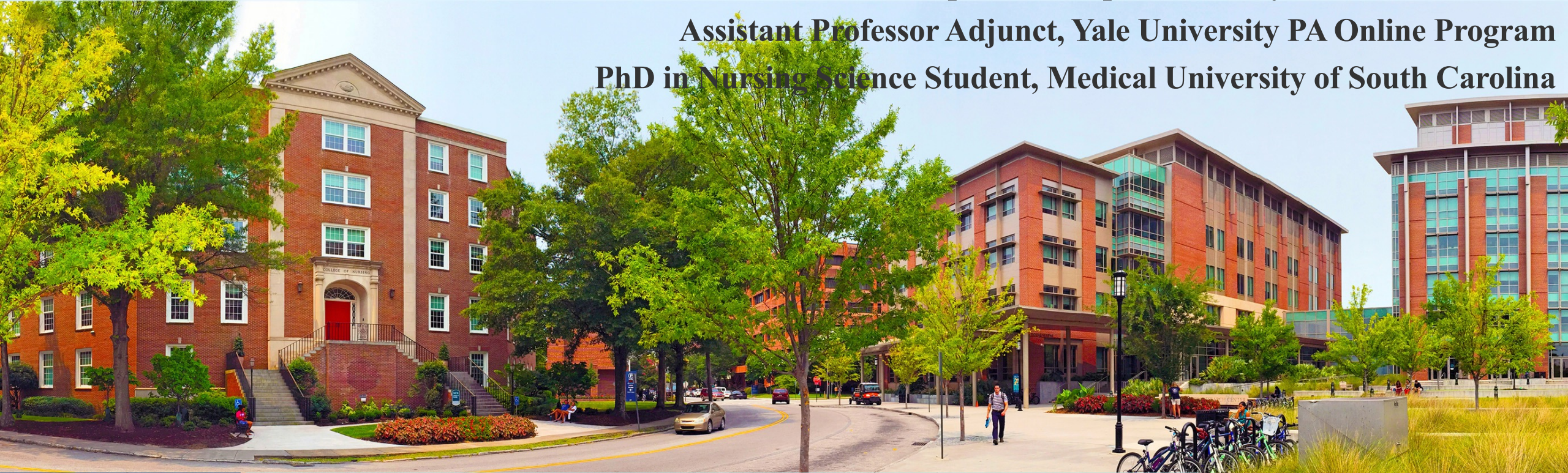


The Relationship Between Intrinsic Factors, the Social Determinants of Health, and Perceived Flourishing among Medical, Physician Assistant, and Nurse Practitioner Students

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Disclosures

I have no relevant relationships with ineligible companies to disclose within the past 24 months.

Acknowledgements:

- › The authors wish to thank Dr. Susan Newman for her support in the development of this project proposal. Additionally, the Physician Assistant Education Association (PAEA), the PAEA Grants and Scholarships Review Committee, the Don Pedersen Research Grants Program, and the PA Foundation.

Funding/Support:

- › This project was funded in part by a grant award from the Physician Assistant Education Association, Washington, DC. Funding of this project does not necessarily constitute an endorsement of the findings of this research report by the PA Education Association.
- › Additional funding was provided in part by the Yale University General Internal Medicine Educational Research Grant.
- › Additional funding was provided in part by the PA Foundation Breitman-Dorn Research Fellowship.
- › This project was also supported, in part, by the National Center for Advancing Translational Sciences of the National Institutes of Health under Grant Number UL1 TR001450. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.



Objective

Identify the relationship between:

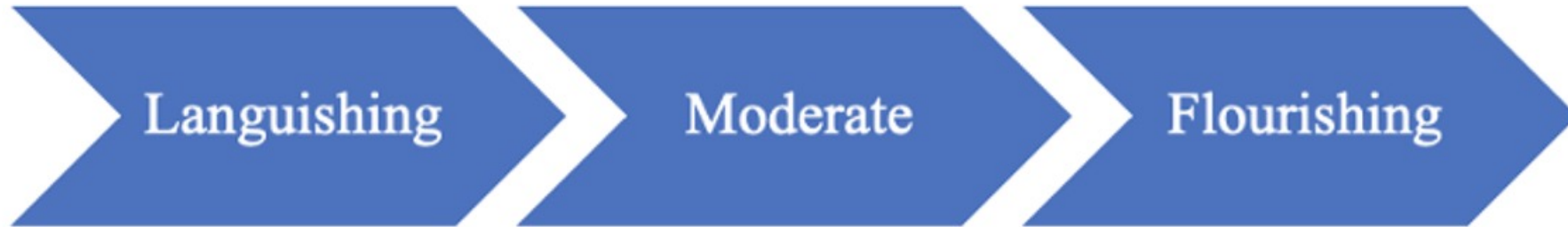
flourishing and

- demographic characteristics,
- the social determinants of health, and
- intrinsic factors [grit, coping style, religiosity]

among MD, PA, and NP students.



Background: Mental Health Continuum



- Provider burnout = public health crisis
- Student attrition ↑
- Provider turnover ↑
 - Financial burden on health care system & patients ↑
- Suicidal ideation ↑
- Medical errors & adverse patient events ↑



- Student retention ↑
- Engagement and productivity ↑



Background: General Student Well-Being

- Reported burnout rates among clinical health professions students $\geq 50\%$
- Through the pandemic, stress increased **disproportionately** in students who identify as URiM than those who do not
- ~ 50% of Black and Hispanic vs 26% of White medical students faced financial strain
- Asian (26%) and Black (14%) compared to White students (1%) experienced racism and/or bias related to COVID-19
- Limited data on current wellness efforts shows varied efficacy based on student demographic factors

Absence of ill-being \neq well-being



Conceptual Definition of Flourishing

- Conceptual underpinnings:
 - Rooted in Greek philosophy
 - Eudaimonia: Aristotle acknowledged life should have elements of both **virtue** and **pleasure**

Happiness

Thriving

Positive
psychology

Social
connectedness

Psychological
flexibility

Spirituality

Belongingness

Positive affect



Operational Definition of Flourishing: Traditional Scoring

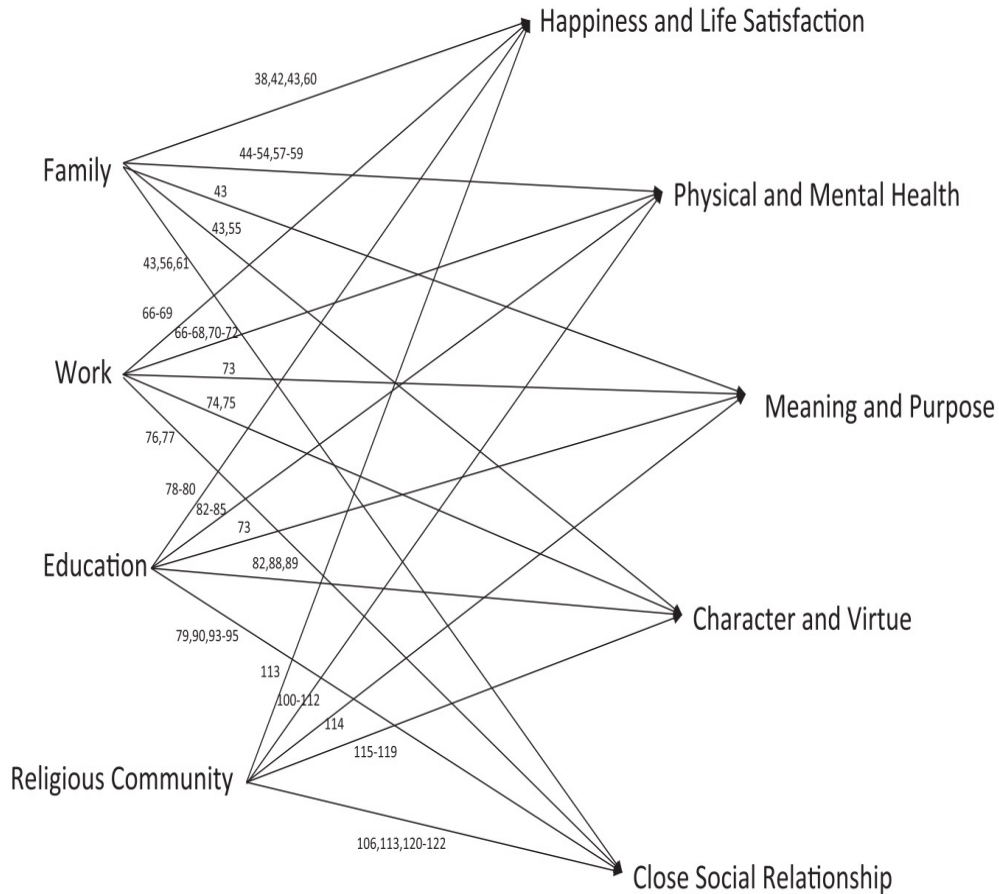


Fig. 1. Diagram relating pathways to various human flourishing outcomes (with references).

Each question is scored 0-10 then a domain average (0-10) and a total flourishing score (0-120) are calculated

1. Overall, how satisfied are you with life as a whole these days?
2. In general, how happy or unhappy do you usually feel?
3. In general, how would you rate your physical health?
4. How would you rate your overall mental health?
5. Overall, to what extent do you feel the things you do in your life are worthwhile?
6. I understand my purpose in life.
7. I always act to promote good in all circumstances, even in difficult and challenging situations.
8. I am always able to give up some happiness now for greater happiness later.
9. I am content with my friendships and relationships.
10. My relationships are as satisfying as I would want them to be.
11. How often do you worry about being able to meet normal monthly living expenses?
12. How often do you worry about safety, food, or housing?

Later added: Financial and Material Stability



Innovation: Self-Weighted Secure Flourish Index

The novel scoring approach accounts for individual values in the evaluation of flourishing

Self-Weighted Secure Flourish Index - Domain Weighting:

Below you will find a list of 6 areas of life. Please assign a percentage to each area indicating how important you believe the topic is to your ability to flourish in life. The total percentage assigned should equal 100%. Topics that you believe are more important to your flourishing should be given a higher percentage and topics that you believe are less important to your flourishing should be given a lower percentage.

1. Happiness and life satisfaction _____ %
 2. Mental and physical health _____ %
 3. Meaning and purpose _____ %
 4. Character and virtue _____ %
 5. Close social relationships _____ %
 6. Financial and material stability _____ %
- TOTAL PERCENTAGE** _____ % *(this should equal 100%)*



Study Design

Population:

- MD (and MD-PhD), NP/DNP, and PA students from the Medical University of South Carolina and Yale University
 - Excludes: residents, fellows, PhD in Nursing Science, and bachelor's level nursing students
- Sample size:
 - Population: ~1820 students enrolled across all programs
 - Survey target: 318 responses
 - 95% CI with a 5% margin of error



Survey Instruments

Instrument	Concept
Traditional Secure Flourish Index (tSFI)	Flourishing
Self-Weighted Secure Flourish Index (swSFI)	Values-based Flourishing
WellRx	Social determinants of health
2 Question Maslach Burnout Inventory (2QMBI)	Burnout
Brief COPE Inventory	Coping (emotion, problem, avoidant)
The Short Grit Scale	Grit
Duke University Religion Index (DUREL)	Religiosity and Spirituality



Analysis

Dependent Variables: tSFI and swSFI

- › Domain and total score means and standard deviations

Combination of t-test, ANOVA, and Person's correlation were used to compare independent variables to each the tSFI and the swSFI scores

Regression:

- › Independent variables for the regression were purposively selected using the outcomes of the comparison of means and correlation analyses based on a p-value $\leq .2$ to minimize the chance of a type II error
- › A traditional significance cutoff of $p < .05$ may fail to capture variables that are not statistically significant but of clinical importance
- › Can assess relationship but not causality given cross-sectional study design



Results: Demographics

Response: 280 of 1820 (15.4%)

Sample demographics:

- › Profession:
 - › PA 45.0% (n=126)
 - › MD 33.9% (n=95)
 - › NP 21.1% (n=59)
- › Mean age (n=269): 28.7 years (SD 6.5)
- › 76.7% female
- › 70.4% White or white and another race
- › 23.4% first generation college student

14.9% (41/275) of students seriously considered leaving training in the past 6 months

Top reasons for consideration:
Personal mental health: 65.9% (27/41)
Financial stress: 56.1% (23/41)



Instrument Descriptive Statistics

Instrument	n	M(SD)	Median(Q3-Q1)
Brief COPE Inventory (range 1-4)			
Avoidant	264	1.6(0.4)	1.5(1.8-1.4)
Emotion	259	2.3(0.5)	2.3(2.7-2.0)
Problem	260	2.6(0.6)	2.8(3.1-2.3)
Short-GRIT (range 1-5)	257	3.5(0.6)	3.6(4.0-3.1)
2QMBI (range 0-12)	275	5.3(3.2)	5.0(8.0-2.0)
DUREL			
Organized religiosity (range 1-6)	262	2.4(1.6)	2.0(4.0-1.0)
Nonorganized religiosity (range 1-5)	262	2.3(1.7)	1.0(4.0-1.0)
Intrinsic spirituality (range 3-15)	258	8.5(4.6)	8.0(13.0-3.0)
WellRx (range 0-11)	280	1.1(1.3)	1.0(2.0-0.0)



	n	M(SD)	median(Q3-Q1)
Traditional Secure Flourish Index	280	84.0(15.0)	86.0(95.0-73.3)
Flourishing Domains	Domain rank	Domain Score Possible Range 0-10	
Meaning and Purpose	1	7.62(1.7)	8.0(9.0-6.5)
Character and Virtue	2	7.60(1.3)	7.5(8.5-5.6)
Close Social Relationships	3	7.0(2.1)	7.5(8.5-5.6)
Happiness and Life Satisfaction	4	6.9(1.6)	7.0(8.0-6.0)
Physical and Mental Health	5	6.5(1.7)	7.0(8.0-5.5)
Financial and Material Stability	6	6.3(2.7)	6.5(8.9-4.5)
Self-weighted SFI	280	83.9(16.3)	86.7(96.3-73.8)
Flourishing Domains	Domain rank	Domain Weight Possible Range 0-100%	
Physical and Mental Health	1	20.2(8.4)	20.0(20.0-15.0)
Happiness and Life Satisfaction	2	20.0(9.0)	20.0(20.0-15.0)
Close Social Relationships	3	16.0(7.5)	15.0(20.0-10.0)
Meaning and Purpose	4	15.9(8.3)	15.0(20.0-10.0)
Financial and Material Stability	5	14.7(8.6)	14.0(20.0-10.0)
Character and Virtue	6	13.1(6.5)	12.0(16.0-10.0)

Traditional Secure Flourish Index Total and Domain Scores and Self-Weighted Secure Flourish Index Total and Domain Percentage Weights



Correlation

tSFI scores were **higher** with higher grit ($r=.37, p<.001$)

tSFI scores were **lower** with:

- › Higher social needs ($r = -.34, p<.001$)
- › Higher avoidant coping style ($r = -.45, p<.001$)
- › Higher burnout ($r = - .47, p<.001$)



Comparison of Means and Regression

tSFI scores were about 10 points lower for students who had considered leaving training in the past 6 months compared to those who had not ($p < .001$)

- › Yes: $M=75.3$, $SD=16.2$
- › No: $M=85.6$, $SD=14.4$

No significant difference found in scores between professions (PA, MD, NP), race (White/BIPOC), gender (man/woman), or first-generation status (yes/no)

Regression: [$R^2=.53$, $R^2_{adj}=.50$, $F(15, 221) = 16.8$, $p < .001$]

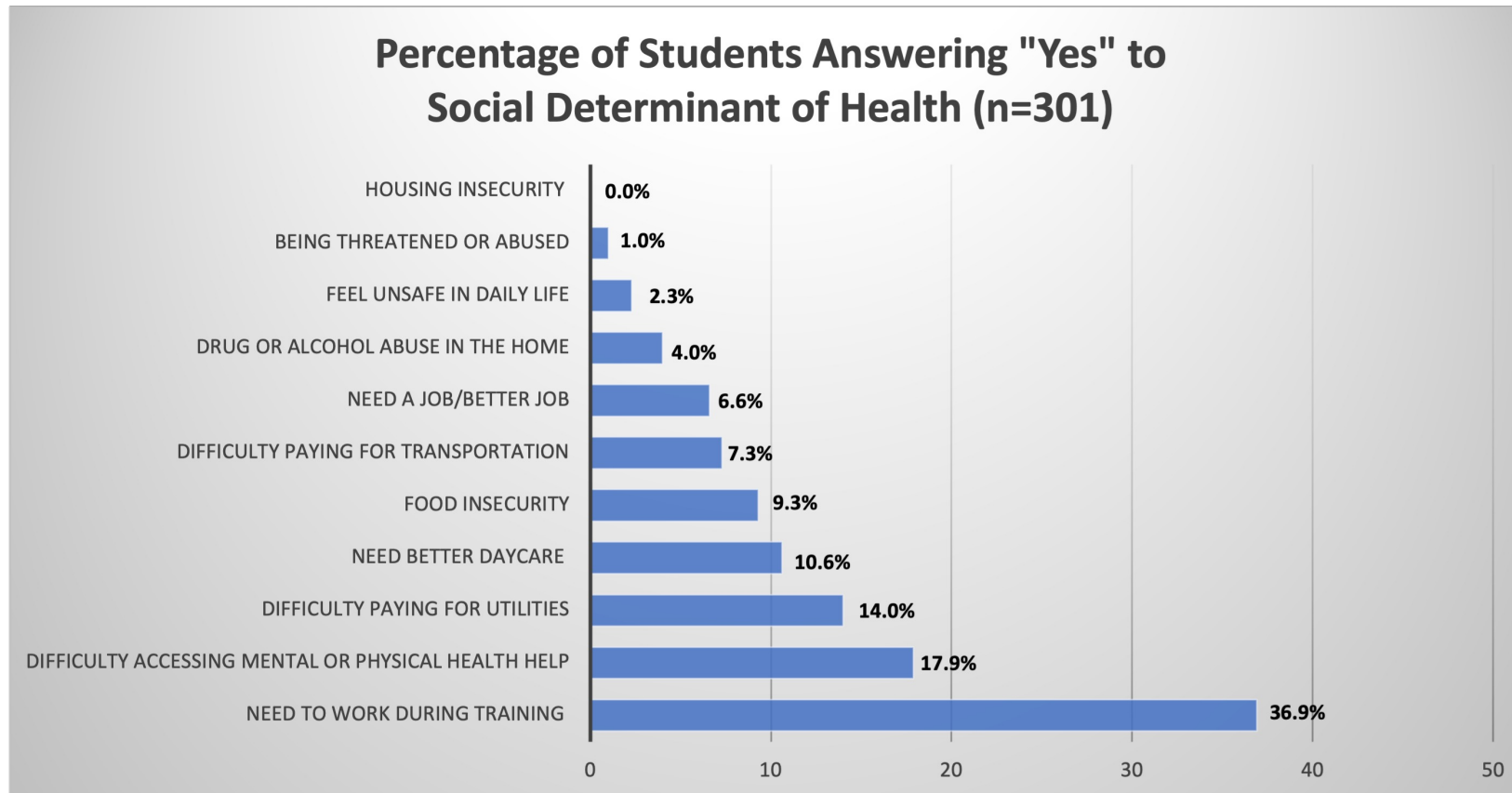
- › $tSFI = 80.0 - 14.4(\text{COPE avoidant score}) + 5.1(\text{Dropout Not Considered: Yes/No}) + 4.1(\text{GRIT score}) - 2.7(\text{WellRx Score}) - 1.7(2\text{QMBI score}) + 0.1(\% \text{Education paid by student loans})$



The Social Determinants of Health and Flourishing

The data were reassessed using cases with complete SFI and WellRx responses

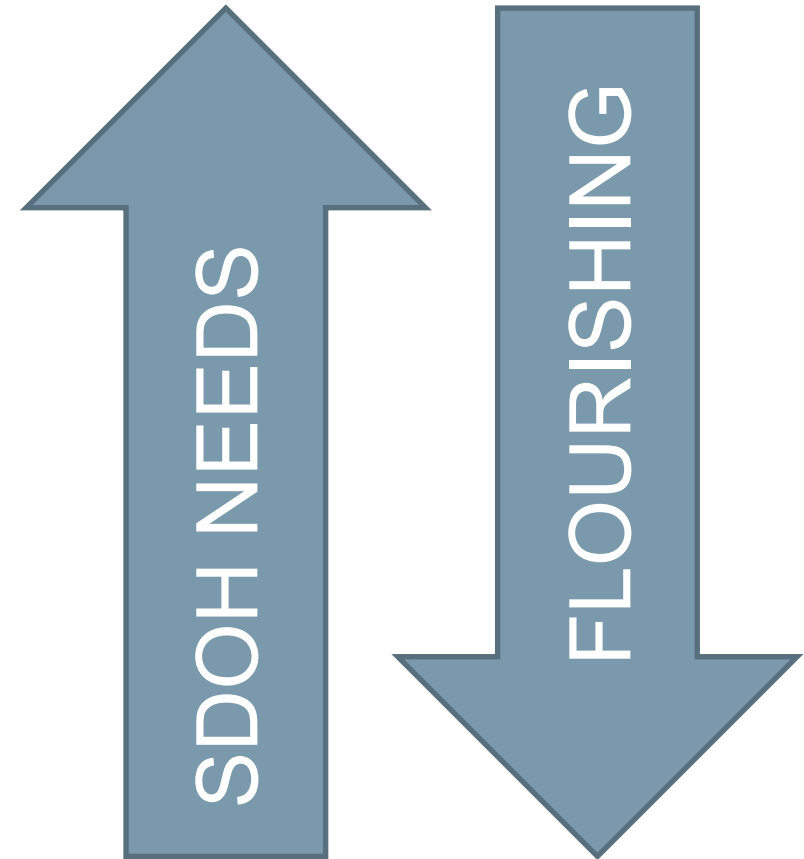
- › Results in 301 cases; WellRx Mean(SD): 1.1 (1.2)



The Social Determinants of Health and Flourishing

Students were divided into three SDOH risk groups. Flourishing varied significantly by group ($p < .001$)

- Group 1 No/Low Risk: WellRx score of 0 (39.2%; $n=118$)
 - tSFI score M(SD): 88.2(14.0)
- Group 2 Moderate Risk: WellRx score 1-2 (49.8%; $n=150$)
 - tSFI score M(SD): 83.4(14.7)
- Group 3 High Risk: WellRx score 3+ (10.9%; $n=33$)
 - tSFI score MS(SD): 72.7(13.5)



The Social Determinants of Health and Flourishing

Key findings:

- **80% of students who considered dropping out in the past 6 months are moderate (57.8%) or high (22.2%) risk compared to 58.6% of those who did not (p<.001)**
- 85.6% of NP students are moderate to high risk compared to 57.3% of PA and 50.0% of MD students (p<.001)
- Domain specific score of financial and materials stability decreased from a mean of 7.1/10 in the low-risk group to 3.9/10 in the high-risk group
- No significant difference in SDOH risk group found by race (White/BIPOC), gender (man/woman), or first-generation status (yes/no)
 - Need to consider impact of structural racism and access to higher education in the future



Discussion: Key Takeaways

- There are multiple intrinsic and extrinsic factors that are correlated to student flourishing
- Understanding individual values in relation to flourishing can help promote more personalized wellness efforts
- Teaching foundational skills of reducing avoidant coping techniques and building grit many promote flourishing
- Many students have unmet social and economic needs that are related to their ability to flourish
- **Improving flourishing may improve retention**
- Future studies assessing directionality of these relationships are needed



Key References

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