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### Effects of Religion and Health on Humility in Undergraduate Pre-health and Nursing Students

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## Introduction:

Physicians who display greater humility tend to have better communication with patients and the patients tend to have better self-reported health (Ruberton et al. 2016). Humility is also related to increased social bonds and relationship building with strangers, both beneficial skills for physicians creating relationships with patients (Davis et al. 2017). Due to the benefits of humility for physicians, we are interested in the early character development of humility in undergraduate pre-health and nursing students – especially as this is a time of rapid character change and development (Clydesdale 2007).

Prior research shows that older adults with increased humility also have better self-rated health (Krause 2010). Religiosity is also related to humility in older adults, with more religious individuals also scoring higher in humility (Krause 2010). In this study we are interested in whether the same relationships are present for undergraduate pre-health and nursing students. We expect that students who display higher levels of religiosity will also display higher levels of humility. We also expect that students with better self-rated mental, physical, and overall health will display higher levels of humility.

## Methods:

- The data for this study come from a longitudinal panel study of three consecutive cohorts of undergraduate students pursuing pre-health or nursing programs at the time of entering college. Both Wave 1 and Wave 2 data have been completed by all three cohorts.
- Humility is captured at Wave 2 by an intellectual humility scale (Leary et al. 2017).
- Mental, physical, and overall health are all measured using the same ordinal scale: the number of days of which the respondent had bad health for each respective aspect of health.
- Religious coping is a 5-point Likert scale rating agreement with the statement, “I look to God for strength, support, and guidance” in coping with major life events.
- Intrinsic religiosity is an additive measure of two 5-point questions.
- Comparative religiosity is measured with a zero centered 10-point scale ranging from “They are much more religious (-5)” to “I am much more religious (5)” in comparison to their peers at Hope College.
- To account for religious residue, religious identity has three responses, for those who are currently, formerly, and never religious (Van Tongeren et al. 2021).
- There are two linear regression models selected to display the differences in religious identity. Model 1 compares religious individuals to anyone not religious at the time, whereas Model 2 compares those who have never been religious and those who are no longer religious to those who are currently religious.
- Cohorts were controlled for in the models to account for variation in measures due to COVID-19, as not all cohorts had experienced the pandemic at the time of their Wave 1 and Wave 2 measures.

## Tables:

Table 1: Humility

	Mean	N	Std. Deviation	Range
Humility	21.4407	329	4.39	6-30
Religious	0.5650	531	0.496	0-1
No Longer Religious	0.0866	531	0.282	0-1
Never Religious	0.0264	531	0.160	0-1
Mental Health W1	2.38	467	0.887	1-4
Physical Health W1	1.75	467	0.790	1-4
Overall Health W1	1.75	467	0.811	1-4

Table 2: Regression Analysis for Wave 2 Humility

	Model 1		Model 2	
	b	Std. B	b	Std. B
Constant	21.215 ***	—	19.59 ***	—
Religious W2	-1.596 +	-0.137	—	—
No Longer Religious W2	—	—	1.390	0.106
Never Religious W2	—	—	2.731 +	0.124
Church Attendance W2	-0.107	-0.059	-0.105	-0.058
Chapel Attendance W2	0.265	0.031	0.284	0.033
Bad Mental Health W1	0.971 **	0.185	0.980 **	0.187
Bad Physical Health W1	1.264 ***	0.244	1.250 ***	0.241
Bad Overall Health W1	-0.947 *	-0.163	-0.906 *	-0.156
Male	1.166 *	0.115	1.155 *	0.114
White	-2.329 **	-0.178	-2.296 **	-0.175
Intrinsic Religiosity W1	0.116	0.057	0.107	0.052
Religious Coping W1	0.186	0.053	0.211	0.060
Comparative Religiosity W1	0.115	0.061	0.116	0.062
Cohort 2	0.565	0.033	0.551	0.032
Cohort 3	-0.227	-0.013	-0.743	-0.042

## Results/Discussion:

- Higher amounts of religiosity are not related to humility as we expected. Identifying as religious has a marginal effect on humility, indicating that individuals who identify as religious are less humble compared to those who are not religious. Results of Model 2 (Table 2) show that this difference is specifically only between those who are religious and those who were never religious. This may be because the truly humble rate themselves lower on humility scales and this may be especially true for the religious who hold a higher standard for the virtue of humility (Davis et al. 2010).
- Other measures of religiosity are not statistically significant in Model 1 (Table 2).
- The lack of significance between religious and no longer religious respondents is notable (Table 2 Model 2). This may be a result of religious residue: the values present in religion are still reflected in one's character even though one no longer identifies as religious (Van Tongeren et al. 2021).

## Results/Discussion Cont.:

- Overall health relates to humility in the expected direction, with worse overall health inversely associated with greater humility. Contrary to this, worse mental and physical health are both associated with greater humility.
- The positive relationship between males and humility may be due to the fact that females view humility differently, holding humility at a higher standard than males (Priebe and Van Tongeren 2021).
- Prior work shows that the relationship between race and humility may be an indirect effect as black respondents attend church more and tend to be more religious than whites, and the more religious tend to have more humility (Krause 2015).

## Conclusions:

- Students who identify as religious have less humility than students who are not religious.
- As we expected, students with better overall health have increased humility, but contrary to this students with bad mental and physical health have higher humility.
- It was also found that gender and race affect the humility of students.

## Limitations:

- Missing data due to the nature of participant attrition rates in longitudinal studies.
- Humility data was only collected at Wave 2, so we are unable to study how humility changes over time.
- Some of the religiosity measures, such as religious coping and intrinsic religiosity are only surveyed at Wave 1.

## References:

- Clydesdale, Tim. 2007. *The First Year Out: Understanding American Teens after High School*. Chicago: University of Chicago Press.
- Davis, Don E., Stacey McElroy, Elise Choe, Charles J. Westbrook, Cirleen DeBlaere, 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.
- 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.
- Gorsuch, R. L., & McPherson, S. E. (1989). Intrinsic/extrinsic measurement: I/E-revised and single-item scales. *Journal for the Scientific Study of Religion*, 28, 348-354.
- Krause, Neal. 2015. “Assessing the Relationships among Race, Religion, Humility, and Self-Forgiveness: A Longitudinal Investigation.” *Advances in Life Course Research* 24:66–74.
- Krause, Neal. 2010. “Religious Involvement, Humility, and Self-Rated Health.” *Social Indicators Research* 98(1):23–39.
- Leary, Mark R., Kate J. Diebels, Erin K. Davison, Katrina P. Jongman-Sereno, 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.
- Priebe, Carolyn, and Daryl R. Van Tongeren. 2021. “Women Pay a Steeper Price for Arrogance: Examining Presentation Style, Gender, and Humility.” *The Journal of Positive Psychology* 1–9.
- Ruberton, Peter M., Ho P. Huynh, Tricia A. Miller, Elliott Kruse, Joseph Chancellor, and Sonja Lyubomirsky. 2016. “The Relationship between Physician Humility, Physician–Patient Communication, and Patient Health.” *Patient Education and Counseling* 99(7):1138–45.
- Van Tongeren, Daryl R., C. Nathan DeWall, Zhansheng Chen, Chris G. Sibley, Joseph Bulbulia. 2021. “Religious Residue: Cross-Cultural Evidence That Religious Psychology and Behavior Persist Following Deidentification.” *Journal of Personality and Social Psychology* 120(2):484–503.