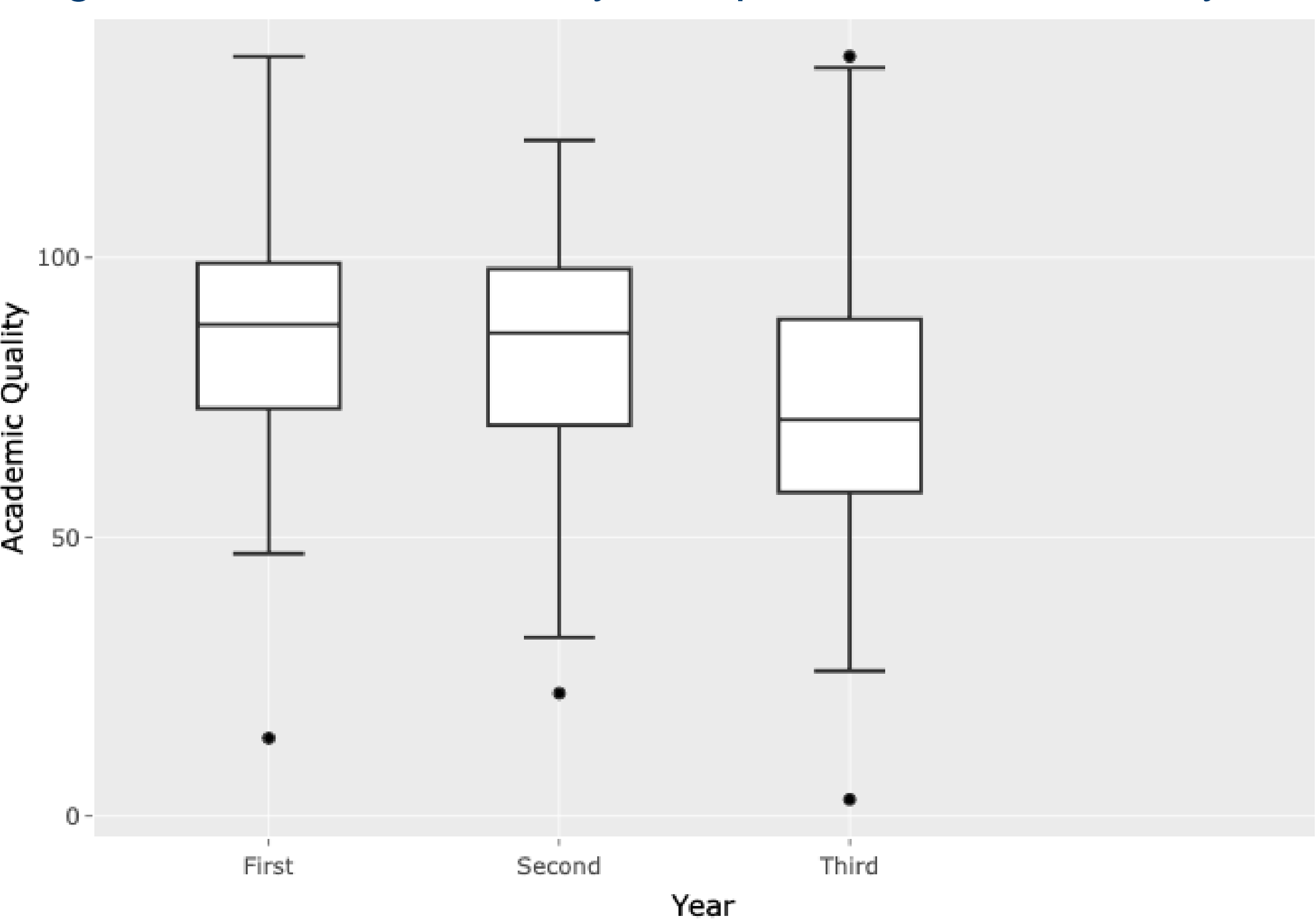
<sup>a</sup>A Pearson correlation calculated the association between nurse anesthesia program high-yield elements (NAP-HYE) and Dundee Ready Education Environment Measure (DREEM) scores for academic quality and wellness.  
<sup>b</sup>A Kruskal-Wallis test was used to test for differences among NAP-HYEs and DREEM scores.  
<sup>c</sup>Degree of positive difference increases with each year of study.  
<sup>d</sup>Results compared online, in-person, and hybrid modes of instruction.

Figure 1. Correlation Between Academic Quality and Wellness<sup>a</sup>



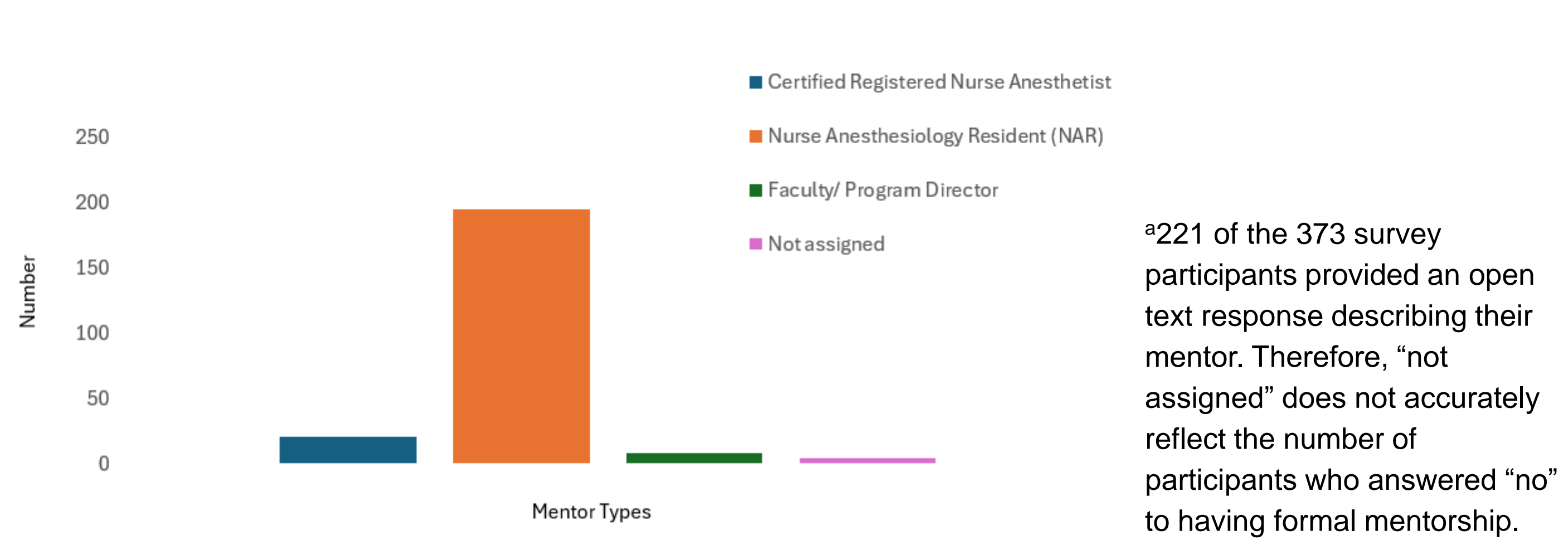
<sup>a</sup>Academic Quality and Wellness: positive correlation ( $r = .65$ ; 95% CI, 0.5868-0.7047;  $P < .001$ )

Figure 2. Academic Quality Compared to Year of Study<sup>a</sup>



<sup>a</sup>A Pearson correlation calculated between the DREEM score for academic quality and year of study. Academic quality decreases as the year of study increases

Figure 3. Mentor Types Reported<sup>a</sup>



<sup>a</sup>221 of the 373 survey participants provided an open text response describing their mentor. Therefore, “not assigned” does not accurately reflect the number of participants who answered “no” to having formal mentorship.

## Qualitative Analysis

Table 2. Common Themes Impacting Residents' Perceptions

Academic Quality <sup>a</sup> (n)	Wellness <sup>b</sup> (n)
Faculty support and mentorship (42)	Time off/rest days (54)
Effective instructors (34)	Faculty support and mentorship (30)
Simulation activities (20)	Wellness activities and check-ins (30)
Supplemental & interactive learning tools (17)	Peer and family support (26)
Peer support (17)	Mental health & self-care (19)

<sup>a</sup>171 of the 373 survey participants answered regarding academic quality  
<sup>b</sup>172 of the 373 participants answered regarding wellness

## Discussion

- Participants with formal mentorship perceived higher academic quality
- Participants' perceptions of academic quality declined with each advancing year of study
- “Faculty support and mentorship” were the most common themes related to perceived academic quality and second most common for wellness
- The quantitative analysis found simulation hours statistically insignificant, but 20 participants (11.7%) reported that simulation positively impacted their academic quality

### Limitations

- Cannot confirm the number of program directors who shared the survey link or NARs reached
- Unable to capture inclusive racial demographics for analysis
- Extended survey length may have led to reduced participation

### Future research

- Researchers should explore strategies to ensure consistent mentorship for 3rd-year NARs
- Investigate how different mentor types impact perceptions of academic quality and wellness
- Evaluate the impact of diversity on academic quality and wellness in cohorts

## References

