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First-Generation College Students: A Look beyond Academics. An Examination of the
Emotional and Mental Health of First-Generation College Students

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Emotional and Mental Health of First-Generation College Students

By

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Bachelor of Science
University of Michigan – Ann Arbor
2009

Thesis Committee Chair: Nancy J. Thompson, Ph.D., MPH

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

First-Generation College Students: A Look beyond Academics. An Examination of the
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By Rachel Aba Orleans

Objectives: The aims of this study were to: assess whether first-generation undergraduate
college students are different from continuing-generation undergraduate college students
on socio-demographic characteristics; determine whether there is an association between
presence of mental disorders and students' generation status; determine whether there is
an association between mental health and students' generation status; determine whether
there is evidence of a positive causal relationship between generation status and mental
disorders; determine whether there is evidence of a positive causal relationship between
generation status and poor mental health; and investigate whether generation status is
associated with mental health help-seeking behavior of students.

Methods: This study involved a secondary data analysis of the 2009 Healthy Minds
Study, a web-based survey that collected mental health information about college
students at fifteen educational institutions in the United States. First-generation and
continuing-generation Bachelor's degree-seeking students were compared on socio-
demographic characteristics, measures of mental health, and help-seeking behavior.

Results: First-generation students differed from continuing-generation students on socio-
demographic characteristics. First-generation students were less likely to screen positive
for anxiety, depression, suicide ideation, and languishing than continuing-generation
students. First-generation students were more likely to attempt suicide than continuing-
generation students. First-generation students did not differ from continuing-generation
students on planning to commit suicide, flourishing, and help-seeking behavior.

Conclusion: First-generation students experience greater stressors and challenges, yet
their emotional and mental health are similar to or even better than that of continuing-
generation students, indicating that something about being a first-generation student
protects students from having poor emotional and mental health. We theorize that this
protective factor may be resiliency. Another possible explanation for why first-
generation students have a lower likelihood of adverse mental health outcomes may be
that first-generation students are less likely to recognize, acknowledge, or admit to having
emotional and mental health issues. The only measure of mental health in which first-
generation students were at risk for was suicide attempt. This is an interesting
phenomenon that warrants further study.

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This thesis is dedicated to my wonderful parents, who never had the opportunity to attend college. Thank you so much for supporting me in all of my pursuits and endeavors. This thesis is also dedicated to my sister, Harriet. Thank you for being my biggest cheerleader.

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INTRODUCTION

The purpose of this research study is to examine the emotional and mental health of first-generation college students. Although virtually all students endure some level of stress while attending college, a special group of college students face the normal stressors and challenges associated with college (e.g., social acceptance, academic rigor, transitioning from home setting), as well as additional stressors and struggles not necessarily faced by most other students. This special segment of the college population is the first-generation college students. First-generation college students are defined as students who are the first in their families to attend college and whose parent(s) have not attained a college education, or students who come from families with little or no collegiate history (University of Illinois at Urbana-Champaign, 2007). First-generation college students are usually from a low socioeconomic background, are less prepared academically and psychologically for college, and have a lower sense of self-efficacy and self-esteem compared to students whose parents attended college (Inman & Mayes, 1999). Moreover, first-generation students tend to come from working class families from various cultural and ethnic backgrounds, and may not always receive support from their families while attending college (University of Illinois at Urbana-Champaign, 2007).

The usual stressors associated with college combined with additional stressors associated with the first-generation status (e.g., lack of familial support, lower self-efficacy; greater financial woes) segregate first-generation college students from other college students and may place them at greater risk for developing mental disorders or

mental health issues. Mental illnesses in young people, including college students, can severely limit their ability to reach normal goals for social and educational achievement, increase their risks of developing further psychopathology and functional impairment, and arrest them at suboptimal functioning throughout their lives (National Research Council and Institute of Medicine, 2009). Furthermore, the heavy toll mental disorders place on society, the social disruption that they can cause, and the risk that affected young people will underperform as adults, all make mental illnesses and poor mental health a true public health concern (National Research Council and Institute of Medicine, 2009).

Given the individual and public health impacts of mental illnesses, it is imperative that the overall mental health of first-generation college students be investigated. A review of the literature reveals that while the academic challenges, barriers, and struggles of first-generation college students have been widely documented, mental health issues among members of this population have not been the central focus of many research studies. Although there is a large body of literature about first-generation college students with respect to their academic preparation, transition to postsecondary education, and progress toward degree attainment, surprisingly little is known about their cognitive and psychosocial development during college (Pascarella, Pierson, Wolniak, & Terenzini, 2004). Conversely, while there is an abundance of research literature on the mental health of college students (e.g., Abramowitz, 1969; Eisenberg, Gollust, Golberstein, & Hefner, 2007; Hammen & Cochran, 1981; Joiner, Alfano, & Metalsky, 1992), a thorough search of the literature found no studies that looked specifically at mental disorders among first-generation college students.

Therefore, the primary purpose of the present study is to begin filling this immense gap in knowledge related to the mental health of first-generation college students. The objectives of this study are to: investigate whether first-generation college students differ from continuing-generation students on socio-demographic factors; assess whether there is an association between students' generation status, mental disorders, and mental health; assess whether there is evidence of a positive causal relationship between generation status, presence of mental disorders, and poor mental health; and investigate whether generation status influences mental health help-seeking behavior of students.

The proposed study and research questions are grounded in the theory of Social Networks and Social Support [Figure 1], which posits that social networks and social support may have a positive influence on health status, health behaviors, and health decision making (Glanz, Rimer, & Viswanath, 2008). Hence, receipt of little or no social support (from family or friends, for example) could lead to deleterious health behaviors and outcomes in an individual. Guided by the Social Networks and Social Support theory, this study will investigate whether first-generation college students, who tend to receive less familial support regarding their education (University of Illinois at Urbana-Champaign, 2007), have poorer mental health outcomes, compared to their non-first-generation peers (i.e., continuing-generation students), who generally receive the support of their families with regard to their education. Moreover, this study will investigate whether mental health outcomes of first-generation college students (which may be impacted by their lack of social support) subsequently influence their mental health help-seeking behavior.

Figure 1: Theory of Social Networks and Social Support
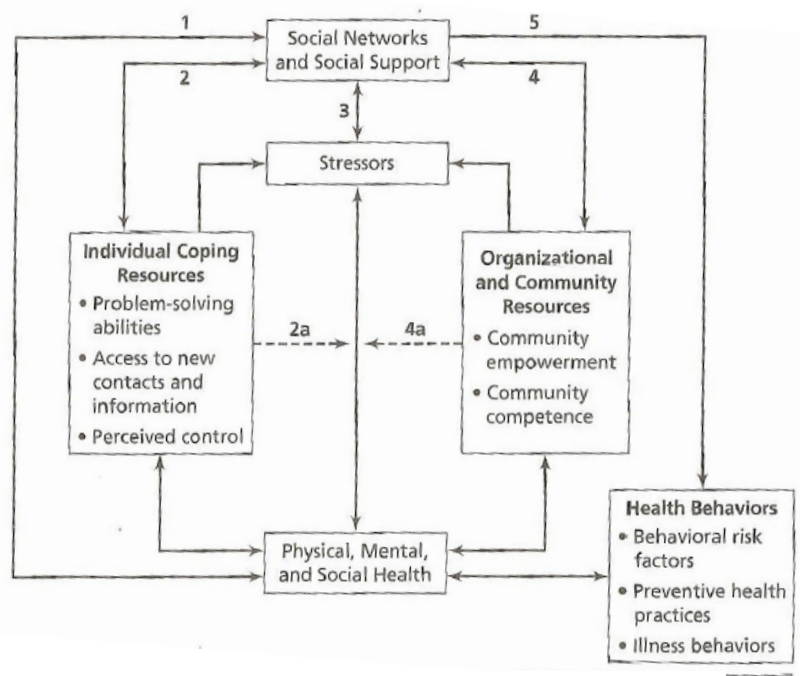
From: Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2008). *Health behavior and health education, theory, research, and practice, fourth edition*. San Francisco, CA: Jossey-Bass.

REVIEW OF LITERATURE

Mental disorders are common, yet debilitating, conditions affecting hundreds of millions of people worldwide (World Health Organization [WHO], 2010). Mental disorders are commonly defined as health conditions characterized by changes in thinking, mood, and/or behavior, accompanied by distress and/or impaired functioning (U.S. Department of Health and Human Services [DHHS], 1999). Mental illnesses, which refer to all diagnosable mental disorders, span a broad range of disorders including anxiety, mood, eating, substance use, personality, and psychotic disorders (U.S. DHHS, 1999). In the United States, the prevalence of mental illnesses is immense. An estimated 26.2% of Americans ages 18 years and older – roughly, one in four adults – suffer from a diagnosable mental disorder in a given year (National Institute of Mental Health [NIMH], 2010). When applied to the 2004 U.S. Census residential population estimate for ages 18 and older, 26.2% translates to approximately 57.7 million people living with at least one mental illness in a given year (NIMH, 2010).

A crippling sequela of all mental disorders is the clinically significant distress and/or impairment in social and occupational functioning associated with them. This hallmark of mental illnesses is quite devastating because the distress and impairment that stem from mental illnesses severely hinder people diagnosed with a mental disorder from being able to lead successful lives, and subsequently, increase the overall burden of mental illnesses. Research reveals that approximately 80% of persons with depression report some level of functional impairment as a result of their depression, and 27% report serious difficulties in their work and home life (Centers for Disease Control and Prevention [CDC], 2008). Moreover, individuals with psychiatric disorders tend to have

diminished quality of life across all domains (e.g., physical health, work, social and family relationships, ability to function in daily life, and overall sense of well-being) as measured by the Quality of Life Enjoyment and Satisfaction Questionnaire (Rapaport, Clary, Fayyad, & Endicott, 2005). Currently, four of the top ten causes of disability in the world are mental illnesses (National Alliance on Mental Illness [NAMI], 2010). Worldwide, depression is the leading cause of disability as measured by years lived with disability, was the fourth leading contributor to the global burden of disease in 2000, and is projected to produce the second largest disease burden in the year 2020 (NAMI 2010; WHO, 2010). Taking both the Medical Outcomes Study (MOS) Short-Form General Health Survey (SF-20) scales and self-reported disability days into account, Spitzer et al. (1995) discovered that on most measures, the most common mental disorders are associated with greater impairment than several common medical disorders, such as cardiac disease, arthritis, hypertension, and diabetes.

Beyond diminished quality of life, suicidality has also been closely associated with mental disorders. Several studies have established co-morbidity between Diagnostic Statistical Manual (DSM) mental disorders and suicide ideation and attempt, indicating that individuals with mental disorders are significantly more likely to have suicide ideation, attempt suicide, and complete suicide (e.g., Foster, Gillespie, and McClelland, 1997; Harris, Barraclough, 1997; Lesage et al. 1994; Shafii et al., 1988; Weissman, Klerman, Markowitz, and Ouellette, 1989).

Unfortunately, college campuses are not immune to mental disorders and their debilitating consequences. Because half of all lifetime cases of mental disorders begin by age 14 and three fourths by age 24, there is a high prevalence of mental illnesses among

U.S. college students, who usually fall within the age range of 18-25 years (American College Health Association, 2008; Kessler, Berglund, Demler, Merikangas, & Walters, 2005). For example, a study by Furr et al. (2001) revealed that 53% of sampled college students reported experiencing self-assessed depression since beginning college, making depression one of the most common mental health problem documented on college campuses (DeRoma, Leach, & Leverett, 2009). A different study by Eisenberg et al. (2007) estimated the true prevalence for any depressive or anxiety disorder among undergraduate students (using a validated instrument: the Patient Health Questionnaire) at a large public university as 15.6%. Although young adulthood and the college years are generally characterized by circumstances that offer opportunities for growth (e.g., the pursuit of greater educational opportunities and employment prospects, development of personal relationships), these life events may also result in stress that precipitates the onset or recurrence of mental disorders (Blanco et al., 2008).

The nature of the college environment and the college experience itself exposes all college students to varying degrees of stressors during their time at college. While a myriad of factors have been shown to contribute to stress, anxiety, depressive symptoms, and poor mental health in college students, academic performance, social stressors, financial problems, and adjustment – required in the transition from a family setting to a college environment – have been cited as the most common factors in the development of depressive symptoms and may contribute to the development of other mental disorders (Blanco, 2008; DeRoma, Leach, & Leverett, 2009). These mental health issues can, in turn, negatively affect students' academic performance, retention, and graduation rates (Kitzrow, 2003). Deroma, Leach, and Leverett (2009), examining the relationship

between self-reported depressive symptomology and college academic performance, discovered that students with moderate levels of depressive symptoms demonstrated lower performance within academic environments compared to those with normal and minimal levels of depression. This may be related to Ellis, Ottaway, Varner, Becker, and Moore's (1997) proposal that depressive symptomology may negatively affect students' beliefs in their performance capabilities by lowering their expectations of academic success and reducing their motivation to learn.

Even though it is known that first-generation college students endure unique conditions which could possibly place them at a greater risk for developing mental health issues, there is no known research study that investigates whether the stressors they face during college actually translate into the development of mental disorders or poor mental health in this population, or even if mental health is associated with a student's generation status. As discussed in the introduction of this document, literature regarding the mental health of first-generation college students is extremely scarce and virtually non-existent. Therefore, the review of the literature on first-generation college students will focus on what has been learned about this population, in general, in order to have a starting point and framework for investigating how the qualities of these students may correlate with the presence of mental health issues.

In examining published literature on first-generation college students, Pasceralla et al. (2004) noted that research on first-generation college students generally falls into three broad categories: one, it compares first-generation and other college students in terms of demographic characteristics, secondary school preparation, the college choice process, and college expectations; two, it attempts to describe and understand the

transition of first-generation students from high school to postsecondary education; or three, it examines students' persistence in college, degree attainment, and early career labor market outcomes. Summarizing the findings from all three types of studies, Pascarella et al. (2004) noted that the first category of research has revealed that compared to their peers, first-generation college students tend to be at a distinct disadvantage with respect to basic knowledge about postsecondary education, level of family income and support, educational degree expectations and plans, and academic preparation in high school. The second category of research revealed that first-generation students as a group have a more difficult transition from secondary school to college than their peers because, not only do they face all the anxieties, dislocations, and difficulties of any college student, their experiences often involve substantial cultural as well as social and academic transitions (Pascarella et al., 2004). Finally, the third category of research has indicated that compared to students whose parents are college graduates, first-generation students are more likely to leave a four-year institution at the end of the first year, less likely to remain enrolled in a four-year institution or be on a persistent track to a Bachelor's degree after three years, and are less likely to stay enrolled or attain a Bachelor's degree after five years (Pascarella et al., 2004).

One of the earliest studies on first-generation college students was conducted by Howard B. London (1989). In this study, London followed a group of fifteen first-generation college students in the Boston, Massachusetts area in an attempt to highlight and understand the difficulties these students faced during their time in college. Using a case-study approach, London interviewed students about their family, social, and educational histories, and observed how, if at all, the social histories and psychodynamics

of families contributed to the matriculation of first-generation college students. During

the course of the study, London documented the inner-struggles that students face with

personal attempts to achieve autonomy (through education) and parents' feeling

threatened and, perhaps, even infuriated by such behavior. London also investigated how

students reconciled (or did not reconcile) the often conflicting requirements of family

membership and educational mobility. An important theme that emerged in the study

was the idea of "breakaway guilt", the feeling of students that one or both parents were so

dependent on them that to leave and attend college was criminal (London, 1989). This

intergenerational separation means students also face loneliness as often times they do

not have others to talk to, especially since their family and friends can not identify with

their new experiences. A quote from one student in the study describes this feeling:

> "I wasn't able to communicate with anyone [on campus]. I spent a lot of time
>
> doing things by myself and I was getting really lonely. When I tried to talk to
>
> somebody, to explain how I was feeling or what I was going through, a lot of
>
> people either didn't want to hear or they thought it was just weird…At home they
>
> don't know. I don't talk about it, they don't know about anything. There's a lot
>
> of stuff that goes on this campus and my parents don't know what it means. It's
>
> like living in a totally different world." (London,1989, p. 146).

A few years later, Terenzini, Springer, Yaeger, Pascarella, and Nora (1996)

investigated whether first-generation students differed from their traditional peers in both

college entrance characteristics and college experiences. The authors surveyed 2,685

students (825 first-generation and 1,860 traditional students) who entered 23 diverse

institutions nationwide in Fall 1992, and who had completed one year of study. The study revealed that compared to their traditional peers, first-generation students were more likely to come from low-income families, have weaker cognitive skills (in reading, math, and critical thinking), have lower degree aspirations, and to have been less involved with peers and teachers in high school. First-generation students also tended to have more dependent children, expected to take longer to complete their degree programs, and reported receiving less encouragement from their parents to attend college.

Phinney and Haas (2003), using a narrative approach, explored the process of coping among ethnic minority first-generation college freshmen. Participants in the study wrote in journals once a week for three weeks describing the ways they coped with stress, providing evidence of the complex and interactive process of coping among members of this population. Results of the study revealed that students experienced continual high levels of stress that included time conflicts, academic pressure, and family difficulties (Phinney & Haas, 2003). While some students viewed themselves as coping well with college stress, others did not. The more successful students reported believing that they had the ability to succeed and they did not feel that they were lacking social support. Those who felt unsuccessful, however, reported that they could not stay focused on their schoolwork, in part because they did not feel supported in their academic efforts. This study highlighted self-efficacy and social support as key factors in successful coping. Phinney and Haas (2003) conjectured that those who felt more confident may have received support in the past, allowing them now to be self-sufficient or to feel that there is support available to fall back on if needed.

While not specific to first-generation students, Baumeister and Larry (1995) also reported that people with low levels of social connectedness report more psychological distress, including depression and low-self-esteem, whereas people with high levels of social connectedness are protected from depressive symptomatology. Similarly, Armstrong and Oomen-Early (2009), in their study of social connectedness, self-esteem, and depression symptomatology, revealed that when levels of self-esteem increase, levels of depression decrease.

Although information on the mental health of first-generation college students is rare, the literature on first-generation college students provides insight into characteristics of this population and permits us to hypothesize how these characteristics and attributes may affect the mental health of these students. Overall, the literature reveals that first-generation college students differ from continuing-generation students on demographic, academic, and psychological factors. However, since the literature doesn't provide information about the mental health of these students, the present study will attempt to begin to fill this gap.

Specifically, the objectives of this study are to: (1) assess whether first-generation undergraduate college students are different from continuing-generation undergraduate college students on socio-demographic measures; (2) determine whether there is an association between presence of mental disorders and students' generation status among undergraduate college students; (3) determine whether there is an association between mental health and students' generation status among undergraduate college students; (4) determine whether there is evidence of a positive causal relationship between generation status and mental disorders among undergraduate college students (that is, when first-

generation is present, mental disorders are also present); (5) determine whether there is evidence of a positive causal relationship between generation status and poor mental health among undergraduate college students; and (6) determine whether generation status influences mental health help-seeking behavior of undergraduate college students.

We hypothesize that: (1) first-generation college students differ from continuing-generation students on socio-demographic measures; (2) there is an association between presence of mental disorders and students' generation status; (3) there is an association between mental health and students' generation status; (4) there is evidence of a positive causal relationship between generation status and presence of mental disorders; (5) there is evidence of a positive causal relationship between generation status and poor mental health; and (6) generation status influences mental health help-seeking behavior of students.

METHODS, ANALYSIS AND RESULTS

METHODS

This was a non-experimental research study that employed secondary data analysis to investigate the proposed research questions. We analyzed de-identified data collected from the 2009 Healthy Minds Study (HMS) survey, an annual, national, web-based survey that collects mental health information about undergraduate and graduate college students at educational institutions in the United States. More precisely, this study was a cross-sectional study that explored the stated research questions by analyzing data which were collected at one time point.

Procedures

The 2009 HMS was conducted at fifteen different U.S. colleges and universities between February 2009 and May 2009. Although the HMS was open to all U.S. colleges and universities, fifteen institutions chose to participate in the 2009 survey. The HMS investigators recruited participants by relying on each of the fifteen participating institutions to provide the HMS team with a random sample of students who met the eligibility criteria. Specifically, each participating school provided the HMS team with a randomly selected list of at least 1,000 currently enrolled students, eighteen years of age and older (from the full list of currently enrolled students, eighteen years and older), to be used in the study sample. Those sampled for the study were sent a pre-notification letter via mail. The letter included a description of the study, information on confidentiality and consent, and instructions for completing the survey over the Internet. Each pre-

notification letter also included a $1 bill to encourage individuals to complete the survey. For respondents who did not complete the survey within one week after receiving the pre-notification letter, an e-mail invitation to complete the survey was sent, followed by four additional e-mail reminders spaced by two to four days apart each. Each communication contained a URL and a unique study ID number to gain access to the survey. All survey data were collected February through May 2009.

The privacy of subjects and the confidentiality of the secondary data were protected throughout the study. We were only provided with already de-identified data that could not be linked to specific participants in any way. No member of the study team had access to the code that links identifiers to subjects. Furthermore, the de-identified data were always stored on a password-protected computer accessible only by the principal investigator.

Participants

Participants were respondents to the 2009 HMS. To be eligible to participate in the survey, participants had to be eighteen years of age or older and enrolled (either as a full-time or part-time student) at a HMS participating institution at the time of the survey. Because the HMS employed a simple random sampling technique, all eligible students at participating institutions had an equal chance of being selected to complete the survey. A total of 19,100 students were randomly selected from all fifteen participating institutions to complete the questionnaire and 8,597 (response rate = 45.0%) students responded to the survey.

Since the target population for this study is undergraduate college students in the United States, we restricted data analysis to all students enrolled in an undergraduate Bachelor's degree-seeking program in the national sample [n = 5639 (un-weighted); n = 11,465 (weighted)]. Survey probability weights were applied to the dataset in order to obtain representative estimates.

Measures

Because this was a secondary data analysis, we relied solely on the measurement instruments employed in the Healthy Minds Study to define and measure variables of interest. We operationalized all study variables in terms of the measures and measurement instruments utilized in the HMS.

Socio-Demographics

Participants self-reported their age, gender, race/ethnicity, sexual orientation, religiosity, current financial situation, financial situation growing up, hours per day spent doing homework, hours per week spent at a paid job, and emotional help and support they receive from their family. Religiosity was determined by responses to the survey item, *"How religious would you say you are?"* Possible answer choices were: *Very Religious; Fairly religious; Not too religious; and Not religious at all.* Current Financial Situation was determined by responses to the survey item, *"How would you characterize your current financial situation?"* Possible answer choices were: *It's a financial struggle; It's tight but I'm doing fine; Finances aren't really a problem.* Financial Situation Growing Up was determined by responses to the survey item, *"Which of the*

following best describes your family's financial situation growing up?" Possible answer

choices were: *Very poor, not enough to get by; Enough but not many extras;*

Comfortable; Well to do. Hours Spent Doing Homework were determined by responses

to the survey item, *"During this semester so far, about how many hours per day have you*

spend doing school work?" Possible answer choices ranged from *less than 1 hour* to *8 or*

more hours. Hours of Work in Paid Job were determined by responses to the survey item

"During this semester so far, about how many hours per week have you worked at a paid

job?" Possible answer choices were categorized as: *none; 1-5 hours; 6-10 hours; 11-15*

hours; 16-20 hours; 21-30 hours; and more than 30 hours. Emotional Help and Support

from Family was determined by responses to the survey item, *"I get the emotional help*

and support I need from my family." Possible answer choices were: *Strongly Disagree,*

Somewhat Disagree; Neutral; Somewhat Agree; and Strongly Agree.

Generation Status

Generation Status was assessed based on responses to the survey items, *"What is*

the highest level of education completed by your mother?" and *"What is the highest level*

of education completed by your father?" Students who reported that both parents

completed less than a college education [i.e., *eight grade or lower; between 9th and 12th*

grade (but no high school degree); or high school degree] were defined as first-

generation college students. All other students who reported that one or both parents

attained a college education or higher [i.e., *some college (but no college degree);*

Associate's degree; Bachelor's degree; or Graduate degree] were defined as non-first-

generation college students (i.e., continuing-generation students).

Mental Disorders

Presence of Depression was assessed based on responses to survey items adapted from the Patient Health Questionnaire (PHQ) (Spitzer, Kroenke, Williams, & the Patient Health Questionnaire Primary Care Study Group, 1999). Participants who screened positive for depression were identified as having depression. Presence of Anxiety was also assessed based on responses to survey items adapted from the PHQ. Participants who screened positive for any anxiety on the PHQ were identified as having anxiety. Suicide Ideation was assessed by responses to the survey item, *"In the past year, did you ever seriously think about committing suicide?"* Possible answer choices were: *Yes; No*. Suicide Plan was assessed by responses to the survey item, *"In the past year, did you make a plan for committing suicide?"* Possible answer choices were: *Yes; No*. Suicide Attempt was assessed by responses to the survey item, *"In the past year, did you attempt suicide?"* Possible answer choices were: *Yes; No*.

Mental Health

Mental Health was measured by responses to surveys items adapted from Keyes's Mental Health Continuum scale (Keyes, 2002). Participants who screened positive for positive mental health on Keyes's scale were classified as *"flourishing"*. Participants who screened positive for poor mental health on Keyes's scale were classified as *"languishing'*. In this analysis, "languishing" is used as a measure of poor mental health.

Help-seeking Behavior

Participants' <u>Help-seeking Behavior</u> was assessed by first selecting those who responded "Yes" to the survey item, *"In the past 12 months, did you think you needed help for emotional or mental health problems such as feeling sad, blue, anxious or nervous?"* and then examining whether these individuals utilized mental health services. Utilization of mental health services was determined by responses to two survey items: 1.) *"In the past 12 months have you taken any of the following types of prescription medications?"* Possible answer choices were: *psychostimulants; antidepressants; anti-psychotics; anti-anxiety medications; mood stabilizers; sleep medications; none; don't know*. 2.) *"In the past 12 months have you received counseling or therapy for your mental or emotional health from a health professional?"* Possible answer choices were: *Yes; No*.

ANALYTIC PROCEDURES

All statistical analyses were conducted using the SPSS (Statistical Package for the Social Sciences) 17 computer program. All missing cases were deleted listwise. To select covariates into regression models, bivariate tests (Chi-Squared) between possible predictor variables and the outcome of interest were performed. Covariates were selected into a regression model if bivariate tests resulted in a p-value of less than 0.20. A full regression model was then performed using $p < 0.05$ as the significance level.

Aim 1 was assessed with eight Chi-Squared tests. The independent variable was students' generation status and the eight dependent variables were: age, gender, race/ethnicity, current financial situation, financial situation growing up, emotional help

and support from family, time spent doing homework, and time spent at a paid job. Aim 2 was assessed with six independent Logistic Regression Models. The independent variable was students' generation status and the six dependent variables were: anxiety, depression, anxiety and/or depression, suicide ideation, suicide plan, and suicide attempt. Aim 3 was assessed with two independent Logistic Regression Models. The independent variable was students' generation status and the two dependent variables were: flourishing and languishing. Aim 4 was assessed with a Logistic Regression Model. The independent variable was an interaction term between students' generation status and their current year in their degree program, and the dependent variable was anxiety and/or depression. Aim 5 was assessed with a Logistic Regression Model. The independent variable was an interaction term between students' generation status and their current year in their degree program, and the dependent variable was languishing. Aim 6 was assessed with a Logistic Regression Model. The independent variable was students' generation status and the dependent variable was help-seeking behavior.

RESULTS

Characteristics of the Sample

The un-weighted sample consisted of 5639 Bachelor's degree-seeking students. Weights were applied to the original sample size in order to obtain a representative sample. When weighted, the sample size was 11,465 Bachelor's degree-seeking students. Among the sample, 59.2% (n=6765) were female and 40.8% (n=4670) were male. In terms of race and ethnicity, 66.3% (n=7597) of participants were White or Caucasian, non-Hispanic, non-Arab, 8.8% (n=1012) were Hispanic/Latino, 7.6% (n=876) were

Asian/Asian American, 7.1% (n=809) were African American/Black, non-Hispanic, 4.7% (n=538) were Multi-racial, and 5.4% (n=623) identified their race/ethnicity as "Other". Most participants (83.7%; n=1380) fell in the range of 18 through 22 years, with age 19 (21.7%, n=2487) as the most common age. Of all participants, 22.7% (n=2600) indicated they were in their 1st year of their current degree program, 22.5% (n=2575) indicated they were in their 2nd year, 26.4% (n=3025) were in their 3rd year, 23.8% (n=2727) were in their 4th year, 3.3 % (n=380) were in their 5th year, 0.7% (n=85) were in their 6th year, and 0.6% (n=71) were in their 7th or higher year. The majority of participants (92.6%, n=10592) identified their sexual orientation as heterosexual, and 7.4% (n=849) identified as bisexual, gay, lesbian, queer, or other. With regards to religiosity, 17.6% (n=2008) of participants reported being very religious, 35.8% (n=4096) reported being fairly religious, 26.9% (n=3079) reported being not too religious, and 19.7% (n=2259) reported being not religious at all. Lastly, 12.2% (n=1334) of the sample were first-generation college students and 87.8% (n=9592) were continuing-generation students. *[See Table 1 for a list of the demographic characteristics of the sample.]*

**Table 1: Demographic Characteristics of Sample
(Bachelor's Degree-Seeking Students)**

Characteristics	N (%)
Age (in years)	
18	1380 (12%)
19	2487 (21.7%)
20	2154 (18.8%)
21	2272 (19.8%)
22	1305 (11.4%)
23-25	873 (7.6%)
26-30	440 (3.8%)
31-35	192 (1.7%)
36-40	155 (1.4%)
41 or older	205 (1.8%)
Gender	
Female	6765 (59.2%)
Male	4670 (40.8%)
Race/Ethnicity (Mutually Exclusive)	
Asian	876 (7.6%)
Black/African American	809 (7.1%)
Hispanic/Latino	1012 (8.8%)
Multi	538 (4.7%)
Other	623 (5.4%)
White or Caucasian, non-Hispanic, non-Arab	7597 (66.3%)
Sexual Orientation	
Heterosexual	10592 (92.6%)
Lesbian, Gay, Bisexual, Queer, Other	849 (7.4%)
Religiosity	
Very Religious	2008 (17.6)
Fairly Religious	4096 (35.8)
Not Too Religious	3079 (26.9)
Not at all Religious	2259 (19.7)
Year in Degree Program	
1	2600 (22.7%)
2	2575 (22.5%)
3	3025 (26.4%)
4	2727 (23.8%)
5	380 (3.3%)
6	85 (0.7%)
7 or higher	71 (0.6)
Generation Status	
First-Generation	1334 (12.2%)
Continuing-Generation	9592 (87.8%)

Total (Unweighted) Sample Size = 5639
Total Weighted Sample Size = 11,465

Comparison of Socio-demographic Characteristics by Generation Status

First-generation students differed from continuing-generation students on all measured socio-demographic factors. First-generation students were generally older (p<0.001), female (p=0.008), and minorities (p<0.001), compared to continuing-generation students. More first-generation students reported their current financial situation as a struggle and fewer reported that their current financial situation was not really a problem (p<0.001), when compared to continuing-generation students. Furthermore, a greater number of first-generation students reported being very poor growing up, compared to continuing-generation students, and fewer reported their family situation as "well to do" compared to continuing-generations students (p<0.001). For both current financial situation and financial situation growing up, there was a dose-response trend, indicating that continuing-generation students generally have a better financial situation, compared to first-generation students. First-generation students spend more hours per week working at a paid job (p<0.001) compared to continuing-generation students, and they also spend fewer hours per night doing homework, compared to continuing-generation students (p<0.001). *[See Table 2 for list of socio-demographic characteristics by generation status.]*

Table 2: Comparison of Sociodemographic Characteristics by Generation Status

Characteristics	FGCS (N=1334) N (%)	CGCS (N=9592) N (%)	P-Value
Age (in years)			**<0.001**
18	142 (10.7)	1180 (12.3)	
19	210 (15.8)	2150 (22.4)	
20	180 (13.5)	1883 (19.6)	
21	201 (15.1)	1981 (20.7)	
22	153 (11.5)	1095 (11.4)	
23-25	135 (10.1)	698 (7.3)	
26-30	107 (8.0)	304 (3.2)	
31-35	59 (4.4)	121 (1.3)	
36-40	58 (4.4)	75 (0.8)	
41 or older	88 (6.6)	103 (1.1)	
Gender			**0.008**
Female	830 (62.4)	5603 (58.6)	
Male	500 (37.6)	3963 (41.4)	
Race/Ethnicity			**<0.001**
Asian	138 (10.4)	709 (7.4)	
Black/African American	118 (8.9)	521 (5.4)	
Hispanic/Latino	365 (27.4)	573 (6.0)	
Multi	44 (3.3)	471 (4.9)	
Other	54 (4.1)	516 (5.4)	
White or Caucasian	613 (46.0)	6797 (70.9)	
Current Financial Situation			**<0.001**
It's a financial struggle	461 (34.6)	1763 (18.4)	
It's tight but I'm doing fine	734 (55.0)	5532 (57.7)	
Finances aren't really a problem	139 (10.4)	2292 (23.9)	
Financial Situation Growing Up			**<0.001**
Very poor, not enough to get by	131 (9.8)	210 (2.2)	
Had enough but not many "extras"	729 (54.6)	2572 (26.8)	
Comfortable	431 (32.3)	5570 (58.1)	
Well to do	43 (3.2)	1234 (12.9)	
Emotional Help and Support from Family			**<0.001**
Strongly Disagree	135 (10.7)	695 (7.6)	
Somewhat Disagree	93 (7.3)	673 (7.4)	
Neutral	189 (14.9)	1041 (11.5)	
Somewhat Agree	324 (25.6)	2486 (27.4)	
Strongly Agree	525 (41.5)	4192 (46.1)	
Time Spent Doing Homework (hours per night)			**<0.001**
Less than 1 hour	112 (8.8)	527 (5.7)	
1 hour	166 (13.0)	1007 (11.0)	
2 hours	281 (22.0)	2079 (22.6)	
3 hours	235 (18.4)	1913 (20.8)	
4 hours	148 (11.6)	1408 (15.3)	
5 hours	102 (8.0)	846 (9.2)	
6 hours	64 (5.0)	528 (5.7)	
7 hours	35 (2.7)	218 (2.4)	
8 hours or more	136 (10.6)	660 (7.2)	
Time Spent at Paid Job (hours per week)			**<0.001**
None	466 (36.6)	4618 (50.2)	
1-5 hours	90 (7.1)	950 (10.3)	
6-10 hours	113 (8.9)	1363 (14.8)	
11-15 hours	126 (9.9)	762 (8.3)	
16-20 hours	106 (8.3)	535 (5.8)	
21-30 hours	113 (8.9)	420 (4.6)	
> 30 hours	260 (20.4)	551 (6.0)	

Footnotes:
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students

Mental Disorders and Generation Status

The association between mental disorders, mental health, and generation status were first assessed using Chi-Squared tests and Simple Logistic Regression Models that did not control for any covariates. Next, these same associations were assessed controlling for all covariates. All demographic variables (i.e., age, gender, race/ethnicity, sexual orientation, and religiosity) were included in the full regression models. Bivariate tests were conducted to identify other predictor variables to be included in the full regression models. Specifically, Chi-Squared tests were conducted comparing the predictor variables (i.e., emotional help and support from family, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job) to each outcome of interest (i.e., anxiety, depression, suicide ideation, suicide plan, suicide attempt, flouring, and languishing). All of these predictor variables were significant and well below the 0.20 p-value cut-off, therefore they were included in the regression model. Thus, the covariates measured were: age, gender, race/ethnicity, sexual orientation, religiosity, emotional help and support from family, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job. The results of the adjusted models are presented in this report.

Controlling for all covariates, students' generation status was significantly associated with screening positive for anxiety [i.e., Panic Disorder or Generalized Anxiety Disorder (GAD)]. Specifically, first-generation students were 33.2% less likely to screen positive for anxiety than continuing-generation students (AOR=0.668; 95%CI=0.536, 0.832; p=<0.001). Similarly, generation status was significantly associated with screening positive for depression, with first-generation students being

23.9% less likely to screen positive for depression than continuing-generation students (AOR=0.761; 95%CI: 0.637, 0.909; p=0.003). Generation status was significantly associated with suicide ideation. Specifically, first-generation college students were 29.1% less likely to have seriously thought about suicide in the past 12 months than continuing-generation students (AOR=0.709; 95%CI=0.541, 0.931; p=0.013). While planning to commit suicide was not significantly associated with generation status (p=0.828), attempting suicide was significantly associated with generation status. Specifically, first-generation college students were 2.071 times more likely to attempt suicide than continuing-generation (AOR=2.071; 95%CI = 1.068, 4.015; p=0.031). *[See Table 3 for results of multivariate analyses.]*

Mental Health and Generation Status

Controlling for all covariates, generation status was not significantly associated with screening positive for flourishing (p=0.895). However, generation status was significantly associated with languishing (i.e., poor mental health). Specifically, first-generation students were 45.0% less likely to screen positive for languishing than continuing-generation students (AOR=0.550; 95%CI = 0.378, 0.800; p=0.002). *[See Table 3 for results of multivariate analyses.]*

Table 3: Association between Mental Disorders, Mental Health, and Generation Status

Characteristics	FGCS N (%)	CGCS N (%)	AOR	95% CI	P-Value
Mental Disorder					
*Anxiety (Panic/GAD)	128 (9.9%)	1096 (11.8%)	0.668	0.536-0.832	<0.001
*Any Depression	225 (17.3%)	1637 (17.5%)	0.761	0.637-0.909	0.003
*Anxiety and/or Depression	274 (21.2%)	2119 (22.9%)	0.718	0.609-0.846	<0.001
Suicidality					
*Suicide Ideation	77 (6.0%)	687 (7.5%)	0.709	0.541-0.931	0.013
Suicide Plan	21 (1.6%)	178 (1.9%)	0.945	0.570-1.569	0.828
*Suicide Attempt	16 (1.2%)	63 (0.7%)	2.071	1.068-4.015	0.031
Mental Health					
Flourishing	632 (49.3%)	5092 (55.6%)	0.991	0.860-1.141	0.895
*Languishing	46 (3.5%)	326 (3.4%)	0.550	0.378-0.800	0.002

<u>Footnotes:</u>
Model adjusted for: *age, gender, race/ethnicity, sexual orientation, religiosity, emotional help and support from family, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job*
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students (Used as the referent group.)
* Indicates p<0.05

Evidence of a Positive Causal Relationship between Generation Status and Mental

Disorder, Poor Mental Health

An interaction term was created between generation status and students' year in

their degree program to assess evidence of a positive causal relationship between

generation status and mental disorder and poor mental health, over time. Although the

interaction was not significant for poor mental health (i.e., languishing) (p=0.116), it was

significant for screening positive for anxiety and/or depression (p<0.001), controlling for

all covariates. Because the interaction term for screening positive for anxiety and/or

depression was significant, a Multivariate Logistic Regression Model was conducted to

assess the Odds Ratio for screening positive for anxiety and/or depression within each

program year. Generation status was found to be associated with screening positive for

anxiety and/or depression in the first (p=0.001) and second year (p<0.001) of students'

degree program. Specifically, among students in their first year of study, first-generation

students were 47.1% less likely to screen positive for anxiety and/or depression (AOR =

0.529; 95%CI: 0.039, 0.780; p=0.001). Among students in their second year of study,

first-generation students were 64.4% less likely to screen positive for anxiety and/or

depression (AOR=0.356; 95%CI: 0.227, 0.560; p<0.001). Generation status was not

associated with screening positive for anxiety and/or depression in the third year

(p=0.240) or the fourth year and beyond (p=0.188). *[See Table 4 for results and Figure 2*

for graph of results.]

Table 4: Generation Status and Mental Disorder Layered by Year in Degree Program

Year in Degree Program	FGCS N (%)	CGCS N (%)	AOR	95% CI	P-Value
*1	45 (16.0%)	477 (22.5%)	0.529	0.359-0.780	0.001
*2	34 (14.7%)	494 (23.8%)	0.356	0.227-0.560	<0.001
3	81 (24.0%)	594 (24.0%)	0.823	0.595-1.139	0.240
4 or higher	89 (26.0%)	459 (21.0%)	0.821	0.612-1.101	0.188

Footnotes:
Model adjusted for: *age, gender, race/ethnicity, sexual orientation, religiosity, emotional help and support from family, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job*
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students (Used as the referent group.)
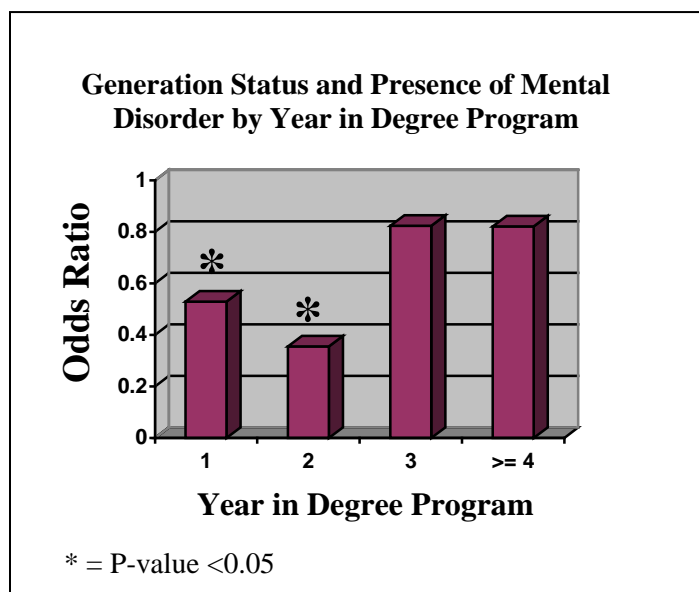* Indicates p<0.05

Figure 2: Generation Status and Presence of Mental Disorder by Year in Degree Program

Help-Seeking Behavior

Controlling for all covariates, generation status was not significantly associated

with help-seeking behavior (p=0.775). *[See Table 5 for results.]*

Table 5: Help-Seeking Behavior and Generation Status

Characteristics	FGCS N (%)	CGCS N (%)	AOR	95% CI	P-Value
Help-Seeking Behavior	216 (47.1%)	1711 (50.6%)	1.035	0.818-1.310	0.775

Footnotes:
Model adjusted for: *age, gender, race/ethnicity, sexual orientation, religiosity, emotional help and support from family, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job*
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students (Used as the referent group.)

Results of Post-Hoc Analyses

Post-hoc analyses were conducted to determine whether our findings were consistent with the theory of Social Networks and Social Support. With the exception of not controlling for "emotional help and support from family" in the post-hoc tests, the post-hoc analyses procedures were the same as those used for the main analyses. The covariates included in the post-hoc analyses were: age, gender, race/ethnicity, sexual orientation, religiosity, current financial situation, past financial situation, time spent doing homework, and time spent at a paid job. The results of the post-hoc analyses are presented.

Mental Disorders and Generation Status

Controlling for covariates, students' generation status was significantly associated with screening positive for anxiety. Specifically, first-generation students were 32.8% less likely to screen positive for anxiety than continuing-generation students (AOR=0.672; 95%CI=0.541, 0.834; p=<0.001). Similarly, generation status was significantly associated with screening positive for depression, with first-generation students being 23.7% less likely to screen positive for depression than continuing-generation students (AOR=0.763; 95%CI: 0.641, 0.909; p=0.003). Generation status was significantly associated with suicide ideation. Specifically, first-generation college students were 30.4% less likely to have seriously thought about suicide in the past 12 months than continuing-generation students (AOR=0.696; 95%CI=0.533, 0.909; p=0.008). Planning to commit suicide was not significantly associated with generation

status (p=0.809). Attempting suicide was also not significantly associated with

generation status (p=0.092). *[See Table 6 for results.]*

Mental Health and Generation Status

Controlling for covariates, generation status was not significantly associated with

screening positive for flourishing (p=0.991). However, generation status was

significantly associated with languishing. Specifically, first-generation students were

41.6% less likely to screen positive for languishing than continuing-generation students

(AOR=0.584; 95%CI = 0.406, 0.841; p=0.004). *[See Table 6 for results.]*

Table 6: Post-Hoc Analyses - Association between Mental Disorders, Mental Health, and Generation Status

Characteristics	FGCS N (%)	CGCS N (%)	AOR	95% CI	P-Value
Mental Disorder					
*Anxiety (Panic/GAD)	128 (9.9%)	1096 (11.8%)	0.672	0.541-0.834	<0.001
*Any Depression	225 (17.3%)	1637 (17.5%)	0.763	0.641-0.909	0.003
*Anxiety and/or Depression	274 (21.2%)	2119 (22.9%)	0.720	0.612-0.846	<0.001
Suicidality					
*Suicide Ideation	77 (6.0%)	687 (7.5%)	0.696	0.533-0.909	0.008
Suicide Plan	21 (1.6%)	178 (1.9%)	0.940	0.571-1.550	0.809
Suicide Attempt	16 (1.2%)	63 (0.7%)	1.744	0.914-3.327	0.092
Mental Health					
Flourishing	632 (49.3%)	5092 (55.6%)	1.001	0.873-1.147	0.991
*Languishing	46 (3.5%)	326 (3.4%)	0.584	0.406-0.841	0.004

Footnotes:
Model adjusted for: *age, gender, race/ethnicity, sexual orientation, religiosity, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job*
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students (Used as the referent group.)
* Indicates p<0.05

Help-Seeking Behavior

Controlling for covariates, generation status was not significantly associated with

help-seeking behavior (p=0.849). *[See Table 7 for results.]*

Table 7: Post-Hoc Analyses - Help-Seeking Behavior and Generation Status

Characteristics	FGCS N (%)	CGCS N (%)	AOR	95% CI	P-Value
Help-Seeking Behavior	216 (47.1%)	1711 (50.6%)	1.023	0.811-1.291	0.849

Footnotes:
Model adjusted for: *age, gender, race/ethnicity, sexual orientation, religiosity, current financial situation, financial situation growing up, time spent doing homework, and time spent at a paid job*
FGCS = First-Generation College Students
CGCS = Continuing-Generation College Students (Used as the referent group.)

DISCUSSION

The findings from our study confirm that first-generation college students do in fact differ from continuing-generation students on a variety of socio-demographic characteristics. This particular finding is not unique as it is consistent with previous studies and published literature examining first-generation college students (Terenzini et al., 1996). In our sample, the majority of first-generation students identified as minorities (i.e., non-White), were generally older in age, and more likely to be female, when compared with continuing-generation students.

Beyond basic demographic characteristics, our study reveals that first-generation college students are apt to face more challenges, barriers, and stressors than their continuing-generation peers. Particularly, first-generation students experience greater financial difficulties (both currently and while growing up), receive less emotional support from their families, and spend more time working at a paid job and less time on homework, when compared to continuing-generation students. This finding is consistent with previous work on first-generation students, which has recorded that first-generation students generally earn lower grades than continuing-generation students during college (Pascarella et al., 2004). As well as handling rigorous college coursework, first-generation students are working greater numbers of hours per week, leading to fewer hours spent on homework, thus subsequently leading to lower academic performance. We theorize that first-generation students may be spending fewer hours per week doing homework because they are using a substantial portion of their time to work at a paid job in order to support their college education. Most likely because first-generation college

students are not as financially stable as continuing-generation students, first-generation students need to work more hours, which leaves them less time for homework.

In addition to work and school stresses, many first-generation students are not receiving the emotional help and support they need from their families. In our study, lower percentages of first-generation students strongly agreed and agreed to receiving emotional support from their family, while conversely, a greater percentage of first-generation students strongly disagreed that they receive the emotional support they need from their families, when compared to continuing-generation students. These conditions are stressors which first-generation students must contend with, in addition to the normal and expected stressors that virtually all college students experience as they adjust to college. Thus, the first study hypothesis was upheld. Not only do first-generation college students differ from continuing-generation students on socio-demographic factors, they differ in such a way that first-generation students face and endure more stressors and challenges than continuing-generation students. This finding is congruent with already published literature on first-generation students (Pascarella et al., 2004; U.S. Department of Education, National Center for Education Statistics, 2001).

Acknowledging that first-generation students encounter more barriers and stressors as they pursue their college degree, we hypothesized that first-generation students would also express higher rates of anxiety, depression, suicidal behavior, poor mental health, and lower rates of positive mental health as a result of the challenges they face. However, our study findings did not support these hypotheses. Rather than experiencing higher rates of anxiety, depression, suicidality, and poor mental health compared to continuing-generation students, first-generation students actually had lower

rates of these measures. With only the exception of suicide attempt, first-generation students in our sample either did not differ from or were less likely than continuing-generation students to screen positive on our measures of emotional and mental distress. Specifically, first-generation students were less likely to have anxiety, depression, suicide ideation, and be languishing than continuing-generation students. They did not differ from continuing-generation students in making suicide plans and flourishing.

The fact that first-generation students are experiencing greater stressors and challenges, yet their mental and emotional health are similar to or even better than continuing-generation students when these factors are made comparable, indicates that something about being a first-generation student actually protects students from having poor emotional and mental health during college. We theorize that this protective factor is the resiliency of first-generation students.

Resiliency is generally defined as the ability of a person to recover from or adapt to adverse and challenging events, life changes, and life stressors (National Research Council and Institute of Medicine, 2009). As we have previously discussed, first-generation students come from homes and backgrounds where they are more likely to be exposed to adverse and challenging life events and stressors, even before they begin attending college (Terenzini et al., 1996). First-generation students who have successfully made it to college must, therefore, be strong, hardworking, focused, and determined individuals who have been able to adapt to their challenging life situations and overcome difficult life events in order to even make it to college. The ability of these students to overcome educational challenges within their homes and strive to achieve admission to a university says something about the agency of their resiliency. Once in

college, this resiliency may serve to shield first-generation students from developing anxiety, depression, and poor mental health, which may be a result of the greater stressors they face while pursuing their degree. In essence, resiliency in first-generation students protects them against anxiety, depression, suicidal ideation, and poor mental health.

Besides resiliency, another possible explanation for less mental disorders and poor mental health among first-generation students may be that first-generation students are less likely to recognize, acknowledge, or even admit to experiencing mental health issues. Therefore, because first-generation students are less likely to acknowledge these problems, they are subsequently less likely to report them.

The only indicator of emotional and mental health for which first-generation students were at risk for was suicide attempt. In fact, first-generation students had about double the likelihood of attempting to commit suicide of continuing-generation students. This finding was quite surprising, especially considering that first-generation students were more than twenty percent *less likely* to have thoughts about suicide, and did not differ from continuing-generation students on planning to commit suicide. Additionally, first-generation students were less likely to experience anxiety and depression than continuing-generation students. If our results had revealed that first-generation students were at risk for poor emotional health or a mental disorder, then the increased risk for suicide attempt would have been comprehensible. However, this was not so. It is possible that, perhaps, the incidents of suicide attempts reported among first-generation students may actually be spurious events. Perhaps students reported other types of self-inflicted injuries as suicide attempts, even though they may not have been. Regardless, this finding is an interesting phenomenon that should be investigated in future studies.

Although our study design was a purely cross-sectional study where data were collected at one time point, we were still interested in assessing whether there was any evidence of a positive causal relationship between generation status, mental disorders (i.e., screening positive for either anxiety and/or depression) and poor mental health. We performed this analysis in an attempt to go beyond assessing mere associations to elucidate a potential casual relationship between generation status and mental and emotional health. We originally hypothesized that there would be evidence of a positive causal relationship between students' generation status and mental disorders, and poor mental health. If there was any evidence of a causal relationship in our analysis, then there would be a significant interaction effect between generation status, year in degree program, and mental disorders and/or poor mental health, indicating that rates of mental disorders and/or poor mental health increase with increasing exposure to college.

While we found no interaction effect for poor mental health, there was a significant interaction for mental disorder, with closer analyses revealing that first-generation students are less likely to screen positive for either anxiety and/or depression in the first and second years of their degree program than continuing-generation students. The protection was stronger among first-generation students who were in their second year of their degree program compared to those in the first year of their degree program. This observed trend aligns with the argument of resiliency of first-generation students. During the first year of their degree program, first-generation students are already resilient, so they are less likely to screen positive for either anxiety or depression. By the time they are in the second year of their degree program, they have adapted to the college environment and have established a routine. As a result, they become even more

protected from mental disorders and poor mental health. However, as continuing-generation students begin to fully adapt to the college environment (perhaps by their third year) the difference in poor emotional and mental health and generation status disappears for the remainder of students' academic program. It is also possible that the difference disappears because the less resilient continuing-generation students have now left college.

We found no difference in help-seeking behavior between first-generation and continuing-generation students, signifying that both student populations have similar rates of help-seeking behavior. Thus our final hypothesis was not supported. While the rates of help-seeking do not differ between the two groups, the rates are low for both. Essentially, less than one-half of first-generation students and only about one-half of continuing-generation students who felt like they needed help for their emotional or mental health problems actually sought any type of professional help for those problems. That means that about one-half of college students who feel that they need help for emotional problems are neither seeking nor receiving the mental health help they need. Ideally, we would like to see 100% of all students who felt they needed help for their emotional or mental health to also report that they had sought and received that help. These low rates of help-seeking behavior demonstrate the need for more work to be done in this area of mental health and call for public health interventions focused on increasing help-seeking behavior among college students.

The help-seeking behavior results reveal that when first-generation students acknowledge that they need help for their emotional or mental health problems, they are just as likely to get help as are continuing-generation students. Based on this, it is again

possible that first-generation students are less likely to recognize, acknowledge, or admit to any kind of distress in the first place. This could also explain why they have a lower likelihood of the adverse outcomes (due to under-reporting), but yet they show no greater likelihood of flourishing. Furthermore, this finding may also elucidate why first-generation students are at risk for attempting suicide; things could get so bad that a student might attempt suicide before he or she ever seeks help.

Our study findings were not consistent with the theory of Social Networks and Social Support. Post-hoc analyses of the data, without controlling for emotional help and support from family, revealed that first-generation students were either less likely to have adverse health outcomes, or not different from continuing-generation students on adverse health outcomes. In our post-hoc tests, first-generation students were less likely than continuing-generation students to screen positive for anxiety, depression, suicide ideation, and poor mental health. They did not differ from continuing-generation students with regards to planning to commit suicide, attempting suicide, and flourishing. Moreover, no difference in help-seeking behavior between first-generation and continuing-generation students was observed. By not controlling for emotional help and support in our post-hoc analyses, we allowed the "first-generation" variable to account for differences in emotional help and support. If our post-hoc analyses had shown that being a first-generation student was associated with having a mental disorder, poor emotional health, or an absence of help-seeking behavior, then we could infer that the lack of emotional help and support associated with being a first-generation student contributes to poor emotional and mental health, and less help-seeking behavior;

therefore, supporting the theory. However, since this was not what our analyses revealed, our findings are not supported by the theory of Social Networks and Social Support.

The present study has a few limitations. Since this study was an analysis of secondary data, we were limited in the choice and operational definition of variables of interest. For example, because the 2009 Health Minds Study only screened for current presence of anxiety and depression, and not other types of mental disorders, we could only investigate these two measures of mental disorders. As a result, we were unable to assess other mental disorders to see if they are also associated with generation status. Additionally, the HMS captured only one type of social support – emotional support. It did not inquire about other types of support such as informational support and tangible or instrumental support. Therefore, our results only reflect emotional support. Another limitation of this study comes from the cross-sectional dataset. Because we only have data collected from one point in time, causality between our independent and dependent variables cannot be determined; we can only assess associations between generation status and our dependent variables of interest. We cannot conclude that being a first-generation student *causes* an individual to be protected from mental disorders and poor mental health, or conversely, that being a continuing-generation student *causes* an individual to develop mental disorders and poor mental health. We can only conclude that an association exists between generation status and mental and emotional health. Lastly, the subjective, self-report nature of the questionnaire could be another source of limitation for our study. Because students self-reported all of the information in the study and there was no way to independently confirm the reported information, our study results could be biased due to demand characteristics.

Despite these limitations, our study had several strengths. First, the study utilized a large sample size of college students from institutions all over the country. This large sample size increased the statistical power of our analyses and allowed us to detect statistical differences with greater precision. Another strength of this study is the generalizability of the findings. Because the Healthy Minds Study used a random sampling technique to select study participants from diverse universities in the United States and appropriate weights were applied to the dataset in order to obtain a representative sample, the findings from this study can be generalized to all college students within the U.S. The existence of this study is a strength in of itself. As noted in the review of the literature, there are no known studies that have directly examined the emotional or mental health of first-generation college students. Because this study is essentially the first of its kind, it has implications for mental health and public health research.

This study will add to our current body of literature on first-generation college students and help to begin fill the immense gap in knowledge concerning their emotional and mental health. It is our hope that our work will inspire others to conduct more research that examine the mental health of first-generation college students and shed more light on how resiliency operates in these students. Knowledge gained from such research studies may then be utilized to develop programs and interventions that strive to promote positive emotional and mental health in first-generation college students.

Since this study is the first of its kind, future studies should go deeper and examine whether first-generation students are protected against other mental disorders such as substance use disorders, eating disorders, and psychotic disorders, for example.

Future studies should also employ quasi-experimental research designs, which would allow for a more valid determination of a causal link between generation status and students' emotional and mental health. Lastly, future studies examining the mental health of first-generation students should utilize a primary data collection approach. This would grant investigators greater control of the study measurement instruments, data collection procedures, and permit them to best operationalize and measure variables of interest.

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