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Danielle Z. Shojaie Date 4/21/2017

Flourishing at Emory University is Associated with a Student's Academic Program

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Master of Public Health

Epidemiology

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An abstract of

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Abstract

Flourishing at Emory University is Associated with a Student's Academic Program

By Danielle Z. Shojaie

Objectives: This study aims to understand the relationship between a student's status as an undergraduate or graduate and their mental health as measured by flourishing, a combination of emotional, psychological, and social well-being.

Methods: Assessment data consisting of the Mental Health Continuum—Short Form (MHC-SF) and a demographic questionnaire for 273 Emory University students was collected by the Emory's Office of Health Promotion and de-identified for this cross-sectional study.

Results: Logistic regression was used to demonstrate that graduate students are more than 1.5x as likely as undergraduate students to be flourishing (OR = 1.86, 95% CI 1.10, 3.15). Two significant logistic regression models were developed to show the relationship between an individual's school status and their flourishing status: 1) includes the potential confounders: race, gender, sexual orientation, financial status, and international student status; 2) is a parsimonious model that includes only the exposure of school status. Consistent with prior research, there were significant differences between the graduate students and the undergraduate students in terms of race ($p = .03$) and financial status ($p < .0001$). Age was considered a potential confounder in the *a priori* criteria, but it was determined to be collinear with school status and, thus, excluded from the model.

Conclusions: This study shows that an association exists between whether or not an individual is flourishing and his/her school status. These findings may be representative of the relationship between school status and age, as age is known to affect flourishing, rather than school status serving as a proxy for educational attainment. Future research should use this study as a guide to expand the research toward looking at individual schools to see if this association is consistent. The results also allow for the development and implementation of more targeted programs like Flourish Emory, which can be evaluated for effects on individual flourishing status.

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Chapter I. Background Information and Literature Review

The Concept of Mental Health

The diagnosis of a mental illness occurs when a set of symptoms are present at a certain level for a specific period of time[1]. In contrast, the WHO defines mental health[2] as more than just the absence of mental illness, but rather as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community."

Operationalizing this definition for the purpose of evaluation results in considering the combination of positive feelings (emotional well-being) and functioning well (psychological and social well-being)[1]. These areas of well-being are derived from the hedonic and eudaimonic approaches to well-being from Greek philosophers Aristippus and Aristotle. The hedonic aspect focuses on pleasure, happiness, and the absence of pain[3]. In contrast, the eudaimonic aspect suggests the importance of purpose and realizing potential for well-being, forming the psychological and social pillars of well-being[3].

Today, hedonism is incorporated into emotional well-being in terms of happiness and life satisfaction[1,4,5]. Psychological well-being is measured in terms of self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy[1]. Keyes developed five dimensions on which to measure social well-being to form an overall picture of an individual's function[1,4]. These are: acceptance of others, belief in society's capability to progress, a sense of belonging and usefulness

within society, feelings of connectedness and interest, and a sense of meaning from one's social life and society overall[1,4].

An individual who happens to have both high positive feelings and high function is said to be "flourishing", whereas an individual with low positive feelings and low function is deemed "languishing"[6], as relates to their mental health (see Figure 1). To have optimal mental health, one is both flourishing and without a mental illness[6]. The close relationship between mental health and mental illness has shown that individuals who are languishing are more likely to be diagnosed with a mental illness, and even those who are moderately mentally healthy are at higher risk of mental illness than those who are flourishing[1].

Current Mental Health Research

Since the determination that mental illness is the leading cause of years lived with disability globally[7], there has been increased emphasis on decreasing mental illness and improving mental health. Conceptualizing mental health with its own criteria, rather than defining it as the opposite of mental illness, has led to of research trying to determine the best ways to measure mental health[1,3,4]. In recent years, flourishing as conceptualized by Corey Keyes has been the standard[4,5].

With established methods of evaluation, much of existing research about mental health as separate from mental illness has been designed to identify the prevalence of flourishing in various nations[1,3,5,6].. These include the United States (17.2%, of those in midlife)[1], New Zealand (39%)[5], and the Netherlands (36.5%)[5]. These studies also conducted comparisons to the prevalence values found in other nations, often using the United States as the standard for comparison[1,3,5,6].

Upon identifying who is flourishing, the research surrounding flourishing has centered on identifying factors that suggest why certain individuals are flourishing[1,5]. Because flourishing is still a relatively new area of study, most of the current work is concentrated in this area, often observing different populations like: individuals recovering from addiction[8], adolescents[9], or college students[4].

College versus Graduate Education

Undergraduate education and graduate education are marked by a few unique characteristics. To start, about 60% of undergraduates are between the ages of 18 and 24 years old[10]. Graduate students, in contrast, are an average age of 33 years old[11].These age differences are also important when it comes to development, as current evidence suggests that brain development and maturation continues to approximately 26 years old[12]. Beyond neurodevelopment, psychosocial maturation is likely to have already progressed and more likely to have already established certain behaviors at an increased age, which is seen in graduate school[12]. Also, meaningful financial differences exist between undergraduate and graduate students. They have different access to financial aid[13]. A significant indicator for whether or not someone actually continues on to graduate school is wealth, where more wealth has a positive correlation with not only attending but completing graduate school[14]. Social integration as an undergrad including participating in research can impact whether or not one continues onto graduate school[15]; this result differentiates by race[15]. These psychosocial and demographic differences between undergraduates and graduates suggest that school status could be associated with flourishing for an individual.

Covariates in this Study

Many of the covariates of interest were established based on previous data. For example, being female has been positively associated with both emotional[5] and psychological[5] well-being. Also, with a growing gender gap in enrollment at both the undergraduate and graduate levels favoring females[14], gender identity was of interest as a covariate. Gender identity was expanded beyond the traditional binary in this study to potentially capture a more nuanced relationship between flourishing and gender that was not captured by older studies. International student status was considered a possible confounder since variation has been found in national prevalence of flourishing[1,3,5,6]. It was also included since social well-being includes a sense of connectedness, which may be less likely in international students depending on their school status. Income (national, household, and personal) has been positively associated with flourishing[5]; evidence also indicates that wealthier individuals are more likely to go to grad school[14]. For these reasons, financial status (approximated by school payment method) was included as a potential confounder. Some evidence exists suggesting greater resiliency in non-white individuals and their ability to flourish in the face of discrimination[16]. Race may also play a role in the likelihood of one attending graduate school[14], which makes race an interesting covariate. Additionally, while data regarding sexual orientation are less available[17], this variable was considered as a potential confounder because of how discrimination could affect factors related to flourishing and opportunities that impede one's ability to pursue higher education.

Flourish Emory

Flourish Emory is a series of programming efforts offered by Campus Life and the Office of Health Promotion at Emory University to encourage flourishing[18]. These include The Good Life Lecture Series and the Happiness Boot Camps programs. The Good Life Lectures aim to begin a 'meaningful exchange' of what makes a good life, focusing on Socratic eudaimonic concepts[18], and the Happiness Boot Camps are three month training programs that promote behaviors that encourage flourishing[18]. Since several of the programs that fall under the Flourish Emory curricula are specifically marketed toward undergraduates, this could mean that participation in these programs is a an effect of your school status; thus, whether one is flourishing may be modified by participation in one of these programs. Program participation of the participants in this study are included in Appendix B.

Public Health Implications and Purpose of Study

With universities becoming increasingly burdened by a greater prevalence of mental illness and more severe mental illnesses[4], mental health in college students becomes an increasingly important priority of universities. Students struggling with mental illness are more likely to fall behind academically[4]. While a direct inverse relationship does not exist between mental health (as defined in terms of flourishing) and mental illness, individuals who flourish are less likely to have a mental illness than those who are moderately mentally well, who show a modest difference in mental illness diagnoses from those who are languishing[1]. If certain individuals are less likely to flourish, then this study can provide insight into which students to target with programs that showcase techniques to promote flourishing or increase community support for

students[4]. This increase in flourishing is fundamental to trying to improve overall mental health and well-being as defined by WHO, which would help universities in their renewed emphasis upon improving mental health. The need for flourishing only increases with knowing that individuals who flourish also have better physical health outcomes than those who do not[19]. A healthier student body is one that can be more engaged both academically and within the university community.

Previous research assessing college students has identified a supportive college environment as important to mental health[4]. This study aims to begin identifying where the greatest need for a supportive environment at a university exists, based on flourishing. It compares undergraduate and graduate students within a single university, using their school status (undergraduate vs graduate). This approach is a more granular examination of what factors are associated with flourishing, with the intention to promote intervention development with the results (see Figure 2).

With this study, the university has the opportunity to determine if one group is more likely to flourish. From there, they can continue evaluation, likely designing interventions to target the group less likely to flourish. Also because of the covariates included in the study, an examination of these factors that may make some students more or less likely to flourish can allow the design of interventions to target those less likely to flourish. For example, Emory University's Flourish Emory may be able to design programs that are better suited to some of the students who are less likely to flourish. Alternatively, they may preferentially target students with risk markers in an effort to reach those who are likely to need the support the most.

Chapter II. Manuscript

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Introduction

Since mental illness is the leading cause of disability in the world[7], society has put increasing emphasis on mental health. While closely related, the relationship between mental health and mental illness is more complicated than simply that the absence of one indicates the presence of the other. Both occur when an individual experiences a set of symptoms for a certain period of time[1].

Mental health is defined in terms of the hedonic and the eudaimonic forming three pillars: emotional well-being, psychological well-being, and physical well-being[1]. Emotional well-being is frequently described in subjective terms of happiness and life satisfaction[1,4,5]. Psychological well-being is described in terms of self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy[1]. Social well-being, as proposed by Keyes[4], incorporates five dimensions: acceptance of others, belief in society's capability to progress, a sense of belonging and usefulness within society, feelings of connectedness and interest, and a sense of meaning from one's social life and society overall[1,4]. An individual who is experiencing this combination of emotional, psychological, and social well-being is said to be

"flourishing", meaning that they are experience both high positive feelings and high positive functioning. An individual experiencing low positive feelings and low positive functioning is considered to be "languishing"[6]. Optimal mental health occurs when one is both flourishing and without mental illness[6].

Flourishing individuals are at much lower risk of mental illness compared to both those who are languishing and those who are moderately mentally well. The converse is also true; individuals who are languishing have a higher risk of mental illness than either the moderately mentally well or the flourishers[1]. Flourishers not only have better mental health but also better physical health outcomes as well compared to non-flourishers[19].

Since flourishing is such an important part of health, researchers have been investigating what makes an individual flourish[1,5]. The positive relationships between both subjective and psychological well-being and being female, having a higher national and personal income, higher education, living with a partner, and paid employment have all been well documented[5]. Social well-being, also, has been shown to have a strong relationship higher educational attainment, household income, and employment status[5]. This study further explores factors associated with flourishing. The research question addressed is: Is school status (undergraduate vs. graduate) associated with flourishing when controlling for race, gender, sexual orientation, age, international student status, and how students pay for school?

A university serves as an opportune place to evaluate flourishing because it provides a place well-suited to promoting flourishing. This is due to the psychological[12] and physiological[12] development that is occurring during young adulthood, which makes young adulthood a critical time to develop or change behaviors[12]. A university also serves

as a logical entry point since young adults throughout history serve as agents of change in society[12], which means that values and behaviors instilled at this stage can then be shared with others.

Methods

Study Population

The analyzed sample consisted of de-identified cross-sectional data from 273 Emory University students enrolled during the 2017 spring semester that was collected by the Office of Health Promotion at Emory University. An assessment was sent to the 16,082 students on the Office of Health and Promotion's email list. The assessment was distributed a second time by the Oxford College, Nell Hodgson Woodruff School of Nursing, Rollins School of Public Health, and School of Law, with 864 students, 593 students, 1,129 students, and 1,101 students respectively. The other schools within the University chose not to re-distribute the assessment. Due to the passive method of data collection, only 299 students responded to the assessment. Of the 299 students who responded to the assessment, the investigator excluded 26 of the assessments because they were incomplete.

Measures

The distributed assessment included the Mental Health Continuum-Short Form (MHC-SF)[20] and a demographics questionnaire. These instruments are included in Appendix A.

School Status. An individual's status as either an undergraduate or graduate student was included in the demographics questionnaire. Participants were asked to select all of the schools in which they are enrolled from a list that included all of the schools

within Emory University. For the Goizueta Business School and the Nell Hodgson School of Nursing, separate options were provided for undergraduate and graduate programs. For analysis purposes, these responses were collapsed, as appropriate, to correspond with school status represented as a bivariate variable, undergraduate or graduate. School status serves as a proxy variable for educational attainment of students.

Flourishing. The MHC-SF is a validated instrument consisting of 14 items used to measure mental health in terms of flourishing and languishing. Three hedonic items represent emotional well-being in the instrument; six items representing the dimensions of psychological well-being are included, and five items represent the dimensions of social well-being for a total of 11 eudaimonic items[20]. Flourishing is indicated when an individual experiences 'every day' or 'almost every day' at least one of the hedonic items and at least six of the eudaimonic items during the past month. In contrast, languishing occurs when an individual 'never' or 'once or twice' experiences at least one of the hedonic items and at least six of the eudaimonic items during the past month. If one is neither flourishing nor languishing as determined by the assessment, they are deemed moderately mentally healthy[20].

Demographics. The demographics questionnaire used the National College Health Assessment (NCHA) questions for race, gender, and sexual orientation. Race, gender, and sexual orientation were categorical variables; the referent groups were as follows white, female, and heterosexual. Other variables collected in the demographics as potential confounders were created specifically for this assessment. They included age, international student status, and how students pay for school. This last variable was to

serve as a proxy for financial status. Age was captured as a continuous variable, while financial status was categorical. International student status was a dichotomous variable.

Based on previous literature, these variables were chosen as factors to consider as potential confounders. In the literature, they have been cited in regards to flourishing. They also are factors that may affect whether or not one chooses to pursue post-undergraduate education.

Other variables that were collected included Flourish Emory participation and mental illness diagnosis. The former was captured categorically based on which programs they had participated in, not participated in, or had never heard of the program; it was then collapsed into a bivariate of whether or not an individual had participated for the analysis. Data was also collected on whether or not individuals had been diagnosed with a mental illness using a bivariate response of yes or no; the inclusion of this variable was due to the close relationship between mental health and mental illness.

Statistical Analysis

The association between school status and flourishing was evaluated using logistic regression analysis by a fully adjusted model that included all potential confounders (race, gender, sexual orientation, financial status, and international student status) according to *a priori* criteria. Using backwards elimination, a logistic regression model only including the statistically significant exposure of school status was created. The logistic model was chosen because of the bivariate outcome of interest: flourishing or not. Results from logistic regression analyses were presented as models, odds ratios, 95% confidence intervals, and p-values.

Additionally, tests of homogeneity were performed to observe any statistical differences between undergraduate students and graduate students in relation to the covariates. This information was presented as p-values. Significance tests were used to examine the relationship between school status and age and between flourishing and mental illness diagnosis; associations were determined by correlations. The association of school status and flourishing status was stratified by all the covariates included in the final model as potential confounders, as well as mental illness diagnosis and Flourish Emory program participation, to determine interaction.

All statistical analyses were performed using SAS, version 9.4, software.

Results

The 95 (34.8%) undergraduate students and 178 (65.2%) graduate students in the study were not significantly different in terms of gender identity, sexual orientation, international student status, Flourish Emory participation, and mental illness diagnosis (Table 1). The grouping of the participants by school status did vary significantly in regards to race (p-value = .03) with more graduate students self-reporting black or white race, and more undergraduates self-reporting other races. Financial status as approximated by their payment plan also differed (p-value < .0001), with the greatest proportion of graduate student using loans, and the greatest proportion of undergraduates being on scholarship or having someone pay out of pocket.

The mean age of the sample was 26.5 ± 8 years with graduate students having a mean age of 29.5 ± 8 years and undergraduate students having a mean age of 20.9 ± 4 years. Age, while originally considered as a possible confounder, was found to be collinear with school status when collinearity diagnostics for nonlinear models was used for evaluation. Age and school status both had condition indices and VDP values greater than 0.5. When age was dropped from the model, school status no longer had these high values. Additionally, age was highly associated with a student's school status (r^2 = 0.69, p-value < 0.0001).

Because of the close relationship between mental health and mental illness, significance testing was used to test whether a significant relationship existed between a mental illness diagnosis and whether or not an individual was flourishing; the results were non-significant ($\chi^2_{df=1} = 3.3462$, p-value = .07) (Table 2). The correlation was measured using the phi coefficient (-0.11). Non-significance ($\chi^2_{df=2} = 3.9795$, p-value =

.14), was also found when mental health was tested for association with mental illness using the ordinal mental health scale of flourishing, moderately mentally well, and languishing. The association as measured using the phi coefficient was 0.12.

Stratification was used to determine that no interaction occurred in this study; all covariates of interest were considered, as well as the variables for mental illness diagnosis and Flourish Emory program participation.

Association between School Status and Flourishing

Of the 95 undergraduate students who completed the assessment, 34 (35.8%) were deemed to be flourishing. In contrast, 96 (53.9%) of the 178 graduate students were deemed to be flourishing. Graduate students had just greater than 1.5x the odds of flourishing when compared to undergraduate students (OR = 1.86, 95% CI 1.10, 3.15) (Table 3) when adjusted for potential confounding by race, gender, sexual orientation, financial status, and international student status.

Models for Flourishing

Two statistically significant logistic models were developed to show flourishing in Emory students (Table 4). One is a fully adjusted model accounting for the measured possible confounders of race, gender, sexual orientation, financial status, and international student status. None of the covariates were found to be significant in this model. Thus, the model was reduced to a parsimonious model including only the exposure of interest, school status. This served to strengthen the association between school status and flourishing (OR = 2.10 95% CI 1.26, 3.51).

Discussion

The sample of undergraduate and graduate students included in this study were not meaningfully different in terms of gender identity, sexual orientation, international student status, Flourish Emory program participation, and mental illness diagnosis. However, they did vary significantly by race, which is concordant with literature where graduate school attendance varies by race[14]. They also varied significantly in payment method, which served as a proxy for financial status. As graduate school attendance increases with increased wealth[14], it seems likely that financial status for graduate students and undergraduate students is different. Another possibility is that financial aid packages for undergraduate and graduate students are different[13], which could result in differential payment but maybe not financial status.

This study investigated the relationship of an individual's school status to whether or not they were flourishing. With approximately 54% of graduate students deemed flourishing and 36% of undergraduates, the analysis showed that graduate students have more than 1.5 times the odds of flourishing as undergraduate students. Because of the collinearity between school status and age, age could not be controlled in the analyses. Thus, it may be that the association is representative of the association of age and flourishing with school status serving as a proxy. Increased age has been associated with flourishing[1,5]. At the same time, educational attainment has been found to be associated with social well-being[5], which is one aspect of flourishing. In addition, social integration has been linked to graduate school attendance[15], and Keyes[1,4] has identified a sense of acceptance as part of social well-being.

This study further confirmed that mental health and mental illness are not just the inverse of each other, which is consistent with current literature[1]. The relationship between mental illness diagnoses and flourishing were non-significant, with weak associations when flourishing status was measured either as a dichotomy or categorized ordinally as flourishing, moderately mentally well, and languishing. This result underlines the importance of promoting mental health and not simply decreasing mental illness. This is especially vital when flourishing has been associated with both better mental health outcomes[19] and better physical outcomes, as well[19].

Strengths and Limitations

A strength of this study is that the collected data were measured with validated scale and items that were easily used in analysis. Each of the covariates considered were based on the literature and measured in the same assessment. Another strength of this study was the choice of a dependent variable (school status) that provides a point of entry for intervention. Examining school status as a subset of the university and a proxy for educational attainment allows the university to identify the group with the greatest need for intervention to increase mental health and encourage flourishing. This will allow for a more targeted intervention.

On the other hand, this study is not without its limitations. A primary limitation is the cross-sectional method of data collection. As a result of this design, we cannot determine whether graduate students are more likely to be flourishing, or whether those who flourish are more likely to be in graduate school. In addition, the passive collection method for the assessment may have led to selection bias, since individuals volunteered to participate. Perhaps graduate students who felt mentally healthy were more likely to

participate in the study than those with poor mental health. This may have weakened the validity of the association found in this study. Also, due to the small sample size, the results are not very robust and could change with an increase in response rate. Another potential limitation was that the study question about mental illness diagnosis was asking about medical diagnoses, so some individuals with an undiagnosed mental illness may have been misclassified, or those diagnosed by a non-medical mental health provider may not have responded positively. As always with self-reported data[21], concerns exist regarding response bias, where individuals may be either inaccurate or untruthful in responding to the assessment questions.

Being cognizant of these shortcomings will allow future investigators to benefit from the results of this study. They can thus think critically about the failings in design and improve upon them for future research, expanding on the work already done.

Future Directions

Using this study as a guide, several opportunities for further research arise. The first would be to expand this study and re-confirm the results. A more granular breakdown of school status to the actual programs within the university would allow even more specific targeting of those in need. Expanding this study longitudinally, measuring students' flourishing status multiple times throughout their academic career at the university, would be another valuable step, allowing university personnel to determine the most important times for intervention. Eventually the aim would be to make this research more generalizable by repeating the procedure at multiple universities with varied populations, with the final goal being the testing of interventions aimed at

increasing flourishing by targeting students most at risk of not flourishing during their university years.

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Table 1. Characteristics of Emory University Participants

Characteristics	**Total (N=273)** *Count (%)*	**Undergraduate Students** *Count (%)*	**Graduate Students** *Count (%)*	**P-value**
School				
Undergraduate	95 (34.8)			
Graduate	178 (65.2)			
Race				.03
White	158 (58.7)	51 (54.3)	107 (61.1)	
Black	32 (11.9)	7 (7.5)	25 (14.3)	
Other	79 (29.4)	36 (38.3)	43 (24.6)	
Gender Identity				.40
Women	210 (77.2)	74 (78.7)	136 (76.4)	
Men	59 (21.7)	18 (19.2)	41 (23.0)	
Other Identity	3 (1.1)	2 (2.1)	1 (.4)	
Sexual Orientation				.11
Straight/Heterosexual	230 (84.9)	76 (80.9)	154 (87.0)	
Bisexual	14 (5.2)	9 (9.6)	5 (2.8)	
Gay or Lesbian	8 (3.0)	2 (2.1)	6 (3.4)	
Another Sexual Orientation	19 (7.0)	7 (7.5)	12 (6.8)	
International Student Status				.53
No	247 (91.1)	7 (7.4)	17 (9.7)	
Yes	24 (8.9)	88 (92.6)	159 (90.3)	
Flourish Emory Participation				.45
No	250 (95.8)	86 (94.5)	164 (96.5)	
Yes	11 (4.2)	5 (5.5)	6 (3.5)	
Payment Plan				< .0001
Someone is paying out of pocket (ie parents or spouse)	71 (26.0)	36 (37.9)	35 (19.7)	
Mostly Loans	85 (31.1)	11 (11.6)	74 (41.6)	
Mostly Scholarships	87 (31.9)	39 (41.1)	48 (27.0))	
Other	30 (11.0)	9 (9.5)	21 (11.8)	
Mental Illness Diagnosis				.08
No	195 (71.7)	62 (65.3)	133 (75.1)	
Yes	77 (28.3)	33 (34.7)	44 (24.9)	

Table 2. Participants categorized by Flourishing Status and Mental Illness Diagnosis

	Mental Illness Diagnosis *Count (%)*	**No Diagnosis** *Count (%)*
Flourishing	30 (39.0)	100 (51.3)
Not Flourishing	47 (61.0)	95 (48.7)

$\chi^2_{df=1} = 3.3462$, p-value = .07, phi coefficient = -0.11

Table 3 Odds Ratio for the Risk of Flourishing relating to a Student's School Status

School Status	**Total**	**Flourishing**	**Adjusted* OR**	**95% CI**	**P-value**
	Count (%)	*Count (%)*			
Undergraduate Students	95 (34.8)	34 (35.8)	Referent		
Graduate Students	178 (65.2)	96 (53.9)	1.86	(1.10, 3.15)	.02

*The odds ratio has been adjusted for potential confounding by race, gender, sexual orientation, financial status, and international student status.

Table 4. Models for Flourishing in Emory Students

	Model 1* Betas	**Model 2** Betas**
Intercept	1.4210	-.5680
School Status	.6192	.7077
Race	-.0924	
Gender	-.2374	
Sexual Orientation	.0317	
Financial Status	.0472	
International Student Status	-.9107	
P-value	.04	.0066

*includes potential confounders based on a priori criteria

**selected using backwards elimination, only has significant variables

Figure 1. A Visual Representation of the Relationship between Mental Health and Mental Illness[22]

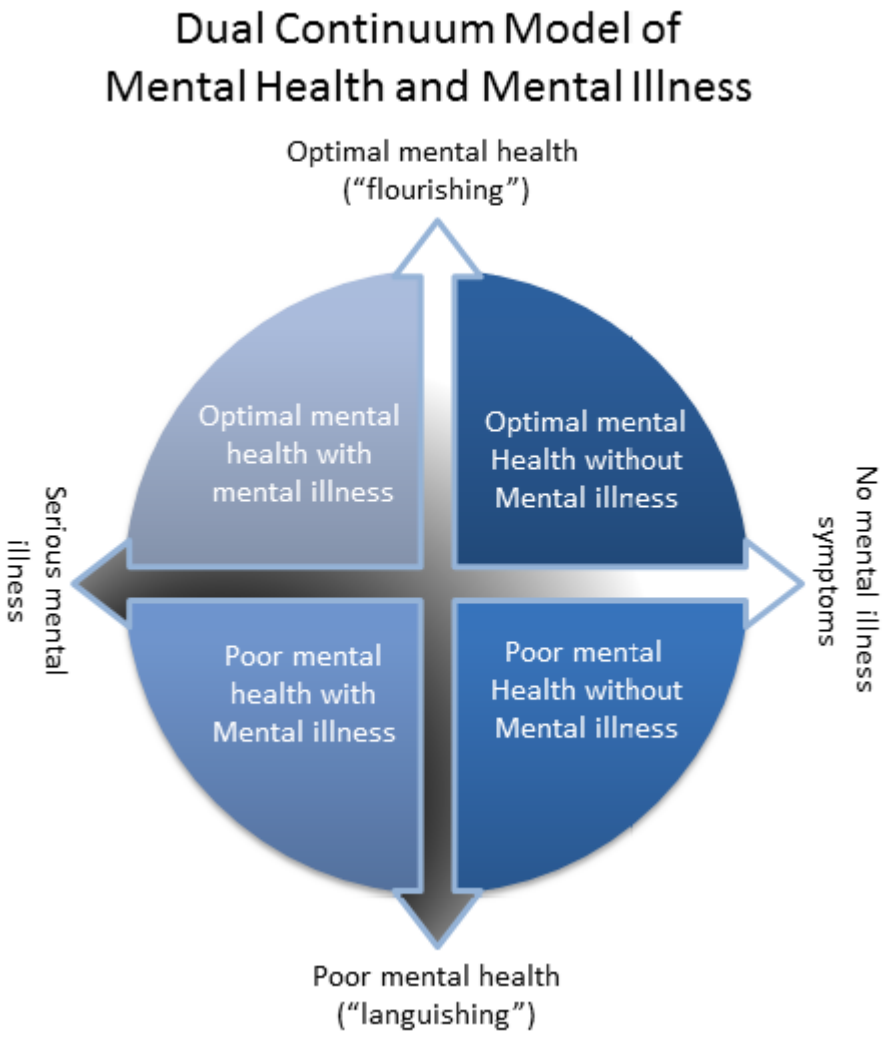
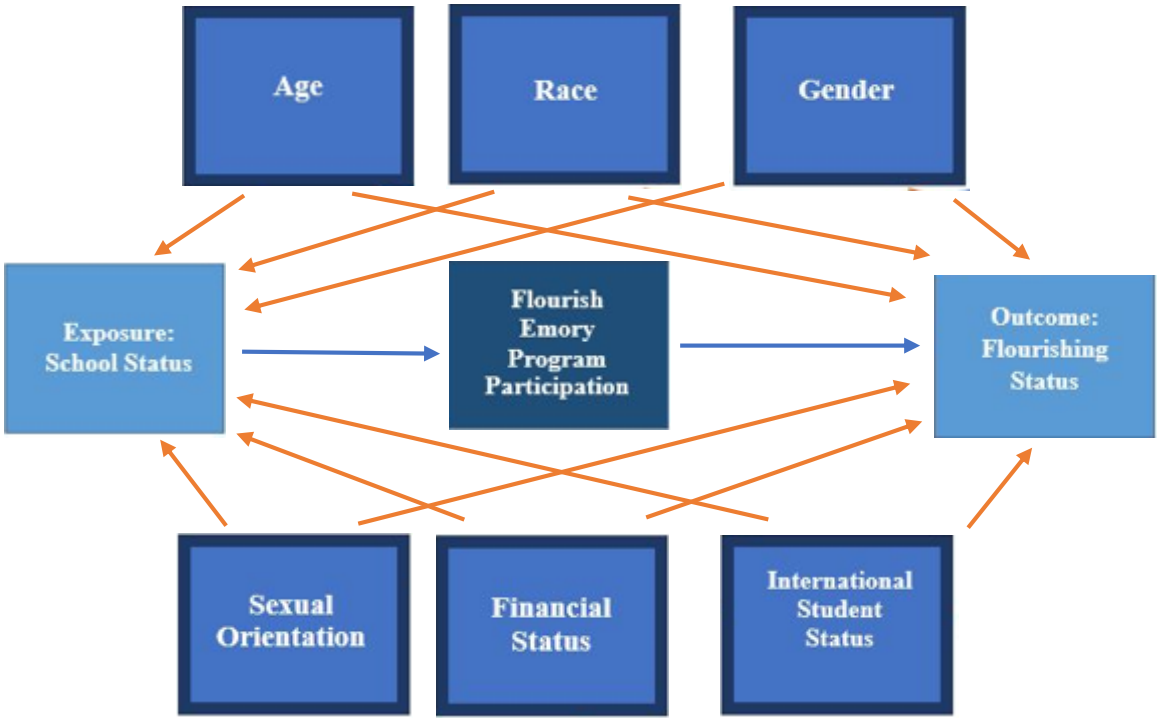


Figure 2. Directed Acyclic Graph (DAG) of hypothesized relationship between School Status, Flourishing, and Covariates



Chapter III. Future Directions and Public Health Implications

With greater attention on increasing flourishing in students, the procedure developed in this study can be repeated with the purpose of achieving a higher response rate from all the academic programs. One could then use the individual academic programs as the exposure of interest, which is more targeted than the broader analysis that was done in this study. The results of this program-level investigation could determine if the positive association with flourishing is actually representative of all graduate programs in the university, is representative of specific graduate programs whose students volunteered to respond, or whether the association is actually a proxy for age.

Another possibility would be to evaluate the same students at multiple times throughout their career at Emory University, which would allow for a longitudinal evaluation of students' flourishing status. The time points would have to be carefully chosen so that the assessment is relevant to the students' experience at Emory since the MHC-SF aims to capture the individual's experience from the previous month. Midterm and finals testing may need to be considered as potential confounders in a study like this. A longitudinal analysis of flourishing for an individual could serve as an indicator of whether or not flourishing is a variable trait that undergoes normal fluctuation, or whether it is a more stable trait that, once attained, tends to be maintained. Also it can help the university to determine if certain times within a student's experience are most closely associated with flourishing or not. A final purpose for this longitudinal analysis would be

to measure whether or not a university's students are more likely to exit the university flourishing than when they entered.

From there, one could conduct a similar study across multiple universities to determine if the findings of this study are consistent across varied universities with varied student populations. If so, these results could be generalizable to all of higher education. This would provide universities the opportunity to develop interventions and environments most likely to help their students thrive.

After the identification of factors that put students most at risk of failing to flourish, the research could expand to testing new interventions designed to increase flourishing within their student population. One intervention approach would be to promote environmental characteristics that are unique to the programs with the highest flourishing levels in other academic programs with less flourishing, and testing if a change occurs. Identifying personal and environmental factors associated with flourishing may also lead to the development of new classes, organizations, or resources available to students in an effort to encourage flourishing campus-wide. Another option would be creating programs like Flourish Emory that help students develop ways to increase flourishing. Previous research on Flourish Emory could serve as a guide, helping to determine which students should be targeted, and what types of intervention programs may be the most effective. With an expansion of the Flourish Emory programming and the number of students who participate, Emory University would have an opportunity to use the MHC-SF to evaluate the efficacy of the Flourish Emory programs, assessing flourishing before and after the student has participated. Many of the demographic covariates measured in this study should be of interest in determining potential

differences in how students are responding to various programs, which may allow for creating a more personalized plan for promoting flourishing.

. Research such as that described above is vital for promoting the importance of mental health. Universities are already experiencing increases in the severity and prevalence of mental illness, which has created a burden on universities trying to respond to this need[4]. If universities were able to create programs that would promote a culture of flourishing, this burden would likely be reduced. This becomes especially important to universities because students who are struggling with mental illness are at a greater risk of academic failure[4]. Also, flourishing individuals are physically and mentally healthier individuals[19]. Healthy students have an opportunity for the highest levels of engagement with their academic program and university experience. There is already evidence that a supportive college environment increases mental health[4]; now we need more research on the best ways to create that environment, using this study as a starting point for future research.

Universities serve as a gateway to the workforce in many ways, particularly for those in roles of leadership. This emphasizes the importance of developing students who are flourishing and can become adults in leadership who are flourishing. Providing students with the opportunity to learn techniques to improve flourishing can lead to healthier adult lives and a more productive workforce, which has the potential to strengthen our communities.

Appendix A. Office of Health Promotion Assessment

Adult MHC-SF (ages 18 or older)

Please answer the following questions are about how you have been feeling during the past month. Place a check mark in the box that best represents how often you have experienced or felt the following:

During the past month, how often did you feel …	NEVER	ONCE OR TWICE	ABOUT ONCE A WEEK	ABOUT 2 OR 3 TIMES A WEEK	ALMOST EVERY DAY	EVERY DAY
1. happy						
2. interested in life						
3. satisfied with life						
4. that you had something important to contribute to society						
5. that you belonged to a community (like a social group, or your neighborhood)						
6. that our society is a good place, or is becoming a better place, for all people						

7. that people are basically good						
8. that the way our society works makes sense to you						
9. that you liked most parts of your personality						
10. good at managing the responsibilities of your daily life						
11. that you had warm and trusting relationships with others						
12. that you had experiences that challenged you to grow and become a better person						
13. confident to think or express your own ideas and opinions						
14. that your life has a sense of direction or meaning to it						

Flourishing Demographics Form

*Student ID: _____

Age: _____

1. Please select the school(s) you are enrolled in at Emory University:
   - □ Emory College of Arts and Sciences
   - □ Oxford College
   - □ Goizueta Business School (undergrad)
   - □ Nell Hodgson Woodruff School of Nursing (undergrad)
   - □ Goizueta Business School (graduate)
   - □ Laney Graduate School
   - □ School of Law
   - □ School of Medicine
   - □ Nell Hodgson Woodruff School of Nursing (graduate)
   - □ Rollins School of Public Health
   - □ Candler School of Theology

2. Please select the Flourish Emory programs that you have participated in:
   - □ The Good Life Lecture Series
   - □ Happiness Boot Camp
   - □ B+
   - □ Second Nature
   - □ Sexual Health Advocacy Group
   - □ None of the Above
   - □ I have never heard of Flourish Emory

3. Are you an international student? Yes or No

4. Which term do you use to describe your gender identity?**
   - □ Woman
   - □ Man
   - □ Trans woman
   - □ Trans man
   - □ Genderqueer
   - □ Another identity (please specify) _____

5. How do you usually describe yourself? (Mark all that apply)**
   - □ White
   - □ Black
   - □ Hispanic or Latino/a
   - □ Asian or Pacific Islander
   - □ American Indian, Alaskan Native, or Native Hawaiian
   - □ Biracial or Multiracial
   - □ Other

6. What term best describes your sexual orientation?**

- Asexual
- Bisexual
- Gay
- Lesbian
- Pansexual
- Queer
- Questioning
- Same Gender Loving
- Straight/Heterosexual
- Another identity (please specify) _____

7. How are you paying for your experience at Emory University?

- Someone is paying for it out of pocket (ie parents or spouse)
- Mostly using loans
- Mostly using scholarships
- Other _____

8. Have you ever been diagnosed with a mental health disorder? Yes or No

*8a. If you selected yes, please list your diagnosed disorder(s)?

_____

*These data were not exported as part of the de-identified data set.

**These questions were from the National College Health Assessment.

Appendix B. Additional Tables and Figures

Flourish Emory Participation by Program

Flourish Emory Program	**Individual Participation Response***
The Good Life Series	5
Happiness Boot Camp	5
Sexual Health Advocacy Group	3
None of the Above	137
I have never heard of Flourish Emory	166

*Individuals may have participated in more than one program.