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SNAKES AND SNAILS OR SUGAR AND SPICE? GENDER DIFFERENCES IN

STUDYING AND HELP-SEEKING BEHAVIORS IN THE COLLEGE CLASSROOM

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A THESIS APPROVED FOR THE

DEPARTMENT OF PSYCHOLOGY

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Abstract

College is a time of adjustment, particularly for first-year students. Although many students face challenges, research has suggested an increasing disparity in how well men and women adapt (Moore et al., 2010; Respondek et al., 2019). For example, women earn better grades and have higher retention and graduation rates relative to men (Duffin, 2021; Ewert, 2012; Marrs & Sigler, 2012). Although previous research has focused on gender differences in variables such as help seeking and study strategies, we hypothesize that masculine identity may be more useful in predicting academic success. The current study employed structural equation modeling (SEM) to determine the influence of masculine ideology as a moderator between academic outcomes and several variables that have previously been associated with academic success, such as mindset, imposter phenomenon, study habits and help-seeking. We found that masculine ideology significantly moderated the relationship between the imposter phenomenon and study strategies such that individuals who experience the imposter phenomenon and also endorse a traditional masculine ideology are more likely to adopt shallow study approaches than those low in traditional masculine ideology, who are more likely to use deep study approaches. Furthermore, masculine ideology significantly moderated the relationship between imposter phenomenon and help-seeking, such that those who endorse a traditional masculine ideology tend to use executive help-seeking methods or avoid help-seeking altogether. However, those who do not endorse a traditional masculine ideology tend to use instrumental help-seeking methods, perceive more benefits from help-seeking, and attend office hours and tutoring more frequently.

Keywords: intelligence mindset, imposter phenomenon, gender, study strategies, academic outcomes, masculine ideology

Snakes and Snails or Sugar and Spice? Gender Differences in Studying and Help-Seeking

Behaviors in the College Classroom

For many college students, their first year is a time of significant adjustment. Many are in an entirely new environment full of new experiences and expectations for how they perform academically. Students often find themselves needing to acclimate to the rigor and expectations of higher education (Moore et al., 2010; Respondek et al., 2019). They must adapt to the unfamiliar task of self-regulating their learning process (Biwer et al., 2020), which is crucial for the long-term academic achievement that ultimately leads to graduation (McDaniel et al., 2021; Tuckman & Kennedy, 2011). Though most students spend a significant amount of time adjusting to the new levels of academic rigor in the college environment, there have been well-documented differences in how successfully men and women are able to do this.

Research has identified patterns and found disparities in academic outcomes between males and females as early as middle school, with girls being more likely than boys to practice positive study strategies and perform well academically (Marrs & Sigler, 2012). Until recent years, however, men were far more likely than women to attend college and obtain a degree. This was likely due to women's social and cultural expectations as homemakers (Parker, 2015). As attitudes changed and society progressed, women began to pursue higher education at a greater rate, eventually earning college degrees at a rate similar to that of men. From 1940 to 2019, for example, the percentage of women in the U.S. with bachelor's degrees increased from 3.8% to 38.3% (Duffin, 2021). At the same time, an alarming new trend has been identified in the literature that suggests men may be struggling more than women to adapt to the demands of college (Rubin et al., 2018; Sax, 2008). Men have lower first-year retention rates (Conger &

Long, 2010; Nouroozifar, 2023; Severiens & ten Dam, 2012), are more likely to be placed on academic probation (Al-Alawi et al., 2023; James & Graham, 2010), and are less likely to graduate with their degree (Ewert, 2012; A. McDaniel & Phillips, 2018) relative to women. The U.S. Census Bureau statistics reported that the percentage of women who completed four or more years of college surpassed that of men in 2015 (Duffin, 2021), and according to the National Student Clearinghouse Research Center, the national enrollment in higher education as of spring 2022 stood at around 60% women (National Student Clearinghouse Research Center, 2022). The potential causes for this shift in the academic composition are likely varied and complex. Research has examined factors, such as knowledge of appropriate study strategies, beliefs about the malleability of intelligence, endorsement of traditional gender ideology, and the willingness to seek appropriate help when it is needed.

Are There Gender Differences in Study Strategies?

One common explanation for gender differences in academic success is that men and women use different study strategies (Ruffing et al., 2015). Many new students initially use study habits that are chaotic and largely inefficient, typically as a holdover from high school (McCabe, 2011; Soderstrom & Bjork, 2015). However, committing information to long-term memory requires a much more organized and systematic approach (Ayodele & Adebiyi, 2013). Not surprisingly, students who use more effective study strategies see greater academic success relative to students who have poorer study strategies (Khan, 2016). Therefore, if men are using poorer study strategies than women, this difference likely contributes to the observed gender differences in academic success (Marrs & Sigler, 2012).

Previous research has divided study habits into two categories: deep and surface/shallow approaches. Each of these involves a different level of engagement with, and motivation to learn,

the material (T. Brown & Murdolo, 2017; Ward, 2011). Deep study strategies involve going

beyond the information taught and required for class, often for the sake of satisfying a curiosity

sparked by something in the material. Students who use deep strategies have a genuine interest in

learning that transcends solely wanting to perform well and often find joy and satisfaction from

the learning process (Entwistle, 2010). For example, students who use the deep approach often

create connections between pieces of information across different topics and units, find value in

the information they're learning, and spontaneously apply that information to their everyday

experiences (Pugh, 2011). These students have higher overall grades, and experience lower rates

of academic burnout (Asikainen et al., 2020; T. Brown & Murdolo, 2016).

Surface, or shallow, study strategies are most often used when there is no real desire to

learn (Lindblom-Ylänne et al., 2019). Students who use surface strategies often rely on passive

learning techniques, such as rote memorization, and rereading lecture slides, notes, and their

textbook, for the sake of completing the assignment. These techniques often lead to them failing

to encode the information and effectively commit it to long-term memory. The use of surface

strategies has been linked to lower grades and higher rates of academic burnout relative to deep

study strategies (Asikainen et al., 2020; T. Brown & Murdolo, 2016).

According to previous literature, women are significantly more likely to rely on the deep

approach while studying, while men are more likely to use surface approaches (Marrs, 2016;

Marrs & Sigler, 2012; Noviana et al., 2020). Although the reasons for this pattern are varied and

complex, gender identity and adherence to cultural gender norms are significant contributors (Lei

& Lundberg, 2020). Starting as early as middle school, boys and girls are socialized differently in

their academic pursuits due to the emphasis on masculinity placed on boys (Chaffee et al., 2020).

For example, because females are now expected to attend college at higher rates than males, their

high school education is seen as preparing for the next step of their educational journey (i.e. college, graduate school, etc.). Alternatively, men's high school education is often targeted toward reaching a final point of completion before they enter the workforce (Fortin et al., 2015). The deep approach also requires higher levels of intrinsic motivation, which is important for a deeper understanding and connection to the material. Women tend to be more intrinsically motivated than men in their academic pursuits (Kuśnierz et al., 2020), which likely contributes to their employment of more effective, deep study strategies (Marrs, 2016).

Thus far, a pattern has emerged in which males employ less effective study strategies relative to females. If study strategies are predictive of academic success, educating male students about the importance of deep strategies should improve their academic performance. Unfortunately, a systematic review of the academic success literature on interventions focused on educating students about successful study strategies, and finding effective teaching styles, found that such interventions produce inconsistent results (Javornik & Klemenčič Mirazchiyski, 2023). One reason for this inconsistency is that many students persist in using the same study strategies that were successful in high school, even when they are told they are struggling academically and are taught more effective strategies for learning (Hattie, 2015). Additionally, because college students are increasingly responsible for regulating their own learning, they are expected to be proactive and seek out academic support when receiving objective failure feedback. However, gender differences persist in this area as well. For example, relative to women, men are less likely to use academic tutoring, visit during office hours, and ask for help during lectures when something is unclear (D. Brown et al., 2021; Taplin & Jegede, 2001). Unfortunately, it is clear that the solution to the academic gender gap is more complex than teaching students to use more effective study strategies.

Gender Differences in Mindset and the Imposter Phenomenon

There is a dominant belief held by students in the U.S. that academic success must appear to be effortless to be considered "acceptable" (Jackson & Dempster, 2009). Children are often praised for academic skills like high reading and math levels when they come naturally to the student. They are taught to believe that natural talent and aptitude are the ideal performance goal, rather than hard work and dedication to their studies. This idea of effortless achievement is one potential byproduct of the belief that intelligence is a fixed entity that is unable to be changed (Elliott & Dweck, 1988; Kumar & Jagacinski, 2006). Mindset theory (Dweck & Leggett, 1988) refers to the belief that individuals hold one of two mindsets: incremental (growth) or entity (fixed). These mindsets revolve around the malleability of personal attributes, such as intelligence. Whether an individual holds an incremental or entity mindset then influences their goal orientation and behaviors, which can ultimately affect academic achievement (Dweck, 1986; Kumar & Jagacinski, 2006; Liu, 2021).

Students who hold an incremental mindset see their intelligence as malleable. They believe that if they encounter information that they do not understand, they possess the ability to learn it and achieve their academic goals. Dweck (1986) suggests that those with incremental mindsets tend to adopt task-involving goals, where understanding the material is the goal, and success comes with effort. Thus, those with incremental mindsets are motivated to increase competence by achieving task mastery. In other words, they believe that they can work to increase their skill level on a particular task; they are able to grow and learn (Dweck, 1986). Entity theorists, on the other hand, tend to adopt fixed ability-based goals, where the motivation is a good performance on a task, rather than learning. Thus, those with an entity mindset are motivated to demonstrate competence (or avoid demonstrating incompetence) by outperforming

others (Dweck, 1986; Kumar & Jagacinski, 2006; Liu, 2021). This attitude towards learning makes their goal in academia to avoid upset and embarrassment, rather than to learn or master content. Their tendency to define competence in terms of their success relative to their peers may cause those with an entity mindset to be more vulnerable to the idea of effortless achievement (Kumar & Jagacinski, 2006; Nicholls, 1984). This in turn may cause them to question the extent of their academic ability if their studies require effort to succeed.

    Academic challenges can be especially problematic for individuals with an entity mindset. Their fixed-intelligence beliefs may lead to instances of feeling like an imposter, or like they do not belong (Noskeau et al., 2021). This experience has been labeled the *imposter phenomenon*, which is an internal experience of intellectual fraudulence (Clance & Imes, 1978). Research suggests that those who have an entity mindset are more likely to experience the imposter phenomenon because they see their capabilities as fixed and unchangeable (Kenneally et al., 2023). In other words, individuals with an entity mindset are often more discouraged when facing academic challenges because they do not believe themselves capable of expanding their intelligence to meet intellectual challenges (Noskeau et al., 2021).

    Although there are no gender differences in the tendency to adopt an entity mindset or experience the imposter phenomenon, there are gender differences in how the imposter phenomenon is expressed. Research suggests that women who experience the imposter phenomenon may be especially motivated by a fear of failure (Fried-Buchalter, 1997; Kosakowska-Berezecka et al., 2017; Perander et al., 2020). The imposter phenomenon is correlated with belief in one's ability, and studies show that women tend to possess a lower belief in their abilities, in part because of societal attitudes (Kumar & Jagacinski, 2006; Vaughn et al., 2020). Women who experience the imposter phenomenon often feel a need to outperform their

classmates or to "prove themselves" to show that they belong in a particular academic setting. In other words, women are more likely to adopt perfectionism and work harder because societal standards expect them to prove their worth wherever they are (Jackson & Dempster, 2009).

The expression of the imposter phenomenon in men is largely dependent on their gender ideology. Men who do not endorse traditional masculine gender roles (henceforth referred to as non-traditional masculine identifying, or NTMI, men) tend to display more adaptive study habits and help-seeking behaviors (Caselman et al., 2006; Cokley et al., 2015), similar to those seen in women. Traditional masculine identifying (TMI) men, on the other hand, tend to cope with the imposter phenomenon by adopting ability-avoidance goals to hide from the information that they do not know (Fried-Buchalter, 1997). Ability-avoidance goals are driven by the desire to avoid failure, rather than a desire to learn. According to these standards, academic ability should appear effortless, and male students should maintain a "cool" persona and avoid interactions that may damage that reputation. This can manifest as only answering in-class questions they are certain about, letting others handle the difficult tasks on group projects, selecting less challenging coursework, and failing to seek help when they are struggling with information (Wimer & Levant, 2011).

Gender Differences in Help-Seeking Behaviors

When women encounter academic difficulties, they tend to seek help from any and all potential sources (Doebling & Kazerouni, 2021). In contrast, masculine ideology, particularly in the United States, teaches men that help-seeking is a weakness that can invalidate their masculinity (Wimer & Levant, 2011). Due to this difference in socialization, TMI men can become more likely to avoid seeking help in their academic pursuits. This remains true even when they have received objective feedback from their instructors that they are not doing well, or

even failing, their course (Doebling & Kazerouni, 2021). Research has found that TMI men tend to be especially concerned with being accepted by their peers rather than their instructors, thus, they seek support primarily within their friend groups (Kessels & Heyder, 2020). For TMI men, peer support becomes important because they are given validation from those around them despite how poorly they may be performing academically (Perander et al., 2020). This strategy is successful because they are often told by their peers that the problem lies within the class/professor and not themselves, consistent with typical self-serving bias behaviors. This sort of validation eases the cognitive dissonance they feel when their academic success is no longer effortless and maintains their "cool guy" persona amongst their peers (Jackson & Dempster, 2009).

In contrast, NTMI men are more likely to seek help when encountering academic challenges in comparison to TMI men. They typically do not place the same emphasis on self-reliance and dominance, thus they are less likely to believe that asking for help undermines their masculinity (Marrs, 2016; Severiens & ten Dam, 2012; Wimer & Levant, 2011). Along with peer support, NTMI men seek support from their professors because they get validation by doing well and continuing to succeed academically (Caselman et al., 2006). Due to this difference in help seeking attitudes, studies have shown that NTMI men are more academically successful than men who ascribe to traditional masculine ideologies. For example, research has found that negative attitudes and avoidance of help-seeking in high-masculinity individuals were correlated with overall lower course grades and GPA (Kessels & Steinmayr, 2013). Additionally, a study on help-seeking and academic retention found that traditional masculine norms significantly predicted avoidance in help-seeking, and increased drop-out rates (Schwab, 2018).

Though previous research has studied each of these variables independently, a full model containing each has not been previously proposed. Additionally, much of the previous research on these variables involve small sample sizes, artificial lab-based learning tasks, or the use of only one academic outcome variable (Javornik & Klemenčič Mirazchiyski, 2023). The current study will uniquely contribute to the literature because it overcomes many of these limitations by looking at real-world academic outcomes such as the student's GPA, final grade in their psychology course, and academic retention outside of the traditional lab setting with a large sample size of traditional college students.

Study Description and Hypotheses

The current study expands on previous findings by examining whether affective variables such as academic mindset, imposter phenomenon, and traditional masculine ideology (e.g. TMI vs. NTMI) predict study habits and help-seeking behaviors (e.g., attendance in office hours, tutoring, taking advantage of extra credit opportunities), and how those in turn affect a variety of academic outcomes (e.g., individual course grades, GPA, retention). The proposed model hypothesizes that those with an entity mindset are more likely to experience the imposter phenomenon than those with an incremental mindset. Additionally, of those individuals experiencing the imposter phenomenon, those who adhere to TMI were hypothesized to use greater maladaptive study habits and help-seeking behaviors than NTMI individuals. It is further hypothesized that the use of maladaptive study habits and help-seeking behaviors likely leads to poorer academic outcomes when compared to individuals who are adopting positive study habits and help-seeking behaviors.

Method

Participants

A total of 1,382 students from a large midwestern university participated in this study in return for credit toward a class research requirement. Of the original sample, 314 participants were excluded for failing to answer at least three of four embedded attention checks, leaving a final sample of 1,068 participants. The gender of the participants included 73.6% female identifying, 25.1% male-identifying, 0.9% non-binary, and 0.3% who preferred not to disclose. All participants were between 18 and 31 years of age ($M = 18.94$, $SD = 1.59$), and the majority were either first year (65.3%) or second year (23%) students. Of the final sample of participants, 78.3% of the respondents identified as White (Non-Hispanic); 10.2% identified as Asian; 16.1% as Hispanic or Latino; 9.0% as Native American or Alaskan Native; 8.3% as Black or African American; 3.3% identified as Other; 1.5% declined to answer; and 0.6% identified as Hawaiian/Pacific Islander.

Measures

Help-Seeking Behaviors

Psychology Help-Seeking Scale. The Psychology Help-Seeking Scale (PHSS) is a 36item measure that uses an 8-point Likert-type scale from 1 (*most definitely false*) to 8 (*most definitely true*) to assess help-seeking behaviors (Pajares et al., 2004). The original scale was written to target a computer science course; we revised the items to focus on help-seeking behaviors and attitudes within the introductory psychology course. The PHSS includes four subscales: Instrumental Help-Seeking, Executive Help-Seeking, Avoidance of Help-Seeking (reverse-scored), and Perceived Benefits of Help-Seeking.

The first help-seeking subscale consists of ten items designed to measure instrumental help-seeking (α = 0.88). Instrumental help-seeking involves assistance that aids the student in solving the problem independently (Sideridis & Stamovlasis, 2016). An example item from this subscale is "When I ask my psychology teacher for help, I prefer to be given hints or clues rather than the answer."

The second help-seeking subscale consists of ten items designed to measure executive help-seeking (α = 0.94). This form of help-seeking occurs when the student is aiming for someone to answer the question, or solve the problem, for them (White & Bembenutty, 2013). An example item from this subscale is "When I ask the teacher for help in this class, I prefer that the teacher do the work for me rather than explain to me how to do it."

The third help-seeking subscale consists of ten items designed to measure avoidance of help-seeking (α = 0.92). A sample item from this subscale is "I don't ask for help in this class even when the work is too hard to solve on my own."

The fourth help-seeking subscale consists of seven items designed to measure the perceived benefits of help-seeking (α = 0.89). A sample item from this subscale is "Asking questions makes this class more interesting for me."

Behavioral Help-Seeking. In addition to the PHSS, help-seeking was assessed using real-world behavioral measures that were collected during the semester of study participation. These measures include data obtained by the University tutoring center for visits to psychology tutoring sessions and study reviews. Additionally, graduate teaching assistants and the course coordinator tracked students' office hour visits, including the reason for their visit (i.e. grade related vs. content questions).

Masculinity

Conformity to Masculine Norms Inventory. The Conformity to Masculine Norms

Inventory (CMNI-30) is a 30-item measure answered on a six-point Likert-type scale that ranges

from 1 (*strongly disagree*) to 6 (*strongly agree;* Levant et al., 2020)*.* The scale is a shortened

version of the original 94-item scale (Mahalik et al., 2003), and was given to all participants,

regardless of gender identity because research finds that both men and women can be high in

traditional masculine ideologies (McDermott et al., 2021). The CMNI-30 has 10 factors:

Emotional Control, Winning, Playboy, Violence, Heterosexual Self-Presentation, Pursuit of

Status, Primacy of Work, Power Over Women, Self-Reliance, and Risk-Taking.

Factor 1, labeled Emotional Control, includes three items that capture the tendency to

withhold feelings and internalize them ($\alpha = 0.92$). An example item is "I tend to share my

feelings" (reverse-scored).

Factor 2, labeled Winning, includes three items that capture the desire to beat an

opponent and win as often as possible ($\alpha = 0.73$). An example item is "I will do anything to

win."

Factor 3, labeled Playboy, includes three items that capture feelings towards partners and

relationships ($\alpha = 0.80$). An example item is "I would find it enjoyable to date more than one

person at a time."

Factor 4, labeled Violence, includes three items that capture attitudes towards violence,

and whether or not it is ever warranted ($\alpha = 0.75$). An example item is "I think that violence is

sometimes necessary."

Factor 5, labeled Heterosexual Self-Presentation, includes three items that capture the need to appear heterosexual to their peers ($\alpha = 0.95$). An example item is "It would be awful if people thought I was gay."

Factor 6, labeled Pursuit of Status, includes three items that capture the importance and need for power ($\alpha = 0.65$). An example item is "Having status is not important to me" (reverse-scored).

Factor 7, labeled Primacy of Work, includes three items that capture the need to put their work and career above all else ($\alpha = 0.82$). An example item is "I need to prioritize my work over other things."

Factor 8, labeled Power Over Women, includes three items that capture the desired power dynamics of men being in charge of women ($\alpha = 0.81$). An example item is "I love it when men are in charge of women."

Factor 9, labeled Self-Reliance, includes three items that capture hyper independence ($\alpha = 0.78$). An example item is "It bothers me when I have to ask for help."

Factor 10, labeled Risk-Taking, includes three items that capture the enjoyment and tendency to take risks ($\alpha = 0.82$). An example item is "I put myself in risky situations."

Imposter Phenomenon

Clance-Imposter Phenomenon Scale. The Clance-Imposter Phenomenon Scale (CIPS) measures perceived incompetence as well as the inability to perform well and achieve in an academic setting. Using a 20-item scale ($\alpha = 0.92$; Clance, 1985), participants rate their answers on a 5-point Likert-type scale that ranges from 1 (*not true at all*) to 5 (*very true*). Higher scores are indicative of more frequent imposter phenomenon experiences. Example items include: "I have often succeeded on a test or task even though I was afraid that I would not do well before I

undertook the task;" "I rarely do a project or task as well as I'd like to do it;" and "When I have succeeded something and received recognition for my accomplishments, I have doubts that I can keep repeating that success."

Mindset

Growth Mindset Scale. The Growth Mindset Scale (GMS) uses a three-item Likert-type scale to ranging from 1 (strongly agree) to 6 (strongly disagree; $\alpha = 0.91$) to measure the belief that intelligence is malleable (Dweck et al., 1995) . Higher scores on the GMS are indicative of a growth (incremental) mindset, or the idea that intelligence is fluid and changeable. Example items include: "You have a certain amount of intelligence, and you can't really do much to change it;" and "You can learn new things, but you can't really change your basic intelligence."

Study Strategies

Revised Study Process Questionnaire-Two Factor. The Revised Study Process Questionnaire-Two Factor (R-SPQ-2F) is a 20-item scale used to measure students' deep and surface learning approaches (Biggs et al., 2001). The items are scored on a 5-point Likert-type scale ranging from 1 (*never or only rarely true*) to 5 (*always or almost always true*). This measure includes two factors (deep approach and surface approach); higher scores indicate greater endorsement of each study strategy.

The first study process factor consists of ten items used to measure deep study approaches and motivations that involve deep engagement with the material ($\alpha = 0.84$). A sample item includes: "I find most new topics interesting and often spend extra time trying to obtain more information about them."

The second study process factor consists of ten items used to measure surface study approaches and motivations that involve shallow engagement with the material to complete

assignments ($\alpha = 0.80$). A sample item includes: "I aim to pass the course while doing as little work as possible."

Academic Outcomes

Academic outcomes were assessed with three behavioral measures: (1) the participant's final percentage grade in their introductory psychology course; (2) the participant's overall GPA (including transfer/AP credit but prior to the application of any academic forgiveness) for the semester in which they participated in the study; and (3) the participant's academic retention status between the semester they participated in the study and the subsequent semester.

Procedure

After signing up in SONA, participants were redirected to Qualtrics to indicate informed consent and fill out the survey, which took approximately 60 minutes to complete. Participants' responses to several embedded attention check items were reviewed and credit was granted within the experiment management system accordingly. Participants were required to correctly respond to three of the four attention checks in order to receive credit and have their data included in the study.

Once the participation window closed, names and ID numbers were pulled from the data set and given to the Director of Assessment and Senior Systems Analyst to obtain GPA and retention information. At the conclusion of the semester, the director of the Action Tutoring Center was contacted to obtain data on tutoring visits. Finally, logs of office hour visits to the course professor and graduate assistants were compiled.

Results

Psychometric Analysis

The goal of the current study was to determine the influence of mindset, imposter phenomenon, and masculine ideology on study habits and help-seeking, which in turn was hypothesized to influence a variety of academic outcomes. To determine the nature of these relationships, Structural Equation Modeling (SEM) was used to test the fit of the models listed in Appendix A. Each of the participants' scores was transformed into new variables representing their totals on each of the above measures (or their specific subscales or factors) using R version 4.2.1. Reversed scored items are indicated in the appendices for each measure, alongside measure subscales and factors. All further analyses were performed using R version 4.2.1.

Before further analyses were conducted, a confirmatory factor analysis (CFA) was done for each variable included in the 'Academic Outcomes' latent variable because the factor was comprised of items with different measurement scales. Conducting the CFA served as confirmation that the factor model was a good fit and was functioning as intended. While the model fit for the CFA was good with an RMSEA < 0.05 and an SRMR < 0.08, it was found that retention was not a significant portion of that model. Another CFA was run removing retention as a variable, and the model fit was still good with an RMSEA < 0.05 and an SRMR < 0.08, and both GPA and final grade were significant in that model. To better capture significant academic outcome predictors, academic outcomes will be quantified by a latent variable that includes GPA and final grade in PSY 1113.

Additionally, the "Help-Seeking" latent variable included both previously validated measures as well as real-world measures. To ensure that the combination of these different methods of measurement could realistically be combined into one latent factor, a CFA was conducted. The results of the CFA revealed that the model fit was good with an RMSEA of <

0.05 and an SRMR of < 0.08. Additionally, each variable included in this factor significantly contributed to the entire latent factor, so all variables were kept.

Missing Data. Missing data was handled using Full Information Maximum Likelihood (FIML) in R. This method was chosen because FIML uses all available data, which can improve statistical power and reduce bias compared to deletion methods. Additionally, FIML assumes that the data are missing at random (MAR), a less restrictive assumption than missing completely at random (MCAR) and provides consistent and efficient parameter estimates under the MAR assumption. Handling missing data is a crucial step in structural equation modeling (SEM) as it can impact the accuracy and validity of the results; thus, this method was chosen based on expert recommendations (Cham et al., 2017).

Statistical Analysis

Primary Model

Using the hypothesized model presented in Figure 1 (see Appendix A, Figure 1), the factor extraction method implemented was maximum likelihood in R using the *lavaan* package. This model was comprised of both observed and latent variables. The observed variables included "Mindset," "Imposter Phenomenon," and "Masculine Ideology." Latent variables included "Study Habits," "Help-Seeking," and "Academic Outcomes." The "Study Habits" factor was comprised of scores on the deep ($\beta = 1.000$, $p < 0.001$) and strategic ($\beta = 1.976$, $p < 0.001$) subscales from the R-SPQ-2F scale. The "Help-Seeking" factor was comprised of the executive ($\beta = 1.000$, $p < 0.001$), instrumental ($\beta = -0.850$, $p < 0.01$), avoidance ($\beta = 0.985$, $p < 0.01$), and benefit ($\beta = -0.717$, $p < 0.05$) subscales from the PHSS scale, as well as frequency of tutoring visits ($\beta = -0.089$, $p < 0.05$), and office hour visits ($\beta = -0.165$, $p < 0.05$). The "Academic Outcomes" factor was comprised of GPA ($\beta = 1.000$, $p < 0.001$) and final grade ($\beta =$

26.229, $p < 0.001$).

      Absolute and relative goodness of fit indices were used to evaluate the fit of each model. These thresholds and criteria were chosen based on expert recommendations and previous measurements in variance tests run on the S-Five (Vitoratou et al., 2022). The internal consistency of the S-Five factors was evaluated by Cronbach alpha (satisfactory value > .07). The evaluation of model-to-data-fit indices of Chi-square = 12101.968, degree of freedom = 4067, $p < 0.001$, RMSEA = 0.043, TLI = 0.824, CFI = 0.83, and SRMR = 0.093 showed that the proposed model was a good-to-moderate fit for the data.

      Although model fit indices showed good to moderate fit, model fit can be negatively impacted when there is a high number of observed variables (Kang & Ahn, 2021). As such, path analysis was used to examine the direct relationships among each variable of the structural model. Figure 1 illustrates the parameter estimates for the structural model (see Appendix A, Figure 1).

      As shown in the figure, entity mindset significantly predicted an increase in students' experiences of the imposter phenomenon ($\beta = -1.383$, $p < 0.01$).

      The imposter phenomenon was a significant predictor of study techniques, such that increased imposter phenomenon experiences were associated with increased use of surface study techniques and decreased use of deep study techniques ($\beta = 0.005$, $p < 0.001$). The relationship between imposter phenomenon and study techniques was strengthened when masculine ideology was included as a moderator ($\beta = 0.619$, $p < 0.001$). For individuals experiencing the imposter phenomenon, those who endorse a traditional masculine ideology were found to have increased scores on measures of surface study approaches and decreased scores on deep study approaches relative to individuals who expressed a non-traditional masculine ideology.

The imposter phenomenon was not a significant predictor of help-seeking behaviors (β = 0.004, $p > 0.05$). However, masculine ideology fully moderated the relationship such that the relationship between the imposter phenomenon and help-seeking became significant when including masculine ideology (β = 0.619, $p < 0.05$). For individuals experiencing the imposter phenomenon, those high in a traditional masculine ideology were found to have increased scores on measures of executive help-seeking and avoidance of help-seeking and decreased scores on instrumental help-seeking and benefits of help-seeking; they also visited the tutoring center and office hours less often relative to individuals who scored lower in traditional masculine ideology.

Help-seeking was found to be a significant predictor of academic outcomes, wherein help-seeking was correlated with lower GPA and final grade (β = -0.139, $p < 0.05$). Individuals who scored higher on measures of executive help-seeking and avoidance of help-seeking, and attended office hours and tutoring less frequently, were significantly likely to have lower GPAs and final grades.

Study habits were not found to be a significant predictor of academic outcomes (β = 0.136, $p > 0.05$).

Alternate Models

To determine the relative importance of masculine ideology above and beyond gender identity as a moderator for the predictors of help-seeking and study habits, another model was analyzed. This model was comprised of the same observed and latent variables as the original model but substitutes gender (male/female) in place of masculine ideology (see Appendix A, Figure 2). The observed variables include "Mindset," "Imposter Phenomenon," and "Gender." Latent variables included "Study Habits," "Help-Seeking," and "Academic Outcomes." The

"Study Habits" factor was comprised of deep ($\beta = 1.000$, $p < 0.001$) and strategic ($\beta = 23.294$, $p < 0.001$) subscales from the R-SPQ-2F scale. The "Help-Seeking" factor was comprised of the executive ($\beta = 1.000$, $p < 0.001$), instrumental ($\beta = -0.640$, $p < 0.001$), avoidance ($\beta = 2.087$, $p < 0.001$), and benefit ($\beta = -1.335$, $p < 0.001$) subscales from the PHSS scale, as well as tutoring visits ($\beta = -0.110$, $p < 0.001$), and office hour visits ($\beta = -0.246$, $p < 0.001$). The "Academic Outcomes" factor was comprised of GPA ($\beta = 1.000$, $p < 0.001$), and final grade ($\beta = 26.128$, $p < 0.001$).

When using the same analysis technique and fit indicators, it was found that the fit of this model was poor. Among those fit indices were values of Chi-square $= 2710.075$, degree of freedom $= 422$, $p < 0.001$, RMSEA $= 0.072$, TLI $= 0.682$, CFI $= 0.711$, and SRMR $= 0.09$. A new path model analysis was conducted using imposter phenomenon to predict help-seeking, including gender (male/female) as a moderator rather than masculine ideology. Unlike the hypothesized model, this model found that imposter phenomenon significantly predicted help seeking ($\beta = 0.010$, $p < 0.001$). However, in contrast to the hypothesized model, the inclusion of gender did little to moderate this relationship ($\beta = -0.009$, $p < 0.01$), even weakening the relationship slightly.

Imposter phenomenon was a significant predictor of study habits ($\beta = 0.000$, $p < 0.001$), and in contrast to the previous model, the inclusion of gender did little to moderate this relationship ($\beta = -0.009$, $p < 0.01$), even weakening the relationship slightly.

Similarly to the primary hypothesized model, help-seeking was found to be a significant predictor of academic outcomes ($\beta = -0.231$, $p < 0.001$). Additionally, study habits were not a significant factor in predicting academic outcomes ($\beta = 0.116$, $p > 0.05$).

Finally, to determine the relative importance of masculine ideology as a variable in the hypothesized model, one final model without gender or masculine ideology was analyzed (See Appendix A, Figure 3). This model was comprised of the same observed and latent variables as the previous models, with the exception of the removal of both masculine ideology and gender. The observed variables include "Mindset," and "Imposter Phenomenon." Latent variables included "Study Habits," "Help-Seeking," and "Academic Outcomes." The "Study Habits" factor was comprised of deep ($\beta = 1.000$, $p < 0.001$) and strategic ($\beta = 17.252$, $p > 0.05$) subscales from the R-SPQ-2F scale. The "Help-Seeking" factor was comprised of executive ($\beta = 1.000$, $p < 0.001$), instrumental ($\beta = -0.548$, $p < 0.01$), avoidance ($\beta = 2.387$, $p < 0.001$), and benefit ($\beta = -1.386$, $p < 0.001$) subscales from the PHSS, as well as tutoring visits ($\beta = -0.102$, $p < 0.01$), and office hour visits ($\beta = -0.239$, $p < 0.001$). The "Academic Outcomes" factor was comprised of GPA ($\beta = 1.000$, $p < 0.001$), and final grade ($\beta = 26.799$, $p < 0.001$).

Fit indices of Chi-square = 2706.652, degree of freedom = 400, $p < 0.001$, RMSEA =0.074, TLI = 0.680, CFI = 0.706, and SRMR = 0.093 revealed poor model fit. When conducting a path analysis of the model, it was revealed that, in contrast to the primary hypothesized model, study habits were not significantly predicted by imposter phenomenon ($\beta = 0.001$, $p > 0.05$). In contrast to the primary hypothesized model, imposter phenomenon was a significant predictor of help-seeking ($\beta = 0.011$, $p < 0.001$). Finally, similarly to the hypothesized model, help-seeking was a significant predictor in academic outcomes ($\beta = -0.242$, $p < 0.001$), but study habits were not ($\beta = 0.082$, $p > 0.05$).

Discussion

The hypothesized model (see Appendix A, Figure 1) illustrated predictive pathways alongside a good-to-moderate model fit. Significant individual paths indicate the model is

effectively explaining some of the key psychological processes involved in the students' academic behaviors and attitudes. This helps to provide a strong theoretical framework for understanding the study variables, and how they are interacting. The added complexity of using of real-world data and a large number of observed variables may have contributed to a decline in goodness-of-fit indices (Kang & Ahn, 2021). However, this model still holds substantial explanations and relationships within its pathways.

Entity Mindset and the Imposter Phenomenon

An examination of the model's pathways reveals that entity mindset is a significant predictor of the imposter phenomenon. These results support hypothesis one, suggesting that participants who viewed intelligence as fixed were more prone to feelings of intellectual fraudulence compared to those who perceived intelligence as malleable. This aligns with prior research indicating that entity theorists adopt performance goals centered on demonstrating competence rather than mastery-oriented learning goals (Dweck, 1986; Kumar & Jagacinski, 2006). Consequently, academic struggles can be particularly disheartening for entity theorists, especially when they encounter challenges that go beyond their perceived competencies (Kumar & Jagacinski, 2006; Nicholls, 1984). The results of this study align with findings in previous research, which has not uncovered gender differences in the prevalence of an entity mindset or the imposter phenomenon. However, gender differences have been reported in how these deeply held beliefs, and views of the self, are coped with.

Imposter Phenomenon as a Predictor of Help-Seeking

The path from the imposter phenomenon to help-seeking behaviors in the model revealed no direct relationship between feelings of imposter phenomenon and help-seeking behaviors. However, consistent with previous research and study hypotheses, the inclusion of masculine

ideology as a moderator revealed that TMI individuals exhibited higher propensities toward executive help-seeking and avoidance of assistance altogether. This aligns with previous research showing that TMI individuals are victims of the idea of effortless achievement, leading to maladaptive help-seeking behaviors. By avoiding help-seeking or seeking help solely to obtain answers rather than learning how to solve problems, TMI individuals do little to combat feelings and experiences of the imposter phenomenon. Additionally, their entity mindset scores suggest that they do not believe there is anything they can do to improve their intelligence regardless. This problem becomes pervasive in their academic experiences and is reflected in their academic outcomes, as their coping methods involve avoiding situations that show incompetence, rather than truly engaging in learning.

In contrast, supporting the study hypotheses and previous research, NTMI individuals were significantly more likely to engage in instrumental help-seeking, visit office hours and tutoring more often, and indicate a better understanding of the benefits of help-seeking. Their help-seeking habits are methods that teach them how to find the correct solutions independently, rather than relying on others to provide solutions. Additionally, by handling their experiences of the imposter phenomenon in a more beneficial way, effects can be seen in their academic outcomes, as they are motivated to avoid showing their incompetence through learning the material and avoiding failure.

Imposter Phenomenon as a Predictor of Study Strategies

In addition to these individuals being high on self-reliance, and avoiding help, the current study found that TMI individuals often view studying as a task-completion process to pass a course (Lei & Lundberg, 2020), favoring surface strategies like rote memorization, highlighting definitions, and rereading textbooks and notes (Asikainen et al., 2020; T. Brown & Murdolo,

2016). As first-year students, much of the sample likely gravitates toward surface approaches, but this tendency is especially pronounced for those high in traditional masculine ideology. This supports the study hypothesis that TMI individuals would be more likely to use surface approaches in their studies while neglecting the use of deep approaches. In contrast, NTMI individuals engage in deeper study processes, including behaviors such as concept mapping and elaboration. The findings of this study align with previous research on the differences in how TMI and NTMI individuals approach learning (Marrs, 2016; Marrs & Sigler, 2012; Noviana et al., 2020), suggesting that NTMI individuals approach studying with a genuine desire and motivation to learn, while TMI individuals gravitate toward approaches of studying that help them to complete assignments.

Taken as a whole, these findings suggest that many TMI individuals take on an attitude of competence over diligence, where their approach toward learning is largely based on doing the minimum work necessary to pass their classes. These individuals largely do not show interest in truly learning or engaging with information. Instead, they demonstrate behaviors that align with effortless achievement and place more of an emphasis on passing classes rather than learning material.

The Role of Masculine Ideology

These results emphasize the pivotal role of masculine ideology, above and beyond gender identity, in shaping academic coping mechanisms and outcomes. A traditional masculine ideology consistently influenced the methods of coping with feelings of imposter phenomenon through help-seeking and studying. In addition to the hypothesized model, an alternative model that included gender instead of masculine ideology was analyzed (see Appendix A, Figure 2).

The overall model results revealed that, alongside poor model fit, gender weakened the relationship between imposter phenomenon and help-seeking. Path analyses showed that gender was predicting women using instrumental help-seeking behaviors, as well as visiting office hours and tutoring more often than men. This aligns with previous research, but without the inclusion of masculine ideology, the relationship between imposter phenomenon and help-seeking is weakened. Similar relationships were found between study habits and gender, with gender moderating the effect of study habits, with women using deep approaches more than surface approaches. This serves as an additional reason to further emphasize the importance of looking at an individual's masculine ideology above their gender alone. When considering the gender distribution of our sample, this became especially salient. The study sample was majority women; however, a traditional masculine ideology remained a significant predictor in help seeking and study behaviors regardless of the individual's gender identity.

Finally, a model without any gender or masculine ideology moderators was analyzed (see Appendix A, Figure 3). Results revealed extremely poor model fit, and a majority of the paths were no longer significant. Thus, to truly understand the driving force behind differences in academic outcomes amongst men and women, masculine ideology must be taken under consideration, independently of their gender identity.

Academic Outcomes

The current study found a significant predictive pathway between help-seeking behaviors and academic performance outcomes across all three models. Students who engaged in higher rates of instrumental help-seeking, as evidenced by higher scores on the instrumental help seeking scale and more frequent visits to office hours and tutoring centers, tended to receive higher final course grades and overall GPAs. In contrast, students who exhibited greater

tendencies toward executive and avoidance-oriented help-seeking, demonstrated by higher scores on the executive and avoidance of help-seeking scales and fewer instances of seeking assistance from campus academic support resources, achieved lower final grades and GPAs on average. These results suggest that academic help-seeking that is focused on gaining an increased understanding of course material and improving competence may improve academic outcomes. In contrast students who avoid seeking help due to concerns about self-reliance or perceived stigmas may undermine their own academic success (Marrs, 2016; Severiens & ten Dam, 2012; Wimer & Levant, 2011). These findings support our hypothesis and highlight the crucial role of help-seeking that is focused on developing understanding and competence. Notably, no significant relationship was found between study habits and academic outcomes in any of the three models, likely attributable to the sample comprising primarily first-year students with limited academic histories and challenges encountered thus far.

Limitations and Future Directions

The study's limitations can be primarily attributed to the characteristics of the sample utilized. One notable challenge arises from the sample's composition, which predominantly consisted of first-year students. Given that their current GPA is limited to just one semester of college enrollment, it may not accurately reflect their academic performance. While some students may have participated in concurrent enrollment during high school, resulting in a college GPA before starting at the university, many students in the sample only had one semester of college coursework impacting their GPA. A similar issue was encountered with the retention data, as much of the sample's retention reflects fall-to-spring retention during their first semester of college. However, the literature suggests that a substantial proportion of student attrition occurs between the spring semester of one academic year and the fall semester of the subsequent

year (Tight, 2020). This likely led to retention not being a significant outcome variable. Additionally, these measurement issues reduced the generalizability of the findings and likely limited the fit of the model.

Furthermore, delineating "good" versus "bad" study habits and help-seeking behaviors can be challenging. At this early stage of their collegiate careers, students might not have encountered significant academic challenges, as the first year of college primarily consists of general education requirements. Additionally, assessing help-seeking behaviors may be complicated because students with higher course grades and GPAs may not need assistance during this time in college. However, this study shows that even during their first semesters, differences are surfacing that will influence their eventual academic outcomes, which provides evidence for the importance of intervening early. Students undergo a significant adjustment period when transitioning to college, and many may not be aware of effective study strategies or available resources, even if they are experiencing academic struggles. However, even when taught proper study strategies and made aware of available resources, they do not improve. The purpose of this study was to highlight that teaching study strategies and help-seeking is not enough. Interventions surrounding these issues should focus on combatting the motivational reasons that are keeping these students from choosing to use tools that are made available to them.

Another sampling limitation arises from the disproportionate representation of female students, leading to a skewed gender distribution. This imbalance could potentially impact the significance of the masculine ideology variable, which consistently emerged as a significant moderator. One potential avenue involves obtaining samples with equal representation of male and female participants, which could facilitate a more comprehensive understanding of gender

specific habits, behaviors, and differences. Additionally, it would be beneficial to disentangle the driving effect or what cultural or social factors are contributing to masculine ideology, particularly among female students. This could be done through research focused more intently on why women may be high in a traditional masculine ideology, and possible reasonings for those beliefs. Although recruiting a sufficient number of non-binary individuals may pose a challenge, future research should include them in their samples and analyses.

Finally, the study's reliance on self-report measures of study strategies, intelligence mindset, and imposter phenomenon introduces the potential for response bias, as students may desire to present themselves more favorably than their typical in-class behaviors and attitudes suggest. The present research contributes significantly to the existing literature by corroborating previous findings with real-world outcomes. Notably, it reveals that a student's traditional masculine ideology, irrespective of gender identity, serves as a strong predictor of their help seeking and study behaviors, thereby influencing their academic outcomes. However, this area of research still presents ample opportunities for further exploration. Additionally, efforts should focus on looking at academic outcomes as multifaceted, rather than focusing solely on one measure of academic performance.

Furthermore, it is worth considering the possibility that mindset may be better understood as a continuum, with the degree of entity versus incremental mindset experienced by students being largely contextual. The idea of mindset being contextual indicates that classes that more closely align with a student's major, or general area of interest, may be approached from more of an incremental mindset. Their interest in the course may lead to them having more of an openminded attitude to what they are able to learn, leading to a deeper engagement and desire to learn the material. However, for general education requirements or other courses that are not of

particular interest, students may maintain an entity mindset. Their lack of interest in learning and engaging with these courses may contribute to them feeling like their knowledge about these subjects is fixed. Additionally, situational cues and expressions of belief from professors about a student's talents and abilities can lead students to align more with an incremental mindset. Alternatively, if feedback from professors about a student's abilities make them feel as though they do not possess the ability to learn more in that course, then the student is likely to adopt that belief for themselves. Future research should take this into account when measuring mindset by acknowledging the impact contextual and external factors.

Moreover, future research should focus on samples that capture students at all levels of their academic journey. Much of the previous literature has concentrated on K-12 students, college first-years, and graduate students, leaving a significant portion of the student population underrepresented. Though K-12 is where the differences in academic performance start to surface, little attention is given to addressing this gap. Those who seem to be more academically adept are given more attention in classrooms, while those who have skills in other areas (e.g., athletics, theatre, music) are given more encouragement in those areas. Thus, whenever these students are going into higher education, the gap in academic performance tends to be maintained. This provides evidence, and a reason, to continue pursuing research that seeks to understand what may be causing these issues to continue. Ultimately, it is important to continue K-12 research, with a possible shift to interventions tailored to the students' overall academic competence, rather than only encouraging areas they are naturally better in. However, it is also important to address this gap in the literature that focuses on students once they get to higher education. This could involve tracking a cohort of students to determine whether their ideologies

at the onset of their college careers predict their performance and outcomes as upper-level students.

Ultimately, the overarching goal of academic outcomes research is to comprehend the underlying reasons for disparities in academic achievement and provide potential solutions to support those who are adversely impacted. Consequently, given the evident disparities in academic outcomes based on students' ideologies, study strategies, and help-seeking behaviors, future research should focus on developing and evaluating effective intervention techniques across a wide variety of contexts (Parnes et al., 2020). Although previous intervention research has yielded mixed results (Hattie, 2015), the added context of masculine ideology as a moderator could prove crucial in enhancing the effectiveness of these interventions. This study serves to inform how interventions are created by showing that there is not just one area leading to differences in academic outcomes, and that there are several factors that need to be accounted for. By accounting for factors such as a student's mindset, and experiences of imposter phenomenon, it becomes easier to understand why they are approaching their learning differently. Finally, by including masculine ideology over gender alone, this study demonstrates that their beliefs about their place in the world could be largely indicative of how they allocate their time and efforts in academia.

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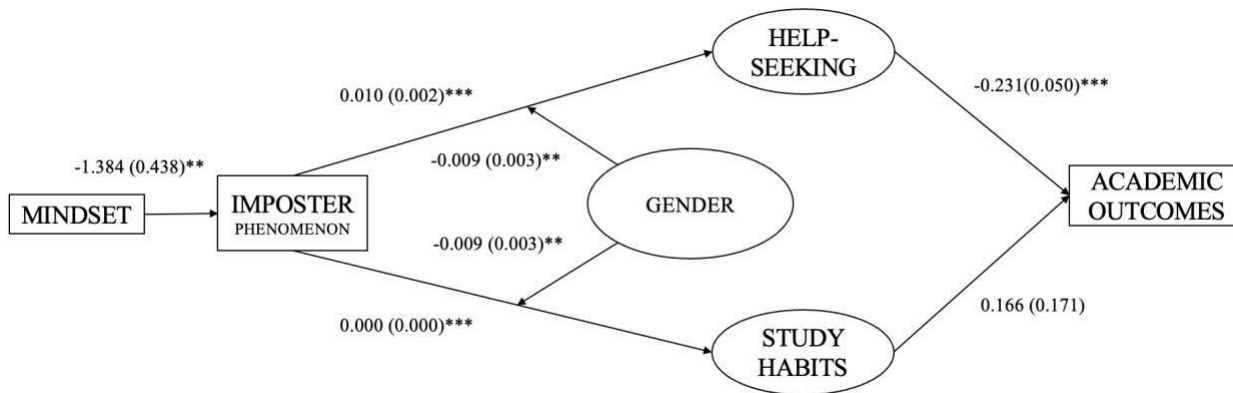
Appendix A: Figures
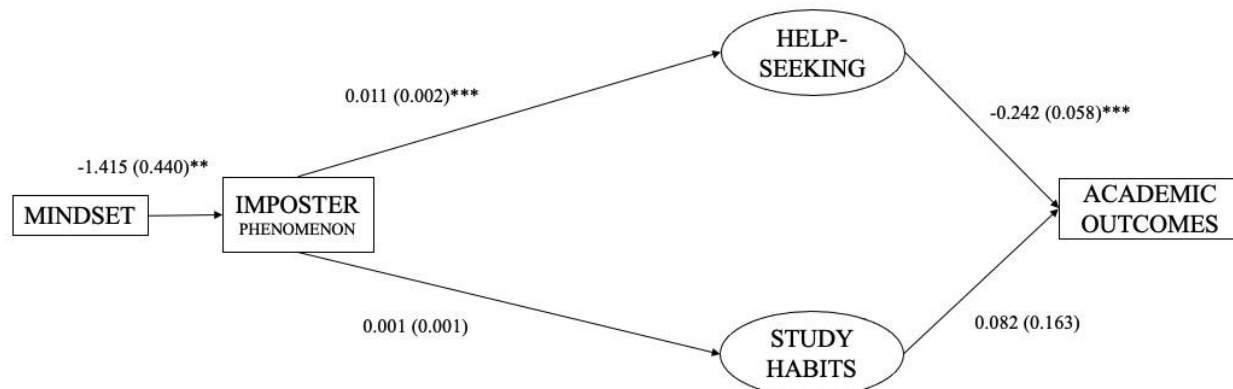
Figure 1
Hypothesized moderation model
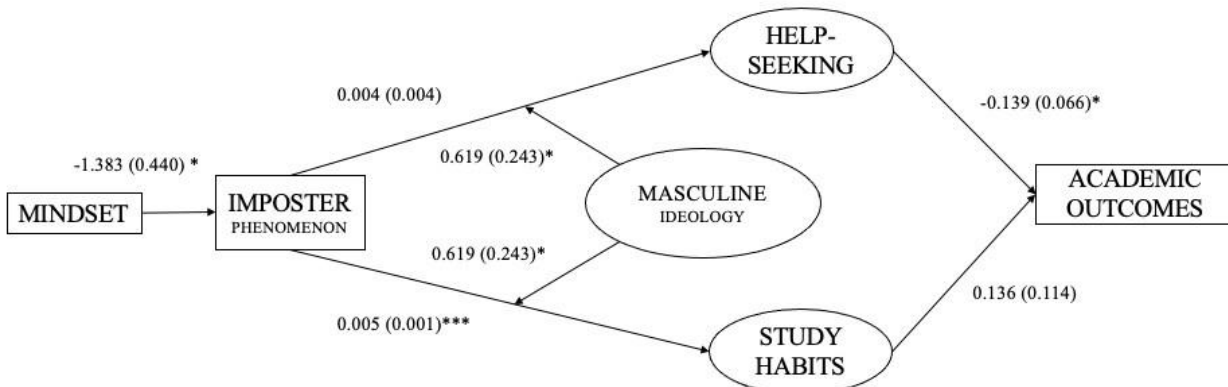
*Note: Help-seeking is measured using the PHSS, office hours, and tutoring center visits; Study Habits is measured using the RSPQ; Academic outcomes are measured using final grade and GPA; * < 0.05, ** < 0.01, *** <0.001.*

Figure 2
Alternative model

*Note: Help-seeking is quantified by the PHSS, office hours, and tutoring center visits; Study Habits is measured using the RSPQ; Academic outcomes are measured using final grade and GPA; * < 0.05, ** < 0.01, *** <0.001.*

Figure 3

Model without moderation

Note: Help-seeking is quantified by the PHSS, office hours, and tutoring center visits; Study Habits are measured using the RSPQ; Academic outcomes are measured using final grade and GPA; * < 0.05, ** < 0.01, *** <0.001.

Appendix B: Help-Seeking Behaviors

Psychology Help-Seeking Scale (PHSS)
For the following questions, please think specifically about your psychology class and rate each item on the 8-point scale below (1- most definitely false; 8- most definitely true):
Instrumental Help-Seeking:
1. When I ask my psychology teacher for help, I prefer to be given hints or clues rather than the answer
2. When I ask my teacher for help with my psychology work, I don't want my teacher to give away the whole answer
3. When I ask the teacher for help with something I don't understand, I ask the teacher to explain it to me rather than just give me the answer
4. When I ask my teacher for help in this class, I only want as much help as necessary to complete the work myself
5. When I ask my teacher for help understanding the material in this class, I prefer that the teacher help me understand the general ideas rather than simply tell me the whole answer
6. When I ask a student for help with my psychology work, I don't want that student to give away the whole answer
7. When I ask a student for help understanding the material in this class, I prefer that the student help me understand the general ideas rather than simply tell me the answer
8. When I ask a student for help in this class, I want to be helped to complete the work myself rather than have the work done for me
9. When I ask for help in this class, I prefer to be given hints or clues rather than the answer
10. When I ask another student for help with something I don't understand, I ask the student to explain it to me rather than just give me the answer
    Executive Help-Seeking
11. When I ask the teacher for help in this class I prefer that the teacher do the work for me rather than explain to me how to do it
12. When I ask the teacher for help on something I don't understand, I prefer the teacher just to give me the answer rather than explain it
13. When I ask my teacher for help on something I don't understand, I prefer that the teacher do it for me
14. When I ask the teacher for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself
15. When I ask my teacher for help, I want the teacher to do the work for me rather than help me be able to complete the work myself
16. When I ask a student for help on something I don't understand, I prefer that the student do the work for me rather than explain to me how to do it
17. When I ask a student for help with my work, I prefer that the student do the work for me rather than explain to me how to do it
18. When I ask another student for help on something I don't understand, I ask the student to do it for me
19. When I ask a student for help in this class, I want the work done for me rather than be helped complete the work myself

20. When I ask a student for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself

Avoidance of Help-Seeking

21. I don't ask for help in class even when the work is too hard to solve on my own
22. If I need help to do a psychology problem, I prefer to skip it rather than ask for help
23. I don't ask for help in this class even if I don't understand the lesson
24. If I didn't understand something in this class, I would guess rather than ask someone for help
25. I would rather do worse on an assignment I couldn't finish than ask for help in this class
26. Even if the work was too hard to do on my own, I wouldn't ask for help in this class
27. I don't ask questions in this class even if I don't understand the lesson
28. If work in this class is too hard, I don't do it rather than ask for help
29. I would put down any answer rather than ask for help in this class

Perceived Benefits of Help-Seeking

30. I like to ask questions in this class
31. I feel smart when I ask a question in this class
32. Asking questions makes this class more interesting for me
33. I like to ask for help in this class because it helps me understand psychology better
34. I think asking questions in this class helps me learn
35. I enjoy this class more when I ask questions
36. I like to ask for help in this class because it helps me understand the topic more completely

Appendix C: Masculinity Scales

Conformity to Masculine Norms Inventory (CMNI-30)

Rate the following statements on the 6-point scale below (1- strongly disagree; 6- strongly agree):

Emotional Control
1. I like to talk about my feelings (R)
2. I tend to share my feelings (R)
3. I bring up my feelings when talking to others (R)

Winning
4. For me, the best feeling in the world comes from winning
5. I will do anything to win
6. In general, I must get my way

Playboy
7. I would change sexual partners often if I could
8. I would feel good if I had many sexual partners
9. I would find it enjoyable to date more than one person at a time

Violence
10. It's never okay for me to be violent (R)
11. I think that violence is sometimes necessary
12. I dislike any kind of violence (R)

Heterosexual Self-Presentation
13. I would be furious if someone thought I was gay
14. It would be awful if people thought I was gay
15. I would get angry if people thought I was gay

Pursuit of Status
16. Having status is not important to me (R)
17. I think trying to be important is a waste of time (R)
18. I would hate to be important (R)

Primacy of Work
19. Work comes first for me
20. I need to prioritize my work over other things
21. I feel good when work is my first priority

Power Over Women
22. I love it when men are in charge of women
23. The women in my life should obey me
24. Things tend to be better when men are in charge

Self-Reliance
25. I never ask for help
26. I am not ashamed to ask for help
27. It bothers me when I have to ask for help

Risk-taking
28. I take risks
29. I put myself in risky situations
30. I enjoy taking risks

Appendix D: Imposter Phenomenon

Clance Imposter Phenomenon Scale (CIPS)

For each question, please select the option that best indicates how true the statement is of you. It is best to give the first response that enters your mind rather than dwelling on each statement and thinking about it over and over.

1. I have often succeeded on a test or task even though I was afraid that I would not do well before I undertook the task.
2. I can give the impression that I'm more competent than I really am.
3. I avoid evaluations if possible and have a dread of others evaluating me.
4. When people praise me for something I've accomplished, I'm afraid I won't be able to live up to their expectations of me in the future.
5. I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.
6. I'm afraid people important to me may find out that I'm not as capable as they think I am.
7. I tend to remember the incidents in which I have not done my best more than those times I have done my best.
8. I rarely do a project or task as well as I'd like to do it.
9. Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error.
10. It's hard for me to accept compliments or praise about my intelligence or accomplishments.
11. At times, I feel my success has been due to some kind of luck.
12. I'm disappointed at times in my present accomplishments and think I should have accomplished much more.
13. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.
14. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.
15. When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keep repeating that success.
16. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance of what I've done.
17. I often compare my ability to those around me and think they may be more intelligent than I am.
18. I often worry about not succeeding with a project or examination, even though others around me have considerable confidence that I will do well.
19. If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an accomplished fact.
20. I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.

Appendix E: Mindset

Growth Mindset Scale (GMS)
Read each sentence below and then select the option that shows how much you agree with it.
There are no right or wrong answers.
1. You have a certain amount of intelligence, and you can't really do much to change it.
2. Your intelligence is something about you that you can't change very much.
3. You can learn new things, but you can't really change your basic intelligence.

Appendix F: Study Strategies

Revised Study Process Questionnaire-Two Factor (R-SPQ-2F)
Please choose the one most appropriate response to each question. Click the circle under the answer that best fits your immediate reaction. Do not spend a long time on each item: your first reaction is probably the best one. Please answer each item.

Deep Learning Approaches

1. I find that at times studying gives me a feeling of deep personal satisfaction.
2. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.
3. I feel that virtually any topic can be highly interesting once I get into it.
4. I find most new topics interesting and often spend extra time trying to obtain more information about them.
5. I find that studying academic topics can at times be as exciting as a good novel or movie.
6. I work hard at my studies because I find the material interesting.
7. I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.
8. I come to most classes with questions in mind that I want answering.
9. I make a point of looking at most of the suggested readings that go with the lectures.
10. I test myself on important topics until I understand them completely.

Surface Learning Approaches

11. My aim is to pass the course while doing as little work as possible.
12. I only study seriously what's given out in class or in the course outlines.
13. I do not find my course very interesting so I keep my work to the minimum.
14. I learn some things by rote, going over and over them until I know them by heart even if I do not understand them.
15. I find I can get by in most assessments by memorizing key sections rather than trying to understand them.
16. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.
17. I find it is not helpful to study topics in depth. It confuses and wastes time when all you need is a passing acquaintance with topics.
18. I believe that lecturers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined.
19. I see no point in learning material which is not likely to be in the examination.
20. I find the best way to pass examinations is to try to remember answers to likely questions.