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### Exploratory Study of Undergraduate Pre-health and Nursing Student Differences in Development

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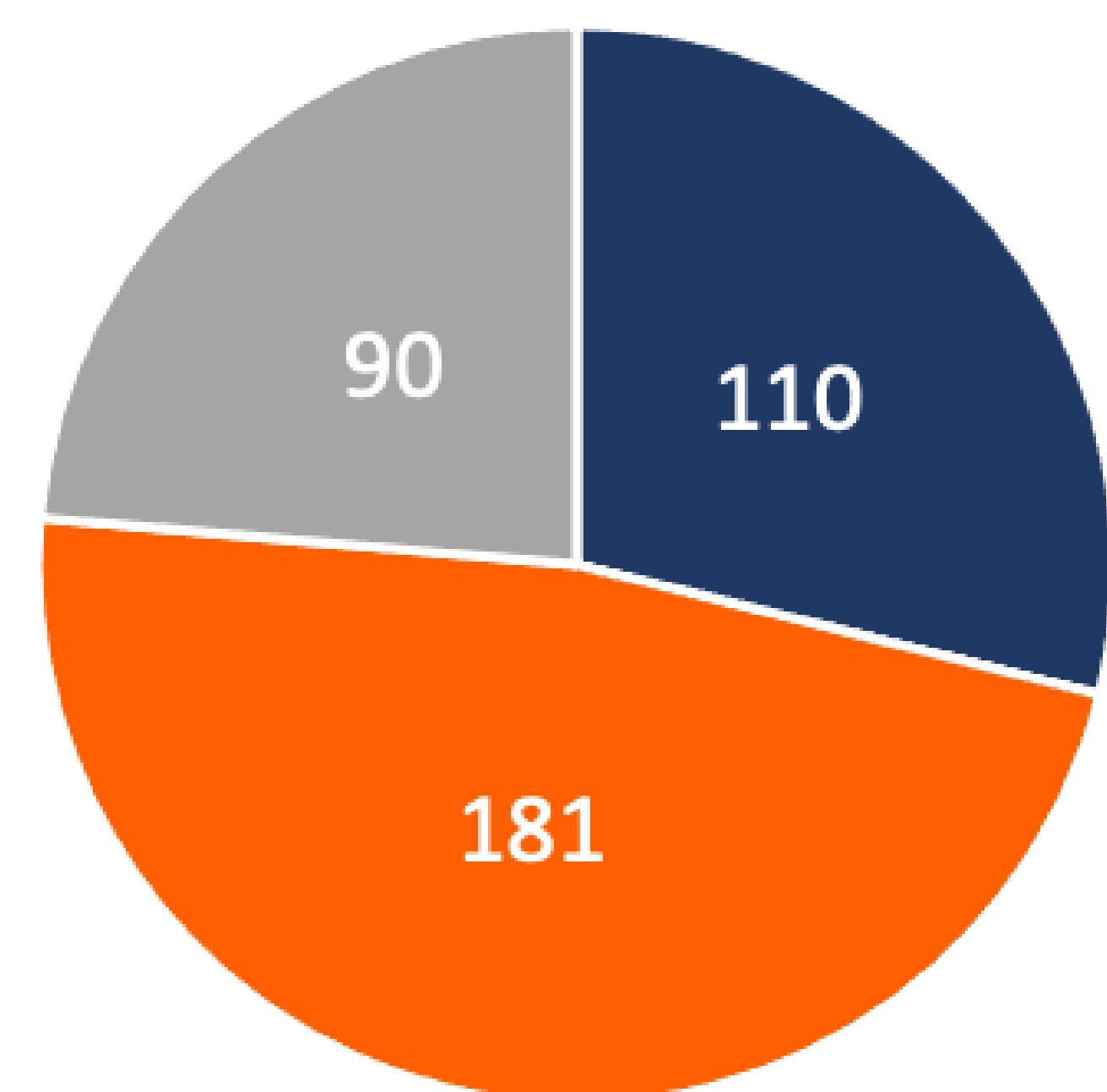
## Introduction

There is a great deal of research on how professionalization and work of medical students, physicians, and nurses affect them, including burnout, stress, and empathy loss. We are interested in the earlier development of these trends and whether they already begin within undergraduate students pursuing health or nursing professions. There is a substantial knowledge gap in the differences and commonalities between pre-health, nursing, and students who have left health professions already. This research explores some of these commonalities and differences that begin developing quite early in nurses' and physicians' education. We are looking specifically at aspects we have labeled as stressors and others we have labeled as part of students' identity.

## Methods

- The data for this study come from a longitudinal panel study of undergraduate students pursuing pre-health or nursing programs at the time of entering college. Students were surveyed once per year and both Wave 1 and Wave 2 data have been collected from all three cohorts.
- Variables
  - Empathic concern and perspective taking (Davis 1983)
  - Burnout (West et. al 2009)
  - Boredom-proneness (Struk et al. 2017)
  - Study hours (Nonis and Hudson 2010)
  - Compartmentalization (Balboni et. al 2015)
  - Humility (Leary et. al 2017)
  - Religiosity (Van Tongeren 2020)
- Data were analyzed in SPSS using one-way ANOVAs and Tukey's multiple comparisons

**Figure 1.** Population breakdown of number of students in each profession. (N=381)



■ Nursing ■ Healthcare ■ Left Healthcare

**Table 1: Stressors**

	Nursing (1)		Healthcare (2)		Left Healthcare (3)		1 v 2		1 v 3		2 v 3	
	Mean	STD	Mean	STD	Mean	STD	Mean Diff.	STE	Mean Diff.	STE	Mean Diff.	STE
Burnout	4.11	2.54	4.70	2.84	4.10	2.51	-0.57	0.42	0.02	0.47	0.59	0.35
Confidence (W1)	4.31	0.87	4.20	0.80	2.76	1.20	0.12	0.12	1.56 ***	0.14	1.44 ***	0.12
Study Hours	3.62	1.79	4.07	1.70	3.02	1.66	-0.45	0.26	0.60 +	0.29	1.05 ***	0.22
Boredom	82.36	9.33	81.56	8.08	85.03	8.37	0.80	1.27	-2.67	1.41	-3.48 **	1.08
Stress	6.51	1.84	6.26	2.02	5.96	2.17	0.25	0.31	0.55	0.36	0.30	0.27
Compartmentalization	3.02	1.25	2.94	1.13	3.06	1.28	0.08	0.18	-0.04	0.20	-0.12	0.16

p<0.1 = +, p<0.05 = \*, p<0.01 = \*\*, p<0.001 = \*\*\*

**Table 2: Identity**

	Nursing (1)		Healthcare (2)		Left Healthcare (3)		1 v 2		1 v 3		2 v 3	
	Mean	STD	Mean	STD	Mean	STD	Mean Diff.	STE	Mean Diff.	STE	Mean Diff.	STE
Med. Prof. Parent	0.22	0.42	0.24	0.43	0.19	0.40	-0.02	0.05	0.03	0.06	0.05	0.06
First Gen. Student	0.22	0.42	0.12	0.33	0.18	0.39	0.10 +	0.05	0.04	0.06	-0.06	0.05
Political Identity	3.78	1.40	3.77	1.50	3.82	1.50	0.00	0.18	-0.04	0.22	-0.05	0.20
Mentor	0.59	0.50	0.72	0.45	0.67	0.47	-0.13	0.07	-0.08	0.08	0.05	0.06
Humility	20.36	4.63	22.00	4.35	21.14	4.16	-1.62 *	0.66	-0.78	0.73	0.83	0.56
Perspective Taking	25.91	4.53	25.93	4.28	24.90	5.10	-0.02	0.70	1.05	0.79	1.07	0.60
Empathic Concern	28.93	3.52	28.14	4.00	27.09	4.72	0.78	0.63	1.83 *	0.71	1.05	0.54
Male	0.11	0.32	0.25	0.44	0.30	0.46	-0.14 *	0.05	-0.19 *	0.06	-0.05	0.05
White	0.91	0.29	0.90	0.34	0.84	0.40	0.04	0.04	0.06	0.05	0.02	0.04

p<0.1 = +, p<0.05 = \*, p<0.01 = \*\*, p<0.001 = \*\*\*

## Results/Discussion

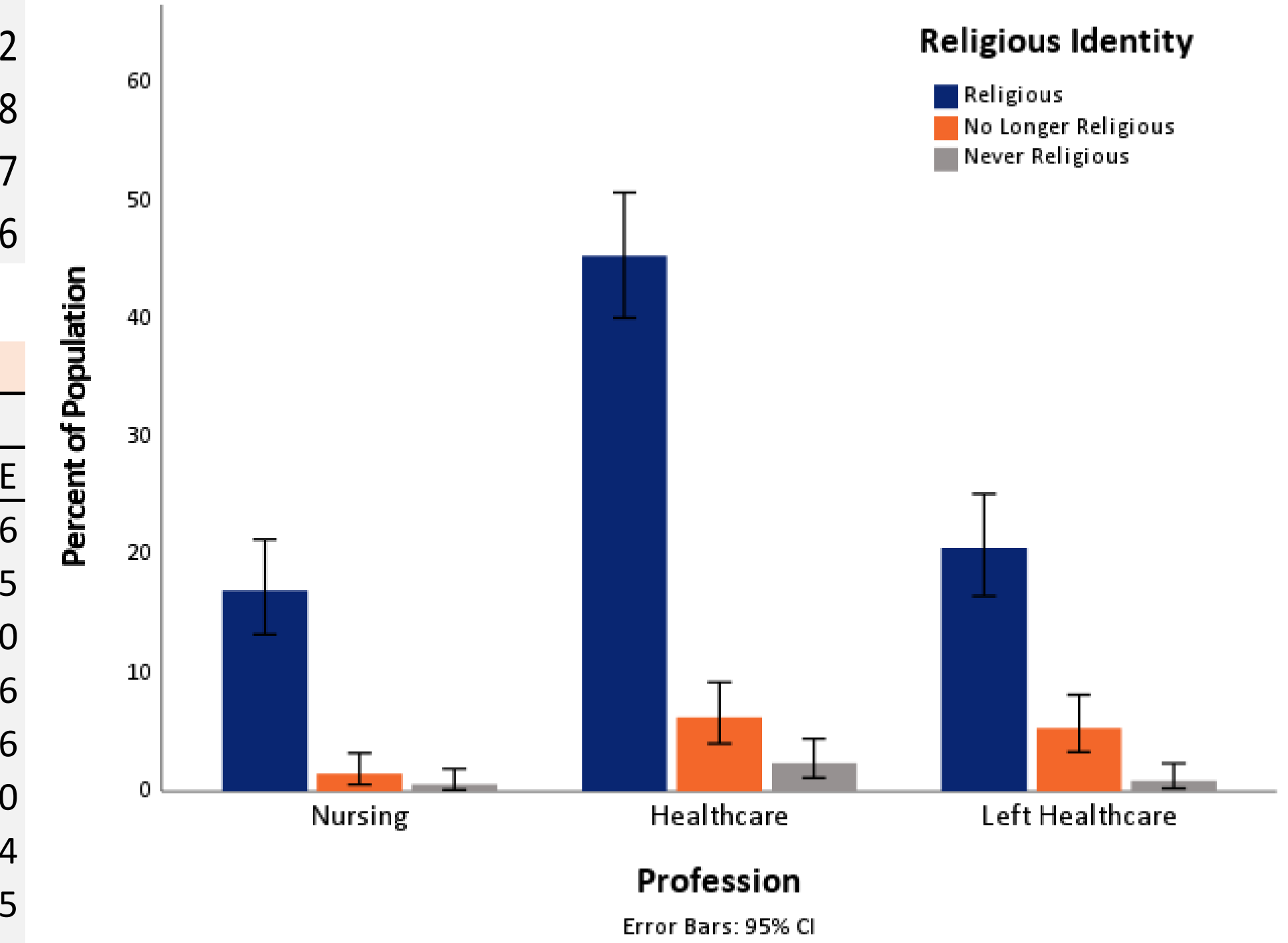
- Pre-health students and nursing students are more confident in becoming a healthcare professional already at year 1 than students who subsequently (Wave 2) left health professions. This could indicate that baseline confidence is a predictor of continuing or leaving healthcare professions.
- The mean number of hours studied is significantly different between those who stayed in health professions and those who left health professions, as well as marginally significant between nurses and those who left healthcare. Students who stayed in health professions study on average 1 hour more per day than those who left health.
- Left healthcare students are significantly more boredom-prone than pre-healthcare students. As boredom is an emotional sensation one feels with a lack of momentum in life, both longer term and moment to moment (Brissett and Snow 1993), perhaps it is connected to switching out of professions with longer term return on one's time investment.

- Compared to those who stayed in and left health professions, males are less likely to be a nursing student. This fits the gender stereotype of nursing being a female dominated profession.
- Nursing students are more likely to be first-generation college students than pre-healthcare students. This may be due to nursing being a career with job security that can be immediately pursued out of college (De Cooman et. al 2008). This may be more attractive to first generation students than the pre-health track due to the immediate entrance to the workforce.
- Nursing students are also less humble than students who remained in health professions. This finding could refine previous research showing that more religious people are more humble (Davis et al. 2017). In this pool of respondents there is a greater percentage of nursing students that are religious than pre-health students, which is an interesting finding for future research.
- Nursing students have more empathic concern on average than students who leave healthcare professions altogether. Perhaps early levels of empathic concern is related to health professions persistence, particularly nursing.

## Conclusion

Differences between pre-health, left-health, and nursing undergraduate college students do exist and were found in this exploratory project. Notable differences were baseline confidence, humility, boredom, first-generation status, and religious identity. Future research should continue to uncover and understand these differences, perhaps at more undergraduate institutions with larger, more diverse sample sizes. Some limitations to our study were the population lacking diversity in religious identity, gender, and race. Another limitation was a low sample size due to the current sample being from one institution, attrition rates over time, and missing data within responses.

**Figure 2.** Depiction of religiosity of students in each profession.



## References

- Balboni, Michael J., Julia Bandini, Christine Mitchell, Zachary D. Epstein-Peterson, Ada Amobi, Jonathan Cahill, Andrea C. Enzinger, John Peteet, and Tracy Balboni. 2015. "Religion, Spirituality, and the Hidden Curriculum: Medical Student and Faculty Reflections." *Journal of Pain and Symptom Management* 50(4):507-15.
- Brissett, Dennis, and Robert P. Snow. 1993. "Boredom: Where the Future Isn't." *Symbolic Interaction* 16(3):237-56.
- Davis, Mark H. 1983. "Measuring Individual Differences in Empathy: Evidence for a Multidimensional Approach." *Journal of Personality and Social Psychology* 44(1):113-26.
- Davis, Don E., Joshua N. Hook, Everett L. Worthington, Daryl R. Van Tongeren, Aubrey L. Gartner, and David J. Jennings. 2010. "Relational Spirituality and Forgiveness: Development of the Spiritual Humility Scale (SHS)." *Journal of Psychology and Theology* 38(2):91-100.
- Davis, Don E., Stacey McElroy, Elise Choe, Charles J. Westbrock, Carleen DeBlare, Daryl R. Van Tongeren, Joshua Hook, Steven J. Sandage, and Vanessa Placeres. 2017. "Development of the Experiences of Humility Scale." *Journal of Psychology and Theology* 45(1):3-16.
- De Cooman, Rein, Sara De Gieter, Roland Pepermans, Cindy Du Bois, Ralf Jegers, and Marc Jegers. 2008. "Freshmen in Nursing: Job Motives and Work Values of a New Generation." *Journal of Nursing Management* 16(1):56-64.
- Leary, Mark R., Kate J. Diebels, Erin K. Davison, Katrina P. Jongman-Serenio, Jennifer C. Isherwood, Kaitlin T. Raimi, Samantha A. Deffler, and Rick H. Hoyle. 2017. "Cognitive and Interpersonal Features of Intellectual Humility." *Personality and Social Psychology Bulletin* 43(6):793-813.
- Nonis, Sarah A., and Gail I. Hudson. 2010. "Performance of College Students: Impact of Study Time and Study Habits." *Journal of Education for Business* 85(4):229-38.
- Struk, Andriy A., Jonathan S. A. Carriere, J. Allan Cheyne, and James Danckert. 2017. "A Short Boredom Proneness Scale: Development and Psychometric Properties." *Assessment* 24(3):346-59.
- Van Tongeren, Daryl R., C. Nathan DeWall, Zhanzheng Chen, Chris G. Sibley, and Joseph Baibaut. 2020. "Religious Residue: Cross-Cultural Evidence That Religious Psychology and Behavior Persist Following Deidentification." *Journal of Personality and Social Psychology*.
- West, Colin P., Liselotte N. Dyrbye, Jeff A. Sloan, and Tait D. Shanafelt. 2009. "Single Item Measures of Emotional Exhaustion and Depersonalization Are Useful for Assessing Burnout in Medical Professionals." *Journal of General Internal Medicine* 24(12):1318.