An Exploratory Study Examining the Effects of an Online-Based, Curriculum-Embedded Gratitude Intervention for College Students

By CRISTINA BISTRICEAN

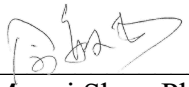
A dissertation submitted in partial fulfillment

Of the requirements for the degree of

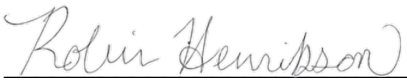
Doctor of Philosophy (PhD)

Seattle Pacific University

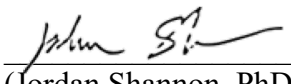
2023

Approved by 

(Munyi Shea, PhD, Dissertation Committee Chair)



(Robin Henrikson, PhD)



(Jordan Shannon, PhD)

Program Authorized to Offer Degree:

School of Education

Date: May 2023

(Nyaradzo Mvududu, EdD, Dean, School of Education)

Copyright Page

Acknowledgment

Thank you, Dr. Munyi Shea, for your guidance and unwavering support.

Dr. Robin Henrikson and Dr. Jordan Shannon, thank you for your encouragement and ongoing support, especially during the proposal defense.

My deepest gratitude to Dr. Mary Radeke. Thank you for allowing me to conduct the gratitude intervention study with your introduction to psychology students.

A heartfelt thank you to Debbie Thomas. Our long conversations during the development of this study and beyond have helped and supported me more than you realize.

Table of Contents

List of Tables

List of Figures

List of Appendices

Abstract

The present study examined the effectiveness of a curriculum-embedded, asynchronously delivered gratitude intervention with a first-year college student sample. Hypotheses included that the gratitude intervention would lead to decreased levels of depression, anxiety, and stress and increased feelings of gratitude and psychological wellbeing/flourishing. Furthermore, race, gender, and college generational standing were examined for their moderating effects of the gratitude intervention on the same outcome variables. Participants self-selected into two sections of an Introduction to Psychology course, with 72 participants engaged in the gratitude intervention and 97 in the control condition. Gratitude activities lasted five weeks, including a video presentation on gratitude, Count Your Blessings, Gratitude Letter, and Three Good Things. Participants in both conditions completed pre- and posttest measures for depression, anxiety, stress, gratitude, and wellbeing. Repeated measures ANOVA and independent-sample *t*-test were conducted to compare how the two conditions changed between pre and posttest. Participants in the gratitude intervention reported a statistically significant decrease in depression but not anxiety or stress compared to the control group participants. There was no statistically significant difference between the two groups in pre- and posttest change in the feelings of wellbeing or gratitude. Except for the interaction between gender and stress, race, gender or college-generation status had no significant moderating effect on any outcome variables. Study strengths, limitations, and implications for future research and practice are discussed.

Keywords: Positive psychology intervention, gratitude intervention, college students, curriculum-embedded

Chapter One: Introduction

Background

The National Center for Education Statistics (NCES, 2020) reported college enrollment at 40% for individuals aged 18 to 24, with Asian Americans having the highest enrollment at 64%, followed by White (41%), Hispanic, and Black (36%). However, the dropout rate is equally alarming. During the 2019-2020 academic year, an unprecedented 39 million (73%) college students dropped out – the highest dropout rate since the 2015-2016 academic year –with only 944,200 reenrolling for the 2021-2022 school year (Hanson, 2022). Students of color experienced the highest percentages compared to White students (8%), with dropout rates for Asian students at 19%, American Indian/Alaska Native at 45%, the highest among demographics, and Black students at 33% (Bouchrika, 2023; Hanson, 2022). First-generation students have a 92% higher dropout rate than students whose parents had a bachelor's degree or higher.

Students left college in high numbers in the 2019-2020 academic year, which could impact their employment chances, earning potential, and future college reenrollment numbers. The current dropout rate for first-time freshmen, students coming to college right after high school, is over 25% and a staggering 40% for all students (Claybourn, 2023; Hanson, 2022). Dropping out of college shows students earning 32% less than their counterparts with degrees could lead to a 19.5% higher chance of experiencing unemployment than those who hold a degree (Bouchrika, 2023; Cataldi et al., 2018; Hanson, 2022).

Entrance into college require students to go through periods of transformation which include making decisions for themselves, leaving family for the first time, changes

in social and emotional support, and learning to interact with diverse groups of peers (Hernandez-Torrano et al., 2020; Kahu & Nelson, 2018; Sy et al., 2011). Decision-making includes balancing finance availability, such as financial student aid, and having to work (Ziskin et al., 2014). First-generation students with parents who have never attended college may have challenges related to a lack of familiarity and understanding with the transition to college compared to continuing-generation students (Sy et al., 2011). Students leaving home to attend college experience a change in their social and emotional support system as the possible distance and accessibility to that social and emotional support change (Sy et al., 2011). These transition-related challenges may contribute to a decrease in college students' psychological health, with many experiencing moderate to severe levels of depression (36%), anxiety (44%), and stress (88%) (Lee et al., 2021).

Maymon and Hall (2021) reviewed first-year college student experience. They reported negative psychological (high levels of perceived stress and low self-esteem) and cognitive (such as planning and studying) difficulties, for example, due to academic performance dissatisfaction and feelings of helplessness. Since the onset of the COVID-19 pandemic, universities and colleges have reported a significant increase in student anxiety and depression (Haikalis et al., 2022), partly due to the practice of lockdown and remote learning (Copeland et al., 2021). These institutions have also experienced a 60% increase in students seeking counseling services for various mental health needs (Center for Collegiate Mental Health, 2020), resulting in prolonged wait times for counseling services. These statistics are alarming because untreated depression and anxiety can hinder growth. It is reported 44% of undergraduates struggle with depression and anxiety,

of which 75% do not seek the help they need, which could lead to reduced academic performance or possibly dropping out of college (Druckenmiller, 2022).

Students from historically marginalized communities, including students of color and first-generation college students (FGCS), often experience higher psychological distress than White students. Students of color often experience overt racism through cyberbullying and culture-related misinformation via social media (Primm, 2018). For example, Black students face cyberbullying and racial slurs over social media, leading to feelings of powerlessness and impacting their academics. Asian American students struggle with societal pressures to conform to the model minority stereotype, which can lead to extreme expectations, followed by feelings of insecurity and anxiousness. Latinx students protected under the Deferred Action for Childhood Arrivals policy may feel marginalized and unsure of whom to trust due to societal views of immigration. Finally, those of different faiths, such as Muslim students, may not feel supported in expressing their religious traditions due to islamophobia, leading to feelings of isolation, hopelessness, and depression.

First-generation students, low-income students, students of color, female students, and those who identify as LGBTQ+ are also at higher risk for depression and anxiety and tend to experience more significant difficulties such as stress overload, somatic symptoms, lower grades, and limited coping resources (Amirkhan et al., 2022; Druckenmiller, 2022; Sy et al., 2011). Regarding coping mechanisms, gender also affects how each gender copes. Graves et al. (2021) found that, compared to males, females experience more severe stress and are more likely to use indirect coping styles such as self-distraction and venting.

College student mental health has become a critical issue in recent years. Despite the high rates of depressive, anxiety, and stress symptoms expressed by students, most do not access campus mental health services due to many barriers (Eisenberg et al., 2007; Shea et al., 2019). Students of color, females, those with low-income, and students struggling with academic expectations are especially vulnerable. Left untreated, the negative mental health issues may contribute to impaired daily functioning, lower academic performance, and higher risks of dropping out of school. In extreme cases, some students may even contemplate suicide (Amirkhan & Kofman, 2018; Duffy et al., 2020; Lee et al., 2021). Therefore, there is a need for accessible, low-cost, minimal intervention such as curriculum-embedded positive psychology interventions (PPI).

A Positive Psychology Framework

The positive psychology movement (Gable & Haidt, 2005) has flourished over the last 20 years since its introduction by Seligman and Csikszentmihalyi (2000). Acknowledging the importance of how and why people should live their best life, positive psychologists focus on helping individuals build upon their strengths (e.g., social intelligence, fairness, judgment) and virtues (e.g., wisdom, courage, justice, perspective, social intelligence, creativity) (Gable & Haidt, 2005; Peterson & Seligman, 2004). These strengths and virtues are present in almost every culture, providing a personal sense of satisfaction and happiness, and are typically stable (Seligman et al., 2005). Findings from positive psychology research are intended to complement the already plethora of findings associated with human suffering and psychological distress, leading to a complete picture of the human experience (Seligman et al., 2005).

Positive psychology is an umbrella term used in studying conditions and processes that contribute to positive emotions, positive character traits, and factors of enabling institutions (Gable & Haidt, 2005; Seligman et al., 2005). Linley et al. (2009) described positive psychology as a way of doing things that helps develop the motivation necessary for optimal functioning. Counseling psychology is a field where positive psychology has been used to foster personal growth, autonomy, and a better relationship with oneself and others through counseling interventions (Linley et al., 2009). Empirically supported positive psychology interventions (PPIs) include forgiveness, gratitude journaling, acts of kindness, nurturing relationships, and goal setting, which have been associated with positive effects such as increased happiness (Magyar-Moe et al., 2015). Positive psychology has also had an impact on industrial and organizational psychology, demonstrating a positive impact on individuals as well as organizations. Organization-based interventions that build self-efficacy, optimism, and resilience have been associated with increased job performance and worker engagement and reduced job-related stress (Donaldson et al., 2018).

Positive psychology has played an impactful role in education. Positive education, known as an applied positive psychology approach in education, supports teaching traditional academic skills, cultivating positive emotions in schools to enhance students' wellbeing, and promoting behaviors necessary to overcome future difficulties (Chodkiweicz & Byle, 2016; Green et al., 2011; Seligman et al., 2009). Seligman et al. (2009) discussed the application of embedding positive education in the classroom and its usefulness in increasing students' reports of love of learning, curiosity, and creativity in school activities. For example, the Three Good Things (Seligman et al., 2009) activity

encourages students to list small but important accomplishments or meaningful subjective experiences and then reflect on why the good things happened. The reflection component helps students not only notice the positive emotions associated with the experiences but also think about and identify what could have contributed to the experiences. This could help students continue to set goals for the future and develop the necessary skills, such as social skills, to strengthen future interpersonal relationships (Seligman et al., 2009).

Positive psychology interventions (PPI) are theoretically grounded and empirically supported methods to promote positive emotions, cognitions, motivations, and behaviors (Lomas et al., 2014). Studies have empirically supported the positive outcomes of PPIs, including enhanced student learning and wellbeing. For example, Bolier et al. (2013) conducted a meta-analysis of various PPIs, including acts of kindness, hope therapy, and gratitude exercise (Seligman et al., 2009). They identified small but significant effect sizes ranging from .20 to .34. Gabana et al. (2019) conducted a gratitude intervention with college athletes and noted a significant increase in athletes' sense of well-being (e.g., state gratitude, sport satisfaction, and social support), measured by their reported gratitude and social support. Muro et al. (2018) studied the impact of gratitude PPIs on high school students' academic performance compared to the control group. Over the course of two phases, students first developed a list of goals to instigate positive self-change. Then, in the second phase, students engaged in gratitude interventions, which included writing gratitude letters, counting blessings, identifying, and developing personal strengths, and writing about the best possible self (Lyubomirsky et al., 2005; Seligman et al., 2005; Seligman et al., 2009). Outcomes found that participating in the PPI group significantly increased students' average grades compared to the control group,

where students engaged in an after-school program that offered academic support (Muro et al., 2018). Positive effects of this type of intervention among first-year college students are lesser known and require further research.

PPIs have been studied with ethnically diverse groups (Boehm et al., 2011; Janevic et al., 2022; Cavazos Vela et al., 2019). Individuals from individualistic and collectivist communities may experience interventions differently depending on their cultural perspectives. For example, PPIs that encourages expressing gratitude towards others are more beneficial in Eastern societies where family and group cohesiveness are emphasized, whereas PPIs that encourages expressing optimism is more beneficial in western societies that focus more on the self or individuality (Boehm et al., 2011; Fekete & Deichert, 2022).

Integrating Positive Psychology into College Curriculum

The accessibility and delivery of mental health treatments and interventions to as many individuals as possible are essential to mental health treatment (Mitchell et al., 2010). Compared to traditional, in-person interventions, online treatments reduce barriers to treatment, such as conflicts with traditional school schedules (e.g., employment, school), and more immediate interventions with reduced sessions, which lead to cost savings (Ritterband et al., 2009; Tate et al., 2009).

The Covid-19 pandemic and lockdown have augmented the need for accessible online interventions among college students as they can no longer attend in-person counseling sessions (Liu et al., 2020). Current online interventions studied the effectiveness of web-based positive psychology interventions on college student wellbeing.

For example, Liu et al. (2021) examined the effectiveness of gratitude-induced thinking and positive future imagination, an intervention developed by Seligman and Csikszentmihalyi (2000). A sample of 868 Chinese college student participants were randomly assigned to either the intervention or control groups. The intervention group was asked to think about and imagine any upcoming exciting event and then write about the event with as many vivid details as possible. Participants were asked to also capture any feelings induced by the intervention. The control group was sent information about their health and were reminded to wash their hands, continue to mask, and stay positive. Positive and negative affect was captured using the Positive and Negative affect Schedule (PANAS). Compared to the control group, the intervention group did increase in affect, both positive (e.g., attentive, interested, alert) and decrease in negative (e.g., distressed, upset, nervous). Participants who participated in the imagery intervention significantly improved positive mood. Since Covid-19 could have contributed to struggles brought on by isolation and subsequent loneliness, the PPI demonstrated that engaging in a positive activity could boost one's mood even if removed from other individuals. The online application of the PPI successfully increased participants' positive mood.

Yurayat and Seechalioa (2021) also focused on gratitude interventions and looked to increase psychological well-being. Participants were randomly assigned to either the intervention group, consisting of activities such as Three Good Things, Gratitude Letter, and Gratitude Visit (Seligman et al., 2005), or the control which did not engage in any activities. The authors developed their own measure of well-being, based on Ryff's (1995) definition of well-being, which included self-acceptance, the purpose of life, environmental mastery, positive relationships, autonomy, personal growth, and self-

acceptance. The Likert scale based; a 50-item assessment, identified a significant improvement in psychological well-being compared to control. Overall outcomes identified the PPIs, positive imagery, Three Good Things, Gratitude letter, and Gratitude Visit had positive effects with improvement in positive moods (Liu et al., 2021; Yarayat & Seechalioa, 2021).

Compared to traditional in-person counseling, school or classroom-based interventions have the potential to reach more students, especially those from cultures that are hesitant about seeking counseling interventions (Zhang et al., 2020). Students spend considerable time in the classroom and engaging in the course content. The classroom could be an optimal setting for introducing positive psychology and interventions. Research has shown that including a curriculum-embedded positive psychology intervention as part of the undergraduate coursework could enhance students' engagement and well-being (Fekete & Deichert, 2022; Komase et al., 2021; Hammill et al., 2020).

Exploring different approaches to applying positive psychology and positive psychology interventions in schools is an ongoing area of research. Teachers who are interested in using curriculum-embedded interventions may encounter several obstacles. First, some teachers may believe that implementing PPIs requires specific psychological knowledge and expertise. Second, teachers might be concerned about the high levels of commitment associated with the preparation of the materials, overall student engagement, and the additional professional development training (Shankland & Rosset, 2017), making the implementation of PPIs in the classroom too onerous a task to take on. To address these obstacles and to provide evidence that school-based positive psychology

interventions are feasible, Shankland and Rosset (2017) conducted a review of 16 school-based positive psychology interventions to encourage educators to consider PPIs, arguing that as opposed to carving out time within the school day for workshops or group intervention which might reduce class time, including positive psychology interventions as part of the curriculum may eliminate the obstacles that PPIs require special training and commitment.

Gratitude Intervention

Gratitude intervention, a type of PPIs, has impacted individuals positively. Defined as an ability to feel appreciation towards the world and as a response and motivator brought on by others which includes the awareness a person obtains, gratitude has been associated with different positive qualities, such as moral affect and subjective well-being (McCullough et al., 2001; Wood et al., 2010). One example is Seligman et al. (2009) gratitude letter, where participants write letters expressing gratitude towards others. This implementation of gratitude through an activity has several strengths. The exercises are easy to understand by the participants, are cost and time effective, have a low attrition rate, and can be implemented by lay individuals (Dickens, 2017; Komase et al., 2021; Seligman et al., 2005). Dickens (2017) reviewed the findings of thirty-eight gratitude studies that focused on gratitude interventions that could be completed by anyone without extra training or extra time to complete. This included gratitude journaling and gratitude letter and visit. Effect sizes ranged from small to medium. Dickens (2017) suggested the interventions could hold positive benefits toward well-being, including happiness, life satisfaction, positive affect, and decreased negative mood.

Curriculum-embedded, gratitude-focused PPIs are successful in promoting student well-being. Seligman et al. (2009) studied the effects of gratitude curriculum-embedded PPIs (e.g., Three Good Things and Using Signature Strengths in a New Way) with 9th graders to promote happiness, social skills and a decrease in depression and anxiety symptoms. This was the first study looking at embedding PPIs into the school curriculum. Outcomes identified social skill improvement but no improvement in depression and anxiety symptoms. Since this was the first study of this kind, Seligman et al. (2009) speculated other factors, such as socioeconomic status and cultural background, could have played a role. Although Seligman et al. (2009) explained the benefits of using schools to teach well-being, PPIs are also effective with older students. For example, college students spend a substantial amount of time in school, like secondary education. In fact, PPIs for older students may be more effective as a curriculum-embedded approach. Lambert et al. (2019) embedded PPIs related to Seligman's (2011) theory of PERMA (Positive emotion, Engagement, Relationship, Meaning, Accomplishment) into an introduction to psychology course at an internationally diverse university, which included, for example, Italian, Saudi, Chinese, and Indian participants. Over the course of 14 weeks, students learned about positive psychology topics (e.g., happiness) and participated in positive activities such as engaging in good deeds, writing gratitude letters, and three good things. Zhang et al. (2020) used a PPI with PERMA differently than Lambert et al. (2019). They worked with medical students over the course of eight weeks and embedded topics related to Seligman's (2011) theory of PERMA, where weekly topics covered gratitude and appreciation and exercises used to help students use the PERMA theory to not fall into

thinking traps associated with their learning. Homework-type assignments were all assigned in both studies, where students were asked to write down good things they experienced or were encouraged to practice the interventions over the course of each week. Both studies aimed to improve psychological well-being, including hope, life satisfaction, and subjective happiness. Zhang et al. (2020) also hoped to reduce negative symptoms (depression and anxiety). Results identified an increase in well-being and a decrease in negative symptoms.

It should be noted that the effectiveness of curriculum-embedded PPIs depends on several factors. The PPI should be straightforward enough to be put in place and carried out by an individual teacher, should be integrated into the existing curriculum without extensive time or special training to put into place, and should not require more resources than already needed for the existing curriculum, meaning it should not require special materials to put into place and carry out. The PPIs should also focus on increasing positive affects such as well-being, including happiness and life satisfaction, and positive relationships. More importantly, PPIs should consider cultural and normative components to ensure equity (Shankland & Rosset, 2017). This implementation of curriculum-embedded PPI, such as gratitude, through an activity by the teacher, has several strengths. First, since the teacher already has a relationship with the students, this could enhance effectiveness. Second, exercises are easy to understand by the participants, are cost and time effective, have a high completion rate, and can be implemented by lay individuals. Third, gratitude interventions have been shown to have a positive outcome for diverse populations, including Black, Indigenous, and people of color (BIPOC; Boehm et al.,

2011; Dickens, 2017; Komase et al., 2021; Morgan & Kristajansson, 2014; Pedrotti, 2014; Seligman et al., 2005; Cavazos Vela et al., 2019; Waters, 2011).

Overview of the Proposed Study

By providing a gratitude-focused PPI as part of a college psychology course curriculum, the primary goal of the study is to identify the feasibility and the effect of such an intervention on enhancing well-being and gratitude as well as reducing negative affect, such as the symptoms of depression, anxiety, and stress. The details of this curriculum-embedded PPI are discussed in Chapter 2.

Definition of Key Terms

Black, Indigenous, and People of Color (BIPOC). This term is intended to identify the experiences of Black, Indigenous, and people of color who face varying types of discrimination, prejudice, injustice, oppression, and invalidation, that impact their lives (Davidson, 2022).

College Generational Standing. This term refers to first-generation college students with neither parent ever attended college or continuing-generation college students with at least one parent who attended college (National Center for Education Statistics, 1998).

Curriculum-Embedded Positive Psychology Interventions. This term refers to including positive psychology interventions in an already established course curriculum (Hammill et al., 2020).

Gratitude. This term refers to the ability to appreciate the world and others and includes feelings contributing to well-being (McCullough et al., 2001; Wood et al., 2010).

Wellbeing. This term refers to feelings of happiness (Seligman et al., 2009)

Negative affect. This term refers to feelings of depression, anxiety, and stress (American Psychological Association, DSM-5 Task Force, 2013)

Positive Psychology. This term refers to understanding how and why people live their best life. This includes understanding how individual strengths (e.g., wisdom, courage, justice) and virtues (e.g., perspective, social intelligence, creativity) (Gable & Haidt, 2005; Peterson & Seligman, 2004; Seligman & Czikszentmihalyi, 2000).

Positive Psychology Intervention. This term refers to methods that promote positive emotions, cognitions, motivation, ad behaviors (Lomas et al., 2014).

Positive Education. This term refers to an applied psychology approach in education that supports teaching skills and cultivating positive emotions in schools (Green et al., 2011; Seligman et al., 2009).

Research Questions and Hypotheses

1. Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to control group participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants.

2. Will participants in the Gratitude Intervention group experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when the control group participants.

3. Will participants in the Gratitude Intervention group experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

4. Will participants in the Gratitude Intervention group experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control group participants?

H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control participants.

H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control participants.

5. Will race, gender, or college generational standing moderate the effect of the gratitude intervention on negative affect, stress, well-being, and gratitude?

Significance of the Proposed Study

The current study hopes to develop a gratitude intervention that all college educators could use to incorporate positive psychology intervention into their existing curriculum. Previous misconceptions about implementing a PPI included that only skilled psychologists are qualified to implement a PPI or that a considerable amount of time commitment or training is required (Shankland & Rosset, 2017). There may also be a misconception around interventions in general, where it may be thought that a license is required to apply an intervention. The principal researcher of this study is an instructor who teaches psychology courses but does not hold a counseling or clinical psychology licensure. Therefore, the goal is to provide evidence from a teaching perspective that the implementation of the PPI is feasible and manageable for all instructors. Furthermore, this study hopes to demonstrate the positive effect of a curriculum-embedded PPI, including decreased negative affect levels and increased subjective well-being among college students.

Potential Limitations

Some of the potential limitations associated with this study include the use of a convenience sample. College students from western, educated, industrialized, rich, and democratic countries (WEIRD) are often used (Rad et al., 2018), limiting the results' generalizability. Any effect observed cannot be causally attributed to the gratitude intervention; rather, maturation effect, where college students will naturally settle into their roles as students and adjust to their environment naturally, may impact the study results.

Chapter Two: Literature Review

This chapter reviews the literature about current difficulties experienced by college students, positive psychology, including curriculum-embedded interventions, online positive psychology interventions, information related to the theoretical framework associated with this study, and other key concepts. The chapter will begin with a literature review and the theoretical framework. Then, it will include what the current research offers for positive psychology interventions and their perceived usefulness.

College Student Mental Health

The college experience can be an impactful time for students. The challenges facing students tend to be multifaceted, including academic stress and social support network changes (Pitt et al., 2018). A combination of demands, such as academic expectations and campus environment, and a lack of resources, such as moving away from home, add to student difficulties (Pitt et al., 2018). The challenges college students face and college demands placed on them may lead to a decline in overall mental health. According to a national survey by the American College Health Association (2022), college students reported high levels of anxiety and depression. Close to 50% of transgender/gender non-conforming college students experienced the highest level of stress and depression, followed by 25.2% of female and 16.2% of male students. Even college students who did not have a prior diagnosis of mental disorder face an elevated risk of experiencing anxiety and depression when they begin college (Meda et al., 2021). It is evident that some students struggle with the changes of going to college and with anxiety and depression, even with no previous diagnosis.

College students must learn to work with several expectations, especially during the first few months of an academic year. Preparation for exams, completing coursework, and time management are some of the more common stress-provoking expectations of college life (Pitt et al., 2018). If students have not developed the skills to work through college-related expectations, such as reaching out to professors, contacting student services, or managing competing priorities, they may be at risk of developing self-stigma, low self-esteem, struggling academically, and even prematurely dropping out of college (Broglia et al., 2021; Pitt et al., 2018). The following sections will cover more details related to the difficulties experienced by college students, including mental health issues and how a focus on subjective well-being will help students deal with the difficulties and negative mental health effects.

College Students' Stress, Anxiety, and Depression Exacerbated by the Covid Pandemic

Prior to the COVID pandemic, research has already identified the increasing trend of mental health crises on college campuses (Maymon & Hall, 2021). For example, one study noted that 42.2% of college students struggled with depression, and 63.6% experienced overwhelming anxiety, making daily functioning difficult (Duffy et al., 2019). College students tend to feel a heightened state of stress with the start and finish of the beginning of the academic year. As stated earlier, first-year college students face a combination of stressors, including academic stress, social adjustment, and lack of access to or knowledge about resources (Pitt et al., 2018). These stressors have contributed to negative mental health.

Stress felt by college students increased during Covid-19. Haikalis et al. (2022) noted a significant increase in student anxiety and depression between pre-and post-onset of the Covid-19 pandemic, with female students reporting higher levels of anxiety and depression than their male counterparts. Students identified multiple stressors, including fear and worry about their health, concentration difficulties, and worries related to academic performance (Son et al., 2020). A longitudinal study by von Keyserlingk et al. (2022) noted a considerable increase in anxiety symptoms after the pandemic's start. Specifically, those who struggled with mental health-related difficulties experienced greater stress levels than those students with an ability for self-regulation. Students in their first academic year of the pandemic seemed especially impacted. Copeland et al. (2021) analyzed the results from 675 college students during the first semester of the pandemic, spring of 2020. They found that the experience of lockdown and remote learning had a persistent negative impact on students' mood and wellness.

The overall impact of Covid-19 on higher education is still being evaluated. For example, the shift to online learning due to the pandemic may have contributed to learning loss with students who had less adult support while engaging in online learning (Adler, 2021; Burke & Freedberg, 2021). Students may have felt personally disengaged from learning, and the relaxed structure of online learning may have not been motivating enough to keep students interested (Adler, 2021). First-generation college students and those in low-income brackets may be set back in terms of academic preparedness (Adler, 2021). Throughout the Covid-19 pandemic, researchers have cautioned colleges about the urgency of attending to students' short- and long-term mental health needs (Eisenberg et al., 2007; Lee et al., 2021). Despite the high rates of mental health challenges, most

college students do not access and utilize mental health counseling services (Eisenberg et al., 2007; Lee et al., 2021) due to a variety of barriers, including negative perceived value of counseling, difficulty with disclosing one's emotions, social stigma, lack of knowledge, lack of access, and cultural barriers such as a lack culturally competent care (Shea et al., 2019).

Liu et al. (2020) recommended better strategies for mental health services access and a more active approach to ensuring college students are informed about mental health services access. There are approaches colleges can take to help students overcome barriers. For example, universities counseling centers should consider developing more flexible approaches to care by means of telehealth and virtual drop-in sessions. Another consideration should be connecting with and keeping in contact with those with preexisting factors, such as previously seeking mental health support. This demonstrates the importance of multiple approaches to supporting college students' mental health needs.

Factors Contributing to College Students' Mental Health

Colleges that foster a campus culture of well-being provide opportunities for students to thrive academically and promote overall well-being, such as higher quality of life, including their physical, social, mental, and emotional state (Roberts, 2022). Students reported feeling more connected to others and their learning when colleges maintained external structural factors such as a culture where they felt supported and experienced higher levels of motivation, self-confidence, engagement in their community, and experience higher levels of empathy (Maymon et al., 2019; Roberts, 2022).

Students carry the burden of balancing their needs when colleges do not promote well-being and support student mental health needs. Meaningful experiences, sense of emotional control, positive social connections, and a sense of belongingness contribute to college student wellbeing (Kennedy & Tuckman, 2013). For example, college students struggling with anxiety and depression also tend to experience academic difficulties (Hysenbegasi et al., 2005). A longitudinal study by Awadalla et al. (2020) found that college students who struggled with depression and anxiety reported lower grade point averages (GPAs) than those who did not report experiencing depression or anxiety. Duffy et al. (2020) also noted an increase in depressive and anxiety symptoms and lower overall grades among first-year college students. Still, they identified specifically that the increase occurred between the start and the end of the academic year.

Besser and Zeigler-Hill (2014) examined the impact of psychological distress on college students. They found that students with internal protective factors, such as higher levels of positive emotions, including hope, optimism, and happiness, tended to exhibit lower levels of psychological distress. Students with heightened positive emotions also seemed to cope better after transitioning into college from high school. It is possible that positive emotions could be an internal protective factor for students who are going through a major life-stage transition. Students reported psychological distress tended to increase over the quarter, Besser and Zeigler-Hill (2014) recommended that colleges support students with interventions that focus on positive personality features such as optimism, hope, and happiness.

Focusing on methods to promote well-being, such as interventions that use optimism, hope, happiness, and even gratitude, is necessary to help students negate

negative effects such as depression and anxiety. Since fostering internal protective factors such as positive emotions have been associated with lower psychological distress, providing opportunities for students to engage in those positive emotions through curriculum-embedded positive psychology interventions would be a way to reach more students, especially early in their academic careers.

College Students' Positive Mental Health: Subjective Wellbeing

Well-being is an aspect of college students' overall health and long-term educational outcomes, such as higher GPAs and successful completion of undergraduate degrees (Eloff et al., 2022). Students who feel connected to the college environment and those around them engage in intentional positive activities such as practicing kindness and experience higher levels of well-being and satisfaction (Kennedy & Tuckman, 2013; Magyar-Moe et al., 2015).

Research has identified two forms of well-being, subjective (Diener, 1984) and psychological (Ryff, 1989). Subjective well-being (SWB) includes a hedonic pursuit of happiness and a pleasant life, including how a person feels as they go about their daily life and life as a whole. Psychological wellbeing (PWB) involves a eudaimonic approach to human potential and a meaningful life, meaning satisfaction arises from pursuing positive goals. The underlying component of PWB is the ability of a person to thrive, even when faced with challenges, and is still able to pursue goals, grow as a person, and maintain interrelationships. Diener's (1984) view of SWB includes a person's cognitive and affective evaluation of life and surmised SWB as the experience of increased levels of pleasant emotions, such as happiness, contentment, and life satisfaction, and decreased levels of negative emotions, such as sadness. In contrast to Diener's view of well-being

as a feeling, Ryff (1989) focused on behaviors of reaching happiness in addition to the emotions involved with happiness; therefore, well-being is derived from active, positive pursuits in life.

SWB and PWB contain different dimensions that contrast each other (Ryff, 1989). SWB holds two affective dimensions, positive affect (determined, inspired) and negative affect (afraid, distressed), and one cognitive dimension (i.e., life satisfaction). PWB comprises six dimensions for conceptualizing and examining how people reach their potential and have a meaningful life. The six dimensions include self-acceptance (i.e., accepting oneself), positive relationships (i.e., trusting others, love, and friendships), autonomy (i.e., self-confidence and self-sufficiency), environmental mastery (i.e., competence and handling of responsibility), purpose in life (i.e., goal setting and sense of life direction), and personal growth (i.e., the actualization of self and abilities). The more behaviorally oriented dimensions of PWB differentiate its focus from SWB.

Previous studies have identified the importance of subjective and psychological well-being among college students. SWB has been associated with life satisfaction, positive affect, and higher academic achievement (Rand et al., 2020). In contrast, PWB has been associated with greater emotional intelligence, such as positive appraisal and putting things into perspective (Extremera et al., 2020). The gratitude interventions planned for the dissertation study are geared to increase the capacity for positive emotions and reduce negative affect directly (Brown & Ryan, 2003; Deiner, 1984). Students entering their first year at college experience higher stress and anxiety levels, with the first semester or quarter of the academic year as the most stressful (Duffy et al.,

2020; Lee et al., 2021). My proposed dissertation study will focus on SWB to increase life satisfaction and reduce negative affect.

Theoretical Framework: Positive Psychology

Noting psychology as a field that has focused too much on negative mental health issues and not enough on individual strengths, Seligman (1998) reminded the psychological community that overall mental well-being goes beyond just treatment and reduction of pathological outcomes and should also include identifying and building the inherent strengths within each individual. This recognition of the imbalance in the field was the springboard for what would become the study of positive psychology (Gable & Haidt, 2005). Seligman and Csikszentmihalyi (2000) specifically argued the importance of studying positive feelings such as hope, wisdom, creativity, future-mindedness, courage, spirituality, responsibility, and perseverance along with facets of life that make it worth living to help individuals live their best life (Linley et al., 2009). Since then, psychology has expanded from the treatment of mental illness to promoting mental wellness, such as psychological well-being and happiness (Seligman & Csikszentmihalyi, 2000). In this chapter, I will provide a detailed discussion of positive psychology and its rationale, a theoretical model for conceptualizing positive psychology – the PERMA developed by Seligman (2011), and the broaden and build model developed by Fredrickson (1998). I will then discuss the empirical support for the benefits of positive psychology interventions (PPIs) and the application of PPIs in education settings. I will then discuss the empirical support for the benefits of positive psychology interventions (PPIs) and the application of PPIs in education settings.

Positive Psychology: Definition

Positive psychology encourages studying how individuals flourish and live their best lives (Seligman & Csikszentmihalyi, 2000). Positive psychology aims to seek, understand, and promote facilitating factors and opportunities for individuals, communities, and the overall society to flourish (Seligman & Csikszentmihalyi, 2000). Asserting that mental health is more than the absence of psychopathology and negative affect such as depression and anxiety, Seligman (1995) encouraged the psychological community to focus on individual strengths and fulfilling individual lives. The enhancement of life factors such as individual strengths, finding meaning in one's life, ability to regulate emotions, effective coping skills, and cognitive appraisal (Lyubomirsky et al., 2005) will help individuals live in the current moment and have a positive outlook of the future (Seligman, 2002).

Linley et al. (2009) described positive psychology as developing the motivation necessary for optimal functioning. Positive psychology has been utilized in different domains. For example, in counseling interventions, positive psychology fosters personal growth, autonomy, and better interpersonal relationships (Linley et al., 2009). Interventions used in counseling, including forgiveness, gratitude journaling, acts of kindness, nurturing relationships, and goal setting, have had positive effects, including increased happiness (Magyar-Moe et al., 2015). Industrial and organizational psychology uses positive psychology approaches, such as building self-efficacy, optimism, and resilience, as a positive impact on people and the organizations where those individuals work. The interventions may contribute to increased job performance and worker engagement and reduced job-related stress (Donaldson et al., 2018).

Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment (PERMA)

Well-being is the experiencing of optimal experiences and overall functioning (Ryan & Deci, 2001). Two well-known well-being perspectives include a hedonic approach, which consists of the avoidance of pain and attainment of pleasure, and a eudemonic approach, which includes the entire functioning of a person (Waterman, 1993). Seligman (2011) developed a framework for well-being that includes positive emotions, engagement, relationships, meaning, and accomplishment (PERMA). These enabling conditions for well-being provide a framework that supports individual well-being and achievement while simultaneously developing a person's capacity to contribute to society (Waters, 2011). Each pillar of PERMA provides the building blocks for well-being (Donaldson et al., 2022). Positive emotions include feeling happiness, joy, and gratitude in the present. Engagement is described as experiencing feelings of flow and being submersed in the experience when engaging in individual life experiences. Relationships include an ability to develop and maintain meaningful connections with others that are mutually beneficial and have feelings of love and being loved and feeling appreciated by others. Meaning is seen in a larger context where one feels connected to something greater than themselves and that life has a higher meaning and purpose. Finally, accomplishment identifies one's mastery over something that interests them or has achieved a sought-after goal (Seligman, 2011).

Broaden and Build Model

Positive psychology was an up-and-coming perspective in the psychology field in the late 1990s and given that psychology’s focus had been on negative emotions

associated with mental disorders, Fredrickson (1998) cited a need for theoretical models to adequately discuss the function of positive emotions such as joy, interest, contentment, and love. The Broaden and Build model was proposed by Fredrickson (1998), who posited that positive emotions could increase one's cognition and ability to focus and pay attention and produce optimal functioning both in the moment and over the long term. Positive emotions would lead to behaviors that provide individuals with the resources to overcome obstacles and pursue continued growth. Similarly, cultivating positive emotions can buffer or decrease the effect of negative emotions (e.g., sadness, fear, or anger). Just like fear leads to the tendency to run, positive emotions lead a person to embrace the moment, strengthen interpersonal relationships, and see the possibility in things (Conway et al., 2012; Fredrickson, 2004). Based on the broaden and build model, providing students the opportunities and means to develop and experience positive emotions through curriculum-embedded activities may foster higher levels of well-being (Fredrickson, 2000).

The broaden and build process is explained as a feedback loop where positive emotions inspire a person to broaden their horizons and explore new ideas and activities, and even relationships. This openness to exploration then builds new skills the individual uses to build new friendships and explore better problem-solving techniques, leading to experiencing or strengthening positive emotions (Conway et al., 2012; De Gree, 2022; Fredrickson, 2004).

Positive Psychology Interventions

The overall premise of positive psychology is to study the circumstances and development that contribute to the optimal functioning of people, groups, and institutions

(Gable & Haidt, 2005). Positive psychology interventions (PPI) are seen as a beneficial and optimal link between positive psychology and well-being (Seligman et al., 2005). PPIs develop the modalities, the same techniques typically used to explain the weakness and prevent or treat illness, needed to understand the mechanism of positive emotions and offer guidance and opportunities to learn about and focus on those positive emotions (Lopez & Gallagher, 2015). Typical psychological interventions try to change the negative effect of difficulties individuals may struggle with (i.e., adjustment issues, relationship issues, or mental health issues). However, PPIs focus on the positive side of function by focusing on qualities such as happiness, hope, well-being, kindness, and love, for example (Kobau et al., 2011). In their meta-analysis of 51 PPIs, including mindfulness, positive writing, hope therapy, forgiveness, and gratitude, Sin and Lyubomirsky (2009), found that most of the interventions were effective treatments for enhancing well-being and improving depressive symptoms. This finding was supported by another meta-analysis by Bolier et al. (2013), who identified significant effect sizes for 55 studies that identified PPIs for increasing well-being and reducing feelings of depression. My dissertation will use gratitude interventions to promote positive affect and decrease negative affect. In the next section, I will explain gratitude and the distinction between state and trait gratitude. I will then discuss the types of empirically supported gratitude interventions currently used and the positive outcomes associated with the interventions.

Gratitude and Gratitude Interventions

McCullough et al. (2001) identified gratitude as a response and motivator brought on by others. People, or "beneficiaries," respond with gratitude when other people,

"benefactors" (McCullough et al., 2001, p. 250), act in a way that promotes the well-being of the beneficiaries. Beneficiaries pay it forward when made grateful by benefactors and encourage well-being in other people. Mccullough et al. (2001) posits three main functions of gratitude. The first is characterized as the awareness a person obtains, feelings of gratitude when those around them do something that contributes to their well-being. This includes the time, money, and effort taken by the other person towards the receiver of the wellbeing, ending in the belief that the beneficiary has benefited from the action of the benefactor. The second function of gratitude extends to prosocial behavior, where the beneficiaries are motivated to act on their feelings of gratitude. People made grateful by benefactors are more likely to contribute or "reciprocate" (Mccullough et al., 2001, p. 261) to the well-being of others in the future. The third function of gratitude is behavioral. Responses to feelings of gratitude could be due to socially desired expectations, such as saying thank you, or due to self-interest because it is important to be seen in a socially positive way. Individuals with higher regard for prosocial behavior are also more prone to express gratitude after experiencing it more so than others, especially when beneficiaries see contributions towards them as sincere.

Gratitude can be theorized as both a state and a trait. State gratitude is a mood that manifests after a beneficiary receives something seen as valuable from a benefactor, leading the beneficiary to reciprocate those feelings to someone else (McCullough et al., 2001). Wood et al. (2008a) had 253 undergraduate students read vignettes about receiving help from another person (benefactor) that benefited them in a positive way (beneficiary). The outcome identified the positive impact of situational factors where the

participants with higher state gratitude experienced and appreciated the help provided to a greater degree than those with lower state gratitude. Specifically, it is appraised positively when situations offer help that is viewed as valuable, for example, being allowed to cut ahead of a person in line to make an appointment.

Trait gratitude is unique for everyone and identifies to what level gratitude is felt in daily life and includes the ability to acknowledge and respond positively to other people's benevolence (McCullough et al., 2002). Wood et al. (2010) described trait gratitude similarly to McCullough et al. (2002), as one's ability to feel appreciation towards the world, including emotions experienced from receiving something of value from someone else, directed towards others (Wood et al., 2008b) and headed towards themselves or appreciation for one's ability and experiences (Emmons & McCullough, 2003). McCullough et al. (2002) provide several facets to explain the trait gratitude. The authors conducted three studies with 1522 participants and identified specific psychological domains held by individuals with trait or dispositional gratitude. Individuals will feel gratitude more intensely, more frequently, and for a longer period, will have a broader number of individuals they feel gratitude towards. These individuals also experience higher levels of life satisfaction and positive emotions such as happiness and lower negative psychological effects such as depression and anxiety.

Gratitude interventions have been linked to effective positive outcomes, including activities to help individuals gain a sense of gratitude (Komase et al., 2021). Wood et al. (2008c) investigated trait gratitude and objective situations. Undergraduate participants (n = 253) read three vignettes with detailed situations and were asked to imagine being helped by another person, including a job reference, help with coursework, and receiving

help at a supermarket. Then, participants responded to five questions about the imaginary help received (i.e., How much was this person motivated by a sincere desire to help you?). Individuals with higher trait gratitude saw the imaged help they received more valuable and more altruistically intended than those with lower trait gratitude scores.

Gratitude interventions target both state and trait gratitude. Interventions focused on state gratitude are typically geared towards increasing feelings of gratefulness and subjective well-being. State gratitude is temporary or felt for a shorter duration and dependent on a person's interpretation of an event (McCullough et al., 2004; Wood et al., 2008a). Those geared towards trait gratitude also considered a trait or virtue, are considered an integral part of one's personality structure and would be considered more than just feeling grateful (Wood et al., 2010). State and trait gratitude are distinctive. Researchers might explore whether trait gratitude moderates positive activities' effect on an individual's state gratitude. In other words, a higher trait gratitude may make someone to appreciate the positive effect of a life event to a greater degree (Wood et al., 2010)

There are several gratitude interventions that demonstrate a positive relationship between state gratitude and well-being and provide opportunities for engagement in positive activities. The activities include counting blessings, three good things, grateful self-reflection, and a gratitude visit. (Emmons & McCullough, 2003; Fekete & Deichert, 2022; Lomas et al., 2014; Seligman et al., 2005; Wong et al., 2016). Emmons and McCullough (2003) developed counting blessings, a gratitude intervention during which experimental group participants were asked to keep a weekly gratitude journal. In contrast, a second group noted daily hassles and a control condition where participants were asked to identify any neutral event conditions that affected them the previous week.

All groups keep the journal for ten weeks. Individuals in the gratitude condition reported high feelings of well-being compared to the hassles and control groups. The rationale for the three conditions was to identify if focusing on one's blessings leads to better psychological outcomes than focusing on hassles, daily complaints, or life events considered neutral event conditions.

Another study focused on gratitude and expressive writing, and psychotherapy. Participants were randomly assigned to three conditions – two intervention conditions – gratitude writing and expressive writing – and a control group where participants received psychotherapy only (Wong et al., 2016). Participants in the gratitude writing condition were asked to write three letters in three sessions over three weeks expressing their gratitude to either the same person or three different people of their choice whom they felt they never adequately thanked. Then, they were asked to send the gratitude letters to the intended audience. The expressive writing group was asked to write down their stressful and upsetting experiences in three sessions over three weeks. Control condition did not partake in any writing but only in psychotherapy. Participants in the gratitude group reported better well-being and reduced feelings of depression and anxiety.

Expressive writing was identified as an effective means to help reduce anxiety and depression compared to individuals who received psychotherapy only (Graf et al., 2008). Like the Emmons and McCullough's (2003) study, comparing gratitude journals and gratitude writing to writing something like daily hassles and neutral events, and even expressive writing shown to alleviate feelings of depression and anxiety demonstrate the effectiveness of gratitude journaling interventions.

Cultural Relevance of Positive Psychology Interventions

Culture plays a meaningful role in the effectiveness of PPIs and must also be considered to accurately measure the effectiveness of the PPIs (Pedrotti, 2014). It has been noted that some characteristics, behaviors, and virtues "transcend" culture (Seligman & Csikszentmihalyi, 2000, p. 5); however, there are cultural differences that contribute to a person's identity and how individuals interpret and experience those characteristics, behaviors, and virtues. For example, in Western cultures, happiness is experienced based on personal achievement and individual success. On the other hand, Eastern cultures see happiness as a sense of harmony within their social sphere and interrelationships. Individuals from individualistic and collectivist communities may experience the interventions differently depending on their cultural perspectives. For example, Eastern societies focus on family and group belongingness, whereas Western societies focus more on the self or their individuality. Interventions that look to increase levels of well-being (i.e., happiness) but focus on personal experiences and self-reflection may be impactful for Western perspective participants since the interventions focus on personal growth but are not impactful for the collectivistic culture, which may look toward the interpersonal group for wellbeing. When developing, implementing, and measuring the effectiveness of PPIs and to reach a broader and ethnically diverse group of individuals, it is important to consider the cultural relevance of the PPI and overall effectiveness (Fekete & Deichert, 2022; Pedrotti et al., 2014; Uchida et al., 2004; Uchida & Kitayama, 2009).

Boehm et al. (2011) compared the effectiveness of happiness-enhancing strategies such as thinking optimistically about the future and gratitude letters. Life satisfaction was

measured with the Satisfaction with Life Scale (SWLS; Diener, 1984). White and predominantly foreign-born Asian Americans were randomly assigned to one of three groups: practicing optimism (thinking optimistically about the future), expressing gratitude (gratitude letter), and control (listing activities engaged in the last week). White participants in both intervention conditions experienced higher life satisfaction compared to Asian American participants. However, Asian American participants seemed to benefit from the gratitude condition compared to White participants in the same condition and control. This supports the idea that Asian Americans do better with interventions emphasizing social connectedness.

Studies on ethnically diverse samples suggest that some interventions, such as creative expression, random acts of kindness, and gratitude, are culturally relevant (Datu & Mateo, 2015; Janevic et al., 2022; Cavazos Vela et al., 2019). Latina(o) individuals who participated used art to express gratitude towards individuals they cared for, and African American individuals engaged in positive activities such as life highlights and acts of kindness, and gratitude jar as well as making time for pleasant activities, have benefited from these types of interventions, and demonstrated positive effects included gratitude, the presence of meaning in life, life satisfaction, and academic achievement and engagement.

Cavazos Vela et al. (2019) studied the impact of integrating positive psychology and creative arts on depression, resilience, and personal recovery in a Latina/o population. Latina/o adolescents, who participated in an 8-session positive psychology intervention with creative expression, learned about the importance of positive psychology and happiness, learned to express their emotions, experience gratitude, and

develop hope. Participants wrote gratitude letters to a person of significance and used creative expression to connect with their inner and outer personalities. Results indicated increased resilience, personal recovery attitudes, and decreased depression scores from the pretest to the post-test. Cavazos Vela et al. (2019) stated that using positive psychology and creative art was a promising method of increasing resiliency and decreasing depression in Latina/o students.

The African American community has used PPIs focusing on savoring, random acts of kindness, and gratitude to help patients manage their pain (Janevic et al., 2022). Citing positive activities to teach pain self-management, the goal was to teach individuals who suffer from pain a different method of dealing with the pain. Forty-six participants over the age of 60 who self-identified as experiencing musculoskeletal pain participated in a 7-week program that included positive psychology components. Participants were randomly selected into an intervention or control condition where the intervention group participated in positive activities such as acts of kindness, gratitude jar, and savoring experiences. The control group did not participate in any of the study activities. Participants in the intervention group identified a decrease in pain compared to the control group, who identified an increase. An increase in physical functioning and social participation was also identified for the intervention group, whereas control either remained the same from baseline to follow-up or decreased slightly.

In sum, studies have empirically evaluated and supported the impact of positive psychology interventions across diverse populations (Janevic et al., 2022; Cavazos Vela et al., 2019). Although PPIs, for the most part, have been implemented and examined in a Western cultural context, empirical studies have shown that some characteristics,

behaviors, and virtues can “transcend” culture (Seligman & Csikszentmihalyi, 2000, p. 5) and become broadly applicable to diverse groups. Thus, both BIPOC and White individuals can benefit from positive interventions.

Positive Education

Positive education is defined as "applied positive psychology in education" (Green et al., 2011; p. 16) that combines traditional academic skills and skills for happiness and well-being (Seligman et al., 2009) and is based on the premise that positive emotions can be cultivated in schools (Green et al., 2011; Seligman et al., 2009). Waters (2011) reviewed 12 school-based positive psychology interventions, including those focusing on hope, gratitude, serenity, and resilience. Waters (2011) concluded that positive psychology interventions generally contribute to students’ well-being and academic performance, such as increased well-being, self-worth, goal setting, and academic achievement.

Positive Psychology Curriculum-Embedded Interventions

Curriculum-embedded intervention is defined as those "that can be implemented in the classroom setting without the extensive need for time, material, or expertise" (Shankland & Rosset, 2017; p. 365). Studies use curriculum-embedded, course-based, and classroom-based terminology interchangeably to identify the inclusion of PPIs as part of the course content. Including PPIs in undergraduate coursework enhances student engagement (Hammill et al., 2020). Traditional interventions could be considered lengthy (8-12 sessions), and a high number of sessions could mean few undergraduates would show up for all the sessions (Feldman & Dreher, 2012). Course-based interventions reach

more students than traditional one-to-one or group interventions, including cultures hesitant about counseling interventions (Zhang et al., 2020).

Zhang et al. (2020) tested positive psychology, a classroom-based intervention with Chinese medical students. The intervention was offered as an elective course structured as a typical college course meant to improve well-being and decrease depressive symptoms. The authors structured the course for 1.5 hours a week for eight weeks. Coursework included gratitude-related content and out-of-class activities. Offering the intervention as coursework was desirable to the students. Zhang et al. (2020) measured hope, life satisfaction, happiness, depression, and anxiety. Results indicated positive results with increased hope, life satisfaction, and happiness and decreased depression and anxiety. The study had a preliminary study with an independent group participating in the same study design the following year. Both groups demonstrated increased hope, life satisfaction, and happiness and decreased depression and anxiety.

Online Positive Psychology Interventions

The accessibility and delivery of mental health treatments and interventions to as many individuals as possible are essential to mental health treatment (Mitchell et al., 2010). Interventions accessible via the Internet have steadily increased since 1999. These include interventions directed at depression, body image, nutrition, and disorders such as depression, anxiety, and phobias (Mitchell et al., 2009). What was seen at one time to access information, the internet has now become a staple in day-to-day activities, including accessing information related to mental health care (Mitchell et al., 2010).

Ritterband et al. (2003) described mental health internet-based interventions as those that hold "highly structured treatment approaches to many problems," "treatments

can be operationalized, transformed, and transported to the user via the Internet," and allows psychologists the opportunity to "provide specific behavioral treatments, tailored to individuals who prefer or need to seek help from their own homes" (p. 528). When compared to traditional, in-person interventions, online treatments reduce barriers to treatment, such as conflicts with conventional school schedules (employment, school), and more immediate interventions with reduced sessions which then lead to cost savings (Fekete & Deichert, 2022; Ritterband et al., 2009; Tate et al., 2009).

Early studies of online positive psychology intervention (OPPI) focused on several different behavioral interventions, including smoking cessation, physical health improvements (diabetes, exercise), weight loss, and psychology disorders (panic, PTSD, body image) (Ritterband et al., 2003). Over time, online interventions became more focused on self-help options to increase well-being and happiness and reduce depression (Ouweneel et al., 2013; Sergeant & Mongrain, 2014; Wellenzohn et al., 2016). The Covid-19 pandemic and lockdown highlighted the need for availability, access, and adequate implementation of online interventions when individuals could no longer meet in person for traditional sessions. Current online interventions studied the effectiveness of web-based interventions on college student well-being. This included college students (Liu et al., 2020). Outcomes identified positive effects with improvement in positive moods (Chilver & Gatt, 2022; Liu et al., 2021; Yurayat & Seechalioa, 2021).

To date, PPIs have focused on in-person, workshop-type, or online interventions. Sergeant and Mongrain (2014) looked for the difference between an online intervention focused on optimism and a neutral exercise, such as writing in a diary, and identified those in the optimism intervention group experienced an increase in happiness compared

to the neutral exercise. More recent studies compared the effects of OPPI on optimism between an online intervention and a control condition (writing group). They even assessed the impact of an OPPI by comparing the use of future imagery of campus life and a reminder to keep healthy, such as hand washing and wearing masks, on undergraduates during Covid-19 (Heekerens et al., 2021; Liu et al., 2021).

Person-Activity Fit Model

While positive psychology interventions have been shown to be effective in promoting overall well-being (Sin & Lyubomirsky, 2009), few studies have examined if and how specific PPI techniques work for all individuals (Schueller, 2014). The person-activity model (Lyubomirsky & Layous, 2013) attempts to explain how PPI activities contribute to more individuals feeling the effects of those PPI activities. Standard interventions are typically applied across the board to all individuals struggling with any one negative emotion. The activities within those interventions may be followed due to the nature of the intervention and not necessarily due to a person's tendency towards the activity (Schueller, 2014). They may depend on a person's culture, personality, and motivation for the activity (Lyubomirsky & Layous, 2013). For example, a gratitude intervention, using writing gratitude letters to others, requires the ability to self-reflect and notice and appreciate positive components of everyday life. This activity may not match individual approaches to gratitude when applied in an area where gratitude is not usually discussed, for example, in a non-psychology environment (Hammill et al., 2020). Providing participants with a choice in the type of gratitude intervention may lead to better outcomes (Fekete & Deichert, 2022). Person-activity fit activities should provide novel experiences individuals would not usually seek (Schueller, 2014). Culture also

plays a role in the effectiveness of positive psychology interventions. For example, individuals from collectivist societies may fair better with expressing gratitude towards others than individuals from individualistic cultures. Those in an individualist society may feel reduced autonomy (Fritz & Lyubormisrsky, 2018).

The person-activity model positions (Figure 1) that activity features and person feature moderate positive psychology interventions' overall impact. Activity features, such as frequency and duration, types, and collaboration, are a function of intervention success. Lyubomirsky and Layous (2013) identified activities performed one day per week as more impactful than multiple times over one week (frequency), allowing activity options to encourage participants to engage longer in something they find pleasurable (variety and duration) and a social support component, such as social media messages with positive activities, maximize the benefits of the positive activities (collaboration). Within the activity features, factors contributing to different effects (between interventions) include the impact of life placement and asking individuals to reflect on their lives. Younger people may benefit more from thinking about the future than older individuals. Culture also plays a prominent role where the Western world sees personal growth as important and meaningful. In contrast, eastern cultures may respond better to focusing on others than themselves (Lyubomirsky & Layous, 2013).

Person features, or individual characteristics, such as determination, beliefs in positive outcomes, outgoingness (extraversion), baseline emotion at the time of intervention, perceived social support, and cultural factors, such as age and ethnicity, also matter. Lyubomirsky and Layous (2013) positioned further that individuals with drive and intention (determination) are not only more likely to engage in the interventions

(outgoingness) but also anticipate better outcomes (beliefs). Those who seek out support from others (perceived social support) participate more often in the intervention activities, and age and acculturation seem to play a role in the willingness to engage in the activity and the usefulness of the activity (Lyubomirsky & Layous, 2013). Engaging in positive activities, through the lens of activity and personal features, lead to increased positive emotions such as well-being. The success of obtaining a higher level of well-being is determined by how enjoyable and important the positive activity is to the person. For optimal effectiveness, the individual must first see the value and have a level of interest in the activity; if the activity provides positive reactions, cognition, behaviors, and overall satisfaction, well-being increases (Lyubomirsky & Layous, 2013).

Personality factors should also be taken into consideration. Schueller (2012) applied a gratitude visit intervention with college undergraduates and found that introverts had better outcomes when choosing between calling their person and visiting them. Calling someone for a gratitude visit instead of physically visiting the person increased the overall well-being of introverts. The opposite was true for extroverts, who demonstrated higher levels of well-being after physically seeing the person. Motivation is another important factor when determining person-activity fit activities. When activities align with individual interests and values, motivation towards those activities should increase, as should the overall positive impact. Sheldon and Lybumirsky (2006) conducted a positive psychology intervention longitudinal study using counting one's blessings and best possible selves (Emmons & McCullough, 2003; King, 2001). A control condition was also used when participants were asked to reflect on their daily experiences. Sixty-seven undergraduate students from an introductory psychology class

were randomly assigned to the counting one's blessings, best possible selves, or control condition. A measure developed by the authors assessed motivation to continue engaging in the intervention. Results identified that counting one's blessing and best possible self-interventions provided higher motivation to continue the interventions.

The person-fit activity model will be utilized to ensure most student participants receive the most out of the gratitude activities and have each intervention delivered seamlessly throughout the quarter (Lyubomirsky & Layous, 2013). First, Canvas will be used to administer the pre-and posttest measures, instructions with gratitude prompts, and submission of completed gratitude prompts. The LMS is typically used in the introduction to psychology course from which the sample will be taken. Activities will be introduced weekly, beginning in week four until week eight, to align with how the current instructor of record has the course set up. This also aligns with the activity features of the person-activity fit model, where duration and frequency are important to maximize activity effectiveness. This supports Lyubomirsky and Layous's (2013) recommendation that single-session activities are more impactful than multiple activities in the same week.

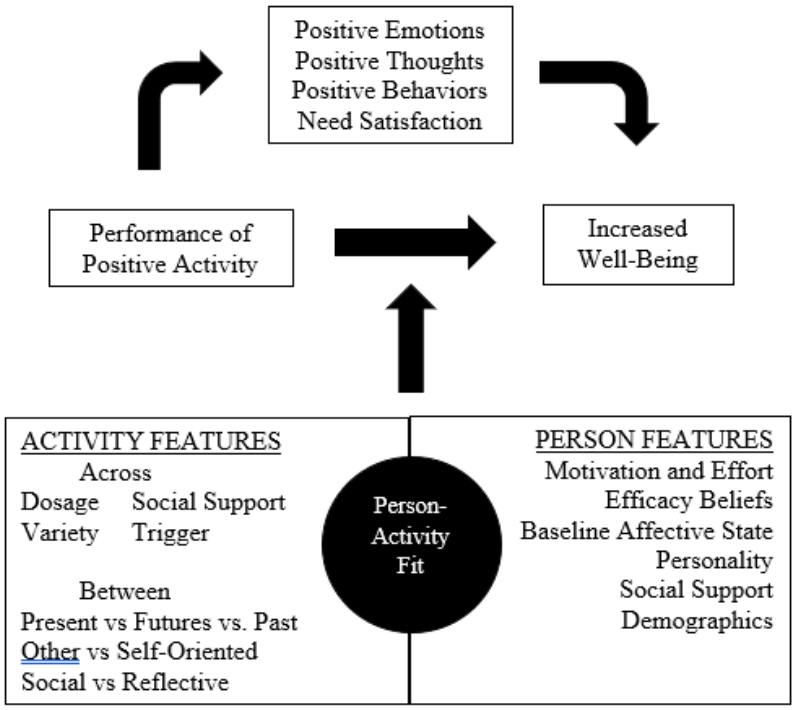
Second, since the gratitude interventions will be curriculum-embedded, point values will be applied to the pre-and posttest and each gratitude activity. This aligns with the motivation component of the person-activity fit model; when activities align with individual interests, in this case, the activities should increase the overall impact, meaning point values must be seen as valuable by students for them also to give their fullest effort. The student must see value in the activity; point values may be one way to meet this expectation.

Third, the gratitude activities were chosen due to their empirically supported use, ease of implementation, and applicability. Since the course addresses psychology content, presenting assignments related to positive psychology will seem natural to students. PPIs that utilize gratitude activities have increased well-being and overall satisfaction (Lyubomirsky & Layous, 2013). This would fall under the person features of the person-activity fit model, where individuals will engage in the content of activities that match individual interests and values. PPIs that use gratitude activities have also been shown to be effective across cultures. This will help reach more students, especially students of color.

The counting blessings journal entries, gratitude letters, and three good things activity will be qualitatively examined for content. The effectiveness of the gratitude activities will be determined by using student responses to the exit survey where they will be asked if the activities were meaningful to them. The moderating effects of participants' background, including ethnicity, gender, and college generational standing, on PPIs will also be examined.

Figure 1

Person-Activity Fit Model



Note: Adapted from "How do Simple Positive Activities Increase Wellbeing?" by S. Lyubomirsky and K. Layous, 2013, *Current Directions in Psychology Science, 22*, p. 58. In the public domain.

Chapter Three: Method

Waters (2011) rationalized PPIs should be implemented by anyone, not just trained counselors or clinicians. The goal of the current study was that by providing a curriculum-embedded intervention delivered asynchronously as part of the course structure, instructors have options to implement a PPI to impact students' overall mental health—currently, not all student access college campus mental health resources. Students who do reach out to counseling services face a long wait time before they see a counselor (Druckenmiller, 2022). Providing curriculum-embedded interventions will reach more students, reduce barriers and stigma related to counseling services, and provide equity and access to all students in the classroom (Ritterband et al., 2009; Tate et al., 2009). Instructors who want to provide extra support to students and who desire to use PPIs may feel they are not qualified to implement the PPI because of the misconception that only trained psychologists can do so. They are also concerned that adding an intervention to their course would be time-consuming and require additional professional development (Shankland & Rosset, 2017). However, gratitude interventions are easy to administer and understand and require little resources or training (Shankland & Rosset, 2017). With the additional support of a curriculum-embedded PPI, instructors could help facilitate and promote student well-being.

Research Questions and Hypotheses

1. Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants?

H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to control group participants.

H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants.

2. Will participants in the Gratitude Intervention group experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when the control group participants.

3. Will participants in the Gratitude Intervention group experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

4. Will participants in the Gratitude Intervention group experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in well-being – as measured by their level of subjective well-being – from pre- to posttest when compared to the control participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in well-being – as measured by their level of subjective well-being – from pre- to posttest when compared to the control participants.

5. Will race, gender, or college generational standing moderate the effect of the gratitude intervention on negative affect, stress, well-being, and gratitude?

Research Design

This study utilized a nonequivalent control group pretest-posttest quasi-experimental design since there was a lack of experimental control and random assignment was impossible with the college student population of interest. Pretest-posttest nonequivalent group designs give the treatment group a pretest, followed by the treatment or intervention, and lastly, given the post-test. The nonequivalent control group is given the pretest, does not receive the treatment or intervention, and is then given the post-test (Cook & Campbell, 1979; Figure 2). The nonequivalent control group pretest/post-test quasi-experimental design has been identified as one of the educational

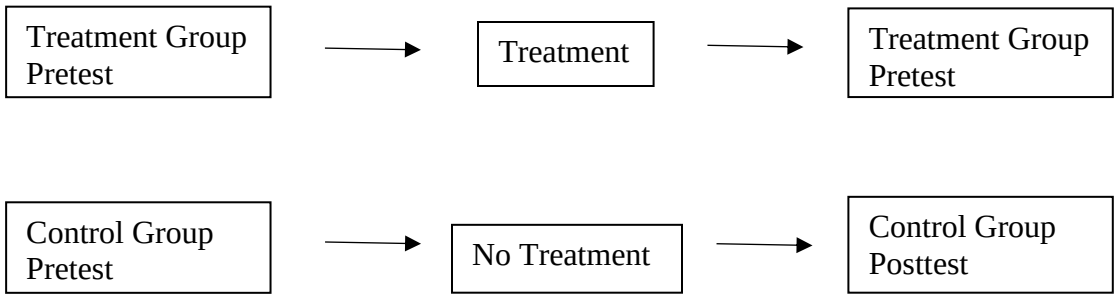
research's most widespread experimental designs. It is ideal when researchers cannot do random assignment (Campbell & Stanley, 1966). In this study, students were self-selected into one of two sections of an introduction to psychology course. This constituted a naturally assembled collective such as classrooms.

Figure 2

General Diagram of Pretest-Posttest Quasi-Experimental Design

O_1 X O_2

O_1 O_2



Note. Adapted from "Quasi-Experimentation: Design & Analysis Issues for Field Settings" by T. D. Cook and D. T. Campbell, 1979, p. 104. Copyright 1979 by Rand McNally College Publishing Company. Reprinted with permission.

Study Procedure

Two traditional, in-person sections of Introduction to Psychology were taught in the autumn of 2022. One section was assigned to the gratitude PPI, delivered online asynchronously as part of the course content. The other section was designated as the control group, where the same course content will be provided with no intervention. The gratitude PPI and control groups had the same instructor and course content over ten weeks.

The instructor reviewed the syllabus and course overview on the first day of the course. The experimental group was told about the pre-and post-assessment and some reflective activities related to the course content. The control group was only informed of the purpose of the pre- and posttest assessing their psychosocial well-being. The assessment and gratitude activities were built into Canvas, the Learning Management System for the university. Pretest was administered via Canvas at the end of week three after the college's prescheduled add/drop date. The posttest measures were delivered through Canvas at the end of week nine of the quarter. Since all intervention components were part of the course content, students receive credit for each pre- and posttest and the gratitude intervention activities. Please see Figure 3 for the study implementation flow chart.

Content of the Curriculum-embedded Gratitude Intervention

Several factors were taken into consideration in the development of the gratitude intervention in this study. First, information about gratitude, including the definition of gratitude (one 20-minute video) and an explanation of the gratitude assignments (five 5-minute videos), was delivered via Panopto video presentations through Canvas from week four through week eight. Gratitude information included McCullough et al.'s (2001) definition of gratitude, which explained the beneficiaries and benefactors of gratitude and the three main functions of gratitude – feelings of gratitude, prosocial behavior due to gratitude, and responses related to gratitude. The difference between trait and state gratitude was explained with examples.

Second, gratitude activities were provided asynchronously through Canvas and students were given one week to access each activity, which was due at the end of each

week. Each weekly activity was available by Noon each Monday. Lyubomirsky and Layous (2013) identified activities performed one day per week as more impactful than multiple times over one week. The rational being that engaging in multiple activities one day a week compared to every day for a week, for example five acts of kindness in one day instead of throughout the week and counting one's blessings once a week instead of three times a week, has a larger increase in wellbeing (Lyubomirsky et al., 2005). This also met the course assignment due date structure established by the instructor of record.

Weeks four and five asked students to "count one's blessings," where they were to identify and describe up to five things from the previous week that they were grateful or thankful for. The prompt included, "There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and list up to five things in your life you are grateful or thankful for" (Emmons & McCullough, 2003). The goal of this activity was to help students become aware of things they may be grateful for and encourage awareness of the good things in their lives. The gratitude activity also supports Seligman's (2011) PERMA model by providing an opportunity for positive emotions and engagement by having students recount blessings and positive experiences.

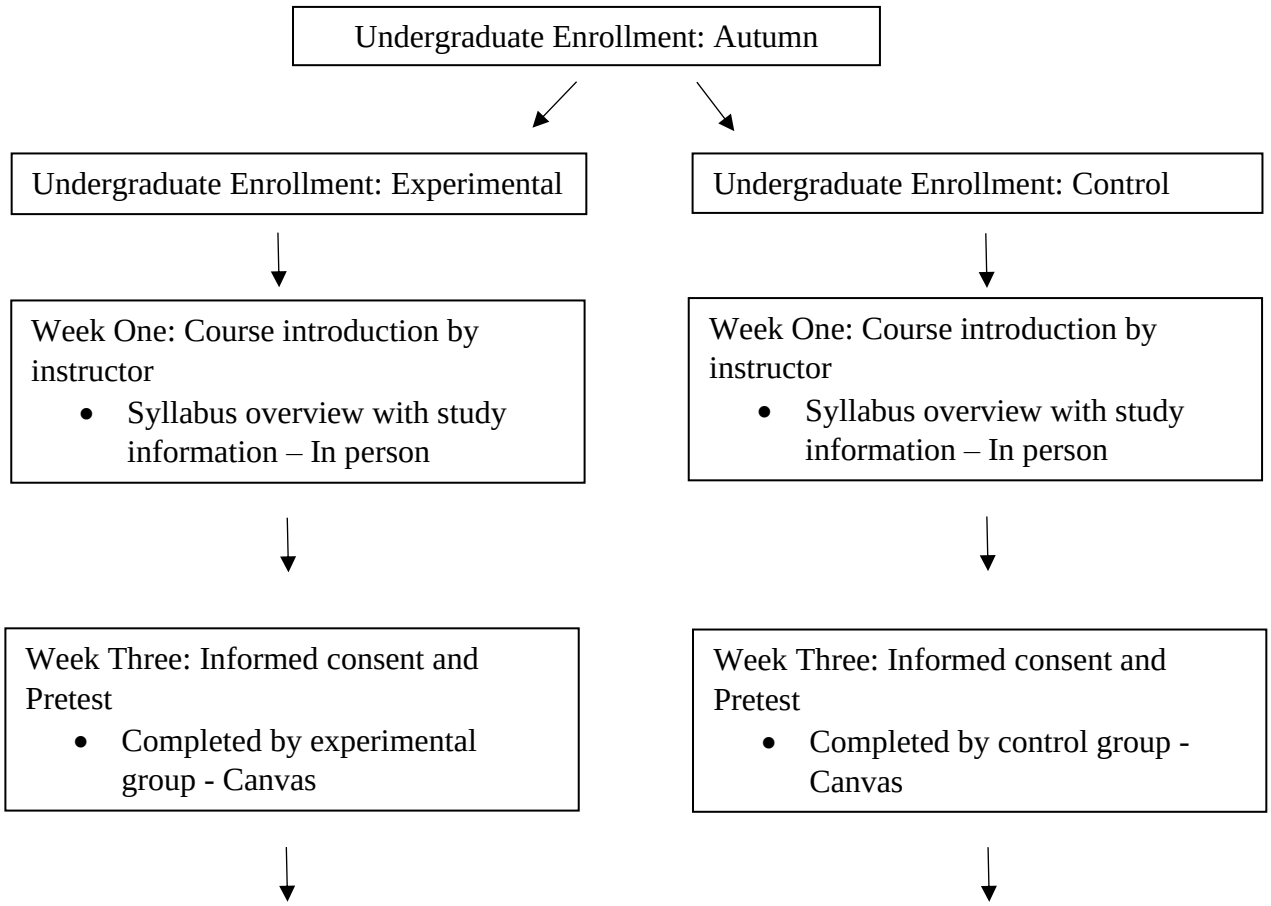
Weeks six and seven consisted of students identifying a person they are grateful to and writing a gratitude letter to that person. Students were required to submit the letter through Canvas as part of the course requirement. Students were encouraged to send the letter to the person, but it was part of the assignment requirement. This activity includes Morgan et al. (2015) recommendation of considering cultural factors when considering content related to positive psychology activities. Individuals from collectivist societies

may fair better with expressing gratitude towards others than individuals from individualistic cultures.

Week eight involved students completing the three good things activity (Seligman et al., 2009). Students were asked to write down three good things that happened to them the previous week, whether relatively small or important. They were then asked to reflect on the following questions: “Why did this good thing happen?”, “What does this mean to you?”, “How might this good thing inspire you to do the same to others?” (Seligman et al., 2009).

Figure 3

Study Implementation Flowchart



Week Four: Activity - Canvas
- Panopto presentation on gratitude
- Gratitude intervention
  - Identifying up to five things person is grateful or thankful for from the previous week

Week Four: No intervention

Week Five: Activity - Canvas
- Gratitude intervention
  - Identifying up to five things person is grateful or thankful for from the previous week

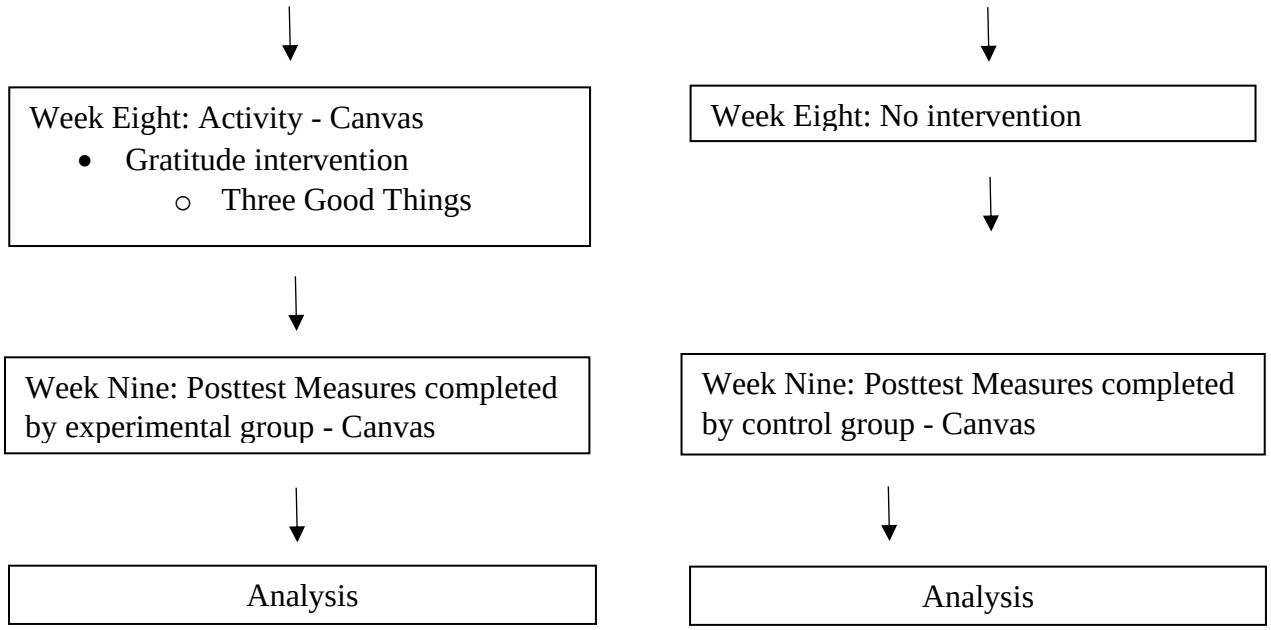
Week Five: No intervention

Week Six: Activity - Canvas
- Gratitude intervention
  - Gratitude letter
  - Participants will identify one person they are grateful to and will write a gratitude letter to that person

Week Six: No intervention

Week Seven: Activity - Canvas
- Gratitude intervention
  - Gratitude letter
  - Participants will identify one person they are grateful to and will write a gratitude letter to that person

Week Seven: No intervention



Population, Sampling, and Participants

Population and Sampling

This study recruited a sample of undergraduate students in an introductory psychology course from a large public university in the Pacific Northwest. The student demographics of the institution are typically as follows: between the ages of 18-21, with 51% identifying as White, 19% as Latina(o), 12% as African American, and .26% as Pacific Islander (Hanson, 2022). First-generation college students outnumber continuing generations by 65%, where only 50% live on campus compared to commuting to school (Kelchen, 2018; Rivera, 2022). The Introduction to Psychology course is a required general elective course at the college and typically enrolls freshman and transfer students. Introductory courses are generally used to obtain convenience samples of undergraduate students (Sieber & Saks, 1989).

I currently teach at the university but do not teach the Introduction to Psychology courses. The convenience sample method of obtaining participants is due to my access to

the population of interest. The expected sample size for each group (experimental and control) is at least 45 students. The maximum class size is 150 students and typically fills to at least 80% of capacity.

The final sample of participants included mostly first-year students (78.7%), 18 years of age (58.6%), female (51.5%), and White (53.3%). Table 1 provides a detailed breakdown of Gratitude Intervention and Control Group participant characteristics.

Table 1

Demographic Characteristics of Participants at Baseline

	Gratitude Group		Control Group	
	n	%	*n*	%
Gender				
Male	39	54.2	38	39.2
Female	32	44.4	55	56.7
Non-Binary	1	1.4	3	3.1
Other			1	1.0
Race				
Asian/Asian American	2	2.8	5	5.2
Black or African American	6	8.3	3	3.1
Hispanic or Latino or Spanish Origin or any race	8	11.1	18	18.6
White	41	56.9	49	50.5
Native Hawaiian or other pacific islander	1	1.4		
Two or more races	14	19.5	21	21.6
Prefer not to answer			1	1.0
Academic Standing				
First Year	57	79.2	76	78.4
Sophomore	9	12.5	10	10.3
Between Sophomore and Junior	1	1.3	1	1.0
Junior	2	2.8	9	9.3
Senior	3	4.2	1	1.0
Employment Status				
Not working	52	72.2	71	73.2
Working parttime	16	22.2	21	21.6
Working fulltime			4	4.2

	Gratitude Group		Control Group	
Other	4	5.6	1	1.0
Parent earned four-year degree[a]	24	33.3	47	48.5
Sought mental health support[a]	33	45.8	48	49.5

Note. $N = 169$ ($n = 72$ for the gratitude group and $n = 97$ for the control group).

[a] Reflects the number and percentage of participants answering "yes" to this question.

Instruments

The pre-and posttest comprised of demographic questions and four measures: the Brief Symptom Inventory for depression, anxiety, and somatization, a global index of distress; the Perceived Stress Scale for stress; the Flourishing Scale for well-being; and the Gratitude Questionnaire for feelings of gratitude. All scores are averaged. The higher the score, the stronger the magnitude of the construct (e.g., a higher PSS score indicates a high level of perceived stress). A demographic survey was used to capture student demographics and an exit survey (only for the Gratitude Intervention) was used to evaluate the acceptability and perceived usefulness of each gratitude activity.

Brief Symptom Inventory (BSI-17)

The BSI-17 (Derogatis, 2000; BSI-18 but without suicide ideation item), a shortened version of the BSI-53, is a 17-item scale used to identify levels of somatization (e.g., perceived physical problems), depression (e.g., feelings of apathy or sadness), and anxiety (e.g., feelings of fear, generalized tension). The sum of all three scales constitutes the global severity index (GSI) used to identify psychological distress of all three scales. The inventory asks test-takers to identify their level of distress, based on a Likert-type scale from 0 (not at all) to 4 (extremely) if they experienced inventory items within the past seven days. The somatization scale includes six items (e.g., Faintness or dizziness), the depression scale has six items (Feeling no interest in things), and the anxiety scale

includes six items (e.g., Nervousness and shakiness inside). Scores range from 0 to 24 for each scale, with higher scores representing higher levels of somatization symptoms, depression, and anxiety. Total scores for the GSI range from 0 to 72, where higher scores indicate higher levels of psychological distress.

The BSI-17 has been used in numerous populations and is a reliable instrument for assessing psychological distress in the general population. Initial validation utilized a community sample of 1,134 adults with internal consistency scores at an acceptable score of .74 for the somatization scale, .79 for the anxiety scale, .84 for the depression scale, and .89 for GSI (Derogatis, 2000). Asner-Self and colleagues (2006) conducted a cross-cultural analysis of the BSI-18 with Central American immigrants and refugees (N=100; Salvadoran, Guatemalan, Nicaraguan, Honduran, and Costa Rican). Internal consistency scores identified .81 for the somatization scale, .81 for the depression scale, .81 for the anxiety scale, and .91 for GSI. Franke et al. (2017) validated the BSI-18 with a German sample and reported good internal consistency scores of .82 for somatization, .87 for depression, .84 for anxiety, and .93 for GSI. More recently, Geng et al. (2022) validated the inventory with a Chinese adult sample (n = 2217) and concluded the BSI-18 is a reliable and effective tool for screening psychological symptoms and can be used to screen general psychological distress.

In the present study, only the depression and anxiety subscales were used. Cronbach's alpha scores from both pre-and posttests matched closely with previously reported ranges from .84 to .90 for depression and .80 to .90 for anxiety for both the gratitude PPI and control groups.

Perceived Stress Scale (PSS-10)

The Perceived Stress Scale (Cohen et al., 1983) is a psychological instrument used to measure the perception of stress. The 10-item version is a revision of the original published 14-item version. Test-takers are asked about thoughts and feelings during the last month and assessed on how they appraise their life as stressful, specifically, life perceived as unpredictable, uncontrollable, and overloaded. The PSS contains ten items (e.g., In the last month, how often have you been upset because of something that happened unexpectedly?) and uses a 5-point scale ranging from 0 (never) to 4 (very often). Scores range from 0 to 50, with higher scores identifying greater stress.

The PSS-10 is a valid measure of stress in college students and the general population. Cohen et al. (1983) used three samples, two samples of college students and one from the general population (n = 510); psychometric property validation consisted of an internal consistency score of .84, 85, and .86 for each of the three samples. Cohen and Williamson (1988) used a general population sample of 2,387 with an internal consistency score of .81. The PSS is often used in research involving university students. Lee et al. (2021) studied the impact of Covid-19 on stress with 2691 students with an internal consistency score of .87. Cronbach's alpha scores were consistent with previous studies with a range from .84 to .88 for both the gratitude PPI and control group.

Flourishing Scale

The Flourishing Scale, previously known as the Psychological Wellbeing Scale, was developed by Diener et al. (2010). The scale includes eight statements (e.g., I lead a purposeful and meaningful life) meant to measure human functioning and uses a 1 (strongly disagree) to 7 (strongly agree) Likert scale. Items address social relationships (e.g., supportive and rewarding relationships), purposeful and meaningful life, interest in

one's activities, self-respect, optimism, and social competence (Diener et al., 2010). Scores range from 8 to 56, with higher scores representing higher levels of functioning, psychological resources, and strengths.

The Flourishing scale has been used in numerous populations and is a valid and acceptable measure. Umucu et al. (2019) studied student veterans and the relationship between flourishing and personality traits. Two hundred-five participants were selected from a mid-western college. Outcomes indicated a reliability coefficient of .91 and positive correlations with positive psychological constructs such as optimism ($r = .69$, $p < .001$) and life satisfaction ($r = .72$, $p < .001$) and negative correlations with depression ($r = -.65$, $p < .001$), anxiety ($r = -.50$, $p < .001$), and stress ($r = -.60$, $p < .001$). Clements et al. (2021) recruited a sample of trans and nonbinary participants ($n = 11$) and provided a brief intervention that discussed and promoted positive psychosocial experiences of trans and nonbinary individuals, including self-worth, self-acceptance, and pride in one's identity. Results indicated an internal consistency score of .84 on the Flourishing Scale.

Diener et al. (2009) obtained a sample of 568 undergraduate students and identified internal consistency alphas score of .86. Diener et al. (2010) sampled 689 college students from six locations, Singapore, East Carolina, Virginia, New Jersey, Illinois, and California to establish psychometric properties for the Flourishing scale. Results identified an internal consistency alpha score of .87. The Flourishing Scale has been validated in Spain (Checa et al., 2018), Chile (Carmona-Halty et al., 2022), China (Tan et al., 2021), and India (Singh et al., 2016). It has also been used in adult and adolescent populations (Carmona-Halty et al., 2022; Checa et al., 2018; Singh et al., 2016; Tan et al., 2021). It is a reliable and valid measure for assessing psychological

well-being (Carmona-Halty et al., 2022; Checa et al., 2018; Singh et al., 2016; Tan et al., 2021). Cronbach's alpha scores were consistent with previous studies, ranging from .82 to .88 for both the gratitude PPI and control group.

Gratitude Questionnaire

The Gratitude Questionnaire (GQ-6; McCullough et al., 2002) is a six-item self-report questionnaire used to assess experiences of gratitude in daily life (e.g., I have so much in life to be thankful for), rated from 1 (strongly disagree) to 7 (strongly agree). Scores range from 6 to 42, with higher scores denoting greater feelings of gratitude. Internal consistency alpha scores across various populations range from .76 to .84 (McCullough et al., 2002). Langer et al. (2016) reported an alpha of .83 for a Chilean sample, Loo et al. (2014) reported an alpha of .80 for a Taiwanese sample, and Caputo (2016) reported an alpha of .74 for an Italian sample. The Gratitude Questionnaire was initially validated with a normative sample of healthy college students (Cousin et al., 2020; McCullough et al., 2002). Cousin et al. (2020) studied the questionnaire's factor structure, validity, and reliability with 298 African American community participants at risk for cardiovascular disease. Results identified a moderate alpha of .729, exploratory factor analysis extracted a one-factor solution, and confirmatory factor analysis identified a reasonable fit to the data, suggesting the Gratitude Questionnaire as a valid and reliable measure. Cronbach's alpha scores were consistent with previous studies, ranging from .70 to .78 for both the gratitude PPI and control group.

Demographic Survey

The demographic survey asked participants about their gender (e.g., male, female, nonbinary), age, race, college generational standing (first-generation, continuing

generation), academic standing, employment status, and if participants sought mental health support.

Exit Survey for the Gratitude Intervention Group Participants

The exit survey developed by this author included items asking about each gratitude activity's helpfulness (e.g., I found the gratitude letter helpful), rated from 1 (not helpful at all) to 4 (very helpful).

Data Analysis

SPSS 28.0.1.1 was used in the quantitative data analysis. All data, before analysis, was screened and transformed as needed. Screening of raw data included review data for outliers and missing values. Mean score replacement was used for any missing data. Assumption checks of normality, linearity, and homogeneity of variance were also conducted. Demographic information and all variables used in this study were analyzed via descriptive analysis (e.g., mean, standard deviation).

A two-way repeated measure univariate analysis of variance (ANOVA) was used to evaluate the significance of mean differences between two groups at two different time periods. This approach allows the comparison of group differences with one dependent variable (Mertler & Vannatta, 2010). Participants are measured twice, pretest and posttest, after an intervention. Using the same subjects reduces variability among participants, making the design more powerful than a randomized design (Stevens, 2009). A repeated measures ANOVA was also used to identify whether the effects of the gratitude intervention were moderated by race, gender, and college-going generational standing. The within factors were time, pretest, and post-test, for depression, anxiety, and stress. The between-subject factors were race (White, BIPOC), gender (male, female,

nonbinary), and generational college standing (first-generation, continuing-generation). A post hoc confirmatory analysis was conducted using independent samples *t*-test to investigate the ANOVA findings further. Since the sample sizes are unequal and the independent sample *t*-test used to measure any moderating effects, which reduced the sample size and contained unequal sample sizes, the effect size will be reported using Hedges' g (Hedges, 1981).

Chapter Four: Results

The present study examined the effectiveness of a gratitude intervention in reducing college students' anxiety, depression, and stress and increasing their sense of gratitude and well-being compared to a control group. A summary of research questions and hypotheses is provided as follows:

1. Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest, when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to control group participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants.

2. Will participants in the Gratitude Intervention group experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest, when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants.

3. Will participants in the Gratitude Intervention group experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.

4. Will participants in the Gratitude Intervention group experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control group participants?

   H_0: Participants in the Gratitude Intervention group will not experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control participants.

   H_1: Participants in the Gratitude Intervention group will experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control participants.

5. Will race, gender, or college generational standing moderate the effect of the gratitude intervention on negative affect, stress, well-being, and gratitude?

Data Screening

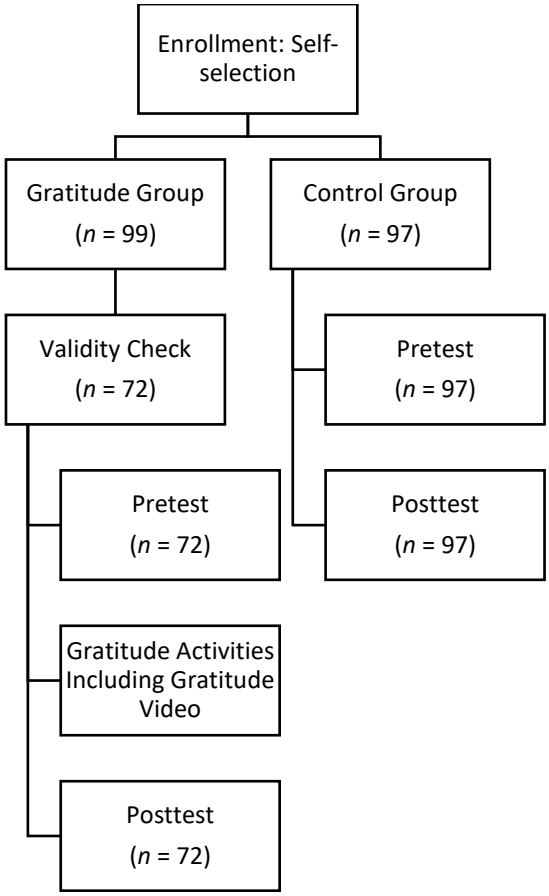
IBM-SPSS Statistics version 28.0.1.1 for Windows was used to compute all data analyses. Reverse-scored items per test instructions for perceived stress scale (PSS; 4, 5,

7, and 8) and gratitude questionnaire (GQ; items 3 and 6). Item averages were calculated for individuals who provided more than one response. Data screening addressed multiple-item responses, missing data, and outliers (Figure 4). Overall, missing data patterns were nonrandom but accounted for less than 5%. Field (2013) recommends dropping cases with missing values when 5% or less of data is missing. However, this would reduce the current sample size and possibly impact the overall analysis. Instead, mean replacement was used to replace missing values. This may reduce the variance since the actual value may not equal the mean. This approach is appropriate for group comparison analysis (Mertler & Vannatta, 2010). Mean scores were then computed for all pre-and posttest measures (gratitude and control group), including change scores for posttest minus pretest.

Prior to analysis, the original sample consisted of 239 participants (n = 114 gratitude group; n = 125 control group), where 24 opted out of having their assignments and measure results used in the study, two completed the pretest but did not provide consent, seven were under the age of 18, and 10 did not access the survey. Participants who completed only the pretest or only the posttest were removed (n = 13 gratitude group; n = 16 control group), leaving a total of 195 participants (n = 99 gratitude group; n = 97 control group). Finally, a validity check was conducted only for the participants in the gratitude group, ensuring only those who had viewed 75-100% of a gratitude informational video and completed three out of five of the gratitude activities were included in the final analysis. The validity check yielded a final sample of 169 (n = 72 gratitude group; n = 97 control group; Figure 3).

Figure 4

CONSORT Flowchart of Participants



Main Analyses

A 2 x 2 repeated measures ANOVA with time (pretest and posttest) as the within-subject factor and conditions (gratitude intervention and control) as the between-subject factor was used to examine scores across time and conditions. The moderating effects of race, gender, and college-going generation status on gratitude group participants' depression, anxiety, well-being, and gratitude were also examined. The moderation analysis also utilized a 2 x 2 repeated measures ANOVA with time (pretest and posttest) as the within-subjects and the demographic variables (race, gender, college-going generation status) as the between-subject factors. A post-hoc confirmatory

analysis was conducted using independent samples *t*-tests to investigate the ANOVA findings further.

Assumption Check

Prior to conducting the ANOVA analysis, assumption tests for independence, sufficient sample size, univariate normality, and homogeneity of variance were conducted.

Test of Independence. Glass and Hopkins (1984, as cited in Stevens, 2009) identified that observations must be independent, meaning participants do not engage in the treatment in pairs or groups. The assumption of independence is met. Treatment was individually administered asynchronously through Canvas, limiting the possibility of dependent observations. The intervention topic, gratitude, was only addressed via a recorded lecture provided through Canvas and accessible only individually by students in the intervention group; therefore, the assumption of independence has been met.

Sample Size. G*Power-3.1.9.7 (Faul et al., 2007) prior-power analysis identified a minimum of 43 participants required for analysis. With a total sample size of 169 (gratitude group $n = 72$ and control group $n = 97$), there is a sufficient sample size to conduct the ANOVA analysis.

Normality. A test of univariate normality includes analyzing the Kolmogorov-Smirnov (K-S) or Shapiro-Wilk (SW) output. Shapiro-Wilk (SW) has more power and a better indicator of difference from normality than Kolmogorov-Smirnov (K-S). Because of this, the S-W test may show significance compared to K-S. Both outcomes were statistically significant ($p < .001$). Field (2013) recommends not using K-S or S-W with large groups since even subtle differences from normal distribution may show as

significant. Histograms identified a positive skew for the negative affect measures and a negative skew for well-being and gratitude measures. Since this is a non-clinical college-student-aged sample, participants' scores of well-being and gratitude were likely to fall in the higher range, whereas their scores of negative affects were likely to fall in the lower range. Violations of normality are expected in the undergraduate student population.

Homogeneity of Variance. The variability should be similar for all values of the measured variables, and Levene's test statistic verifies that the samples are from a population of the same variances (Mertler & Vannatta, 2010). Each ANOVA analysis included Levene's test of homogeneity of variance, and each dependent variable was non-significant except for anxiety (p = .030). Levene's test for each independent samples t test was reviewed and all were non-significant except for anxiety and gender (p = .014), gratitude and generational standing (p = .021), and stress and generational standing (p = .037). The results of the assumption checks indicated that all assumptions were met, and therefore the data was deemed appropriate for an ANOVA analysis.

The descriptive statistics (e.g., mean, standard deviation) of all study variables for both conditions (Gratitude Intervention and Control) at the two-time points (pretest and posttest) and Cronbach's alpha coefficients for all measures at the pre-and posttest are described are summarized in Table 2. The mean change scores of all study variables between the two points for both conditions are also included.

Table 2

Descriptive Statistics and Psychometric Properties of Study Variables

	Gratitude							Control								
	M		Mean Change	*SD*		*Cronbach's α*		*M*		Mean Change	*SD*		*Cronbach's α*		*p*	*Hedges' g*
Scale	*Pre*	*Post*		*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*		*Pre*	*Post*	*Pre*	*Post*		
Depression[a]	2.42	2.33	-.09	1.13	1.01	.90	.88	2.49	2.67	.18	1.03	1.11	.84	.86	.023	.31
Anxiety[a]	2.25	2.10	-.15	.99	.92	.89	.90	2.17	2.15	-.02	.80	.80	.80	.82	.128	.18
PSS[b]	2.89	2.76	-.13	.71	.71	.88	.87	2.99	2.99	.00	.63	.66	.84	.85	.043	.27
FS[c]	5.40	5.43	.03	.86	.93	.82	.86	5.26	5.17	-.09	1.01	1.09	.85	.88	.157	.16
GQ[d]	5.66	5.44	-.22	.86	.98	.70	.76	5.55	5.56	.00	.92	.89	.77	.78	.023	.31

Note. Pre- and posttest items include mean scores. [a] Subscales of the Brief Symptom Inventory. [b] Perceived Stress Scale. [c] Flourishing Scale (measuring wellbeing). [d] Gratitude Questionnaire

The first research question asked, "***Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of depression and anxiety – from pre- to posttest when compared to the control group participants?"*** The specific hypothesis was that participants in the Gratitude Intervention Group would experience a statistically significant decrease in negative affect – as measured by levels of anxiety, depression – from pre- to posttest when compared to the control group participants.

A two-way repeated measures ANOVA was calculated comparing the depression scores at two different time periods: pretest and posttest. The analysis found a significant interaction effect between Time (pretest to posttest) and Group (gratitude vs control); $F(1, 167) = 4.048$, $p = .046$, partial $\eta^2 = .024$. This means that the change in depression scores over time significantly differed between the gratitude and control groups, indicating that the intervention had an impact. The gratitude group had decreased depression scores over time (pretest: $M = 2.41$, $SD = 1.13$; posttest: $M = 2.33$, $SD = 1.01$), whereas the control group reported increased depression scores over time (pretest: $M = 2.49$, $SD = 1.03$; posttest: $M = 2.67$, $SD = 1.11$). The main effect of Time ($F(1, 167) = .516$, $p = .474$, partial $\eta^2 = .003$) was not significant, meaning that the overall change in depression scores from pretest to posttest was not significant when both groups were considered. A one-tailed (directional) independent sample *t*-test was conducted to compare the pre-post change between the two groups. The results indicated that there was a statistically significant difference in the change scores between the two groups in the expected direction ($t(167) = -2.012$, $p = .023$, $g = .32$). In other words, the gratitude group experienced a statistically significant decrease ($MD = -.09$, $SD = .78$) in depression when

compared to the control group (*MD* = .18, *SD* = .90). The gratitude intervention led to a significant decrease in negative affect among gratitude group participants, as measured by their depression levels from pre- to posttest when compared to the control group participants.

A two-way repeated measures ANOVA was calculated comparing anxiety scores at two different time periods: pretest and posttest. The analysis found a non-significant interaction effect ($F(1, 167) = 1.294$, $p = .257$, partial $\eta^2 = .008$) between Time (pretest to posttest) and Group (gratitude vs control). This suggests that the change in anxiety scores over time was not significantly different between the gratitude and control groups. There was no significant difference between the gratitude group anxiety pretest (*M* = 2.25, *SD* = .99) and posttest (*M* = 2.10, *SD* = .92) compared to the control group's pretest (*M* = 2.17, *SD* = .80) and posttest (*M* = 2.15, *SD* = .80). The main effect for Time ($F(1, 167) = 2.228$, $p = .137$, partial $\eta^2 = .013$) was not significant. Participants did not experience a significant decrease in negative affect as measured by anxiety levels, suggesting that the gratitude intervention did not significantly reduce anxiety levels among participants. A one-tailed (directional) independent sample t-test was conducted to compare the pre-post change between the two groups. The results showed a non-significant difference in the change scores between the two groups in the expected direction ($t(167) = -1.137$, $p = .128$, $g = .18$), further supporting the non-significant interaction effect. The gratitude group did not experience a statistically significant decrease in anxiety (*MD* = -.15, *SD* = .68) compared to the control group (*MD* = -.02, *SD* = .73). **Therefore, the alternative hypothesis was partially supported.**

The second research question asked, "***Will participants in the Gratitude Intervention group experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants?"*** The specific hypothesis was that participants in the Gratitude Intervention Group would experience a statistically significant decrease in perceived stress from pre- to posttest when compared to the control group participants.

A two-way repeated measures ANOVA was calculated comparing perceived stress scores at two different time periods: pretest and posttest. There was a non-significant interaction effect ($F(1, 167) = 2.980$, $p = .086$, partial $\eta^2 = .018$) between Time (pretest to posttest) and Group (gratitude vs control). This suggests that the change in stress scores over time between the two groups was not significantly different. The gratitude group reported decreased stress scores over time (pretest, $M = 2.89$, $SD = .71$, to posttest, $M = 2.76$, $SD = .71$), whereas the control group maintained similar stress scores over time (pretest, $M = 2.99$, $SD = .63$, to posttest, $M = 2.99$, $SD = .66$). The main effect of Time ($F(1, 167) = 2.876$, $p = .092$, partial $\eta^2 = .017$) was not significant. Time alone did not lead to significant changes in stress scores. A one-tailed (directional) independent sample t-test was conducted to compare the pre-post change between the two groups. The results indicated that there was a statistically significant difference in the change scores between the two groups in the expected direction ($t(167) = -1.726$, $p = .043$, $g = .27$). In other words, the gratitude group did experience a statistically significant decrease ($MD = -.13$, $SD = .42$) in stress when compared to the control group ($MD = .001$, $SD = .55$). **The null hypothesis was rejected**. The gratitude intervention led to a significant decrease in

stress among gratitude group participants, as measured by their stress levels from pre- to posttest compared to the control group participants.

The third research question asked, ***"Will participants in the Gratitude Intervention group experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control group participants?"*** The specific hypothesis was that participants in the Gratitude Intervention Group would experience a statistically significant increase in gratitude from pre- to posttest compared to the control group participants.

A two-way repeated measures ANOVA was calculated comparing gratitude scores at two different time periods: pretest and posttest. A significant interaction effect ($F(1, 167) = 4.048$, $p = .046$, partial $\eta^2 = .024$) between Time (pretest to posttest) and Group (gratitude vs control) was found, indicating that the change in the gratitude scores over time was significantly different between the two groups. The gratitude group (pretest, $M = 5.66$, $SD = .86$ to posttest, $M = 5.44$, $SD = .98$) experienced a decrease in gratitude scores over time, whereas the control group remained stable (pretest, $M = 5.55$, $SD = .92$ to posttest, $M = 5.56$, $SD = .89$). This indicates that the changes in gratitude levels from pretest to posttest were significantly different between the gratitude group and the control group. The main effect for Time was significant ($F(1, 167) = 3.966$, $p = .048$, partial $\eta^2 = .023$), indicating significant changes in gratitude levels from pretest to posttest for both groups. A one-tailed (directional) independent sample *t*-test was conducted to compare the pre-post change between the two groups. The results indicated that there is a statistically significant difference in the change scores between the two groups; however, not in the expected direction ($t(167) = -2.012$, $p = .023$, $g = .31$). The

gratitude group experienced a statistically significant, unexpected decrease (M = -.22, SD = .82) in gratitude when compared to the control group (M = .001, SD = .60). Therefore, **the null hypothesis was retained**. The gratitude intervention did not lead to a statistically significant increase in gratitude among the Gratitude Intervention Group participants compared to the control group participants.

The fourth research question explored, "***Will participants in the Gratitude Intervention group experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control group participants?"*** The specific hypothesis was that participants in the Gratitude Intervention group would experience a statistically significant increase in wellbeing from pre- to posttest when compared to the control participants.

A two-way repeated measures ANOVA was calculated comparing wellbeing scores at two different time periods: pretest and posttest. A non-significant interaction effect (F(1, 167) = 1.020, p = .314, partial η^2 = .006) between Time (pretest to posttest) and Group (gratitude vs control) was found, suggesting that the change in well-being scores over time was not significantly different between the two groups. The gratitude group (pretest, M = 5.40, SD = .86, to posttest, M = 5.43, SD = .93) did not show increased well-being scores over time compared to control (pretest, M = 5.26, SD = 1.01, to posttest, M = 5.17, SD = 1.09). The main effect of Time was not significant (F(1, 167) = .173, p = .678, partial η^2 = .001). A one-tailed (directional) independent sample t-test was conducted to compare the pre-post change between the two groups. The results indicated that there is a non-statistically significant difference in the change scores between the two groups (t(167) = 1.010, p = .157, g = .16); thus, **the null hypothesis was**

retained. In other words, the Gratitude Intervention Group did not experience a statistically significant increase in well-being compared to the control group.

The fifth research question asked, "***Will race, gender, or college generational standing moderate the effect of the gratitude intervention on negative affect, stress, well-being, and gratitude?"*** Demographic variables were first coded as binary: white vs BIPOC students, male vs female students, and first-generation vs continuing generation students. The number of transgender, gender non-binary/non-conforming/variant students was too small for meaningful comparison and thus were not included in the analysis. A series of two-way repeated measures ANOVA were run to examine if the effect of the demographic variables (gender, race, or college generational status) moderates the effect of the gratitude intervention on the outcome variables – depression, anxiety, well-being, and gratitude.

Gender

A two-way repeated measures ANOVA was calculated to examine the effects of Gender (male, female) and Time (pretest, posttest) on depression, anxiety, well-being, and gratitude. An independent samples t-test was then conducted to verify the results of the repeated measures.

Depression

The analysis revealed a non-significant interaction effect ($F(1, 69) = .436$, $p = .511$, partial $\eta^2 = .006$) between Time (pretest to posttest) and Gender (male, female), suggesting the change in depression scores over time was not significantly different between males and females. Specifically, males (pretest, $M = 2.12$, $SD = 1.14$, to posttest, $M = 2.00$, $SD = .98$) did not have lower scores over time compared to females (pretest, *M*

= 2.74, *SD* = 1.02, to posttest, *M* = 2.75, *SD* = .92). The main effect of Time (*F*(1, 69) = .356, *p* = .553, partial η^2 = .010) was not significant indicating that the change in the depression scores over time was not statistically significant between males and females. This implies that time alone did not significantly change depression scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the scores between males and females (*t*(69) = -.661, *p* = .511, *g* = .15), indicating that **gender did not moderate the effects of the gratitude intervention for depression**. In other words, Gratitude Group participants' levels of depression did not change over time as a function of their gender identities. Males did not experience a statistically significant decrease (*M* = .04, *SD* = .95) in depression compared to females (*M* = .10, *SD* = .74).

Anxiety

The analysis revealed a non-significant interaction effect (*F*(1, 69) = .844, *p* = .361, partial η^2 = .012) between Time (pretest to posttest) and Gender (Male, Female), suggesting the change in anxiety scores over time was not significantly different between males and females. Specifically, males (pretest, *M* = 1.88, *SD* = .91, to posttest, *M* = 1.82, *SD* = .90) did not have lower scores over time compared to females (pretest, *M* = 2.62, *SD* = .90, to posttest, *M* = 2.40, *SD* = .84). The main effect of Time (*F*(1, 69) = 3.149, *p* = .080, partial η^2 = .044) was not significant. This implies that time alone did not significantly change anxiety scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores

between males and females (t(51.200) = .882, p = .382, g = .22), indicating that **gender did not moderate the effects of the Gratitude Intervention on anxiety**. In other words, Gratitude Group participants' anxiety levels did not change over time as a function of their gender identities. Males did not experience a statistically significant decrease (M = -.07, SD = .54) in anxiety when compared to females (M = -.22, SD = .83).

Stress

The analysis revealed a significant interaction effect (F(1, 69) = 8.012, p = .006, partial η^2 = .049) between Time (pretest to posttest) and Gender (Male, Female), suggesting the change in perceived stress scores over time was significantly different between males and females. Specifically, males (pretest, M = 2.68, SD = .73, to posttest, M = 2.43, SD = .68) had lower scores over time compared to females (pretest, M = 3.13, SD = .61, to posttest, M = 3.15, SD = .56). The main effect of Time (F(1, 69) = 5.641, p = .020, partial η^2 = .078) was significant. This implies that time alone did lead to significant changes in perceived stress scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a statistically significant difference in the change scores between males and females (t(-2.830) = .882, p = .006, g = .45), indicating that **gender did moderate the effects of the Gratitude Intervention on perceived stress**. In other words, Gratitude Group participants' stress levels did change over time as a function of their gender identities. Males did experience a statistically significant decrease (M = -.07, SD = .54) in perceived stress compared to the females (M = -.22, SD = .83).

Wellbeing

The analysis revealed a non-significant interaction effect ($F(1, 69) = 1.193$, $p = .278$, partial $\eta^2 = .017$) between Time (pretest to posttest) and Gender (Male, Female), suggesting the change in well-being scores over time was not significantly different between males and females. Specifically, males (pretest, $M = 5.51$, $SD = .77$, to posttest, $M = 5.62$, $SD = .92$) did not have lower scores over time compared to females (pretest, $M = 5.26$, $SD = .97$, to posttest, $M = 5.19$, $SD = .93$). The main effect of Time ($F(1, 69) = .080$, $p = .778$, partial $\eta^2 = .001$) was not significant. This implies that time alone did not significantly change well-being scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the scores between males and females ($t(69) = 1.092$, $p = .278$, $g = .26$), indicating that **gender did not moderate the effects of the Gratitude Intervention on well-being**. In other words, Gratitude Group participants' levels of well-being did not change over time as a function of their gender identities. Males did not experience a statistically significant increase ($M = .12$, $SD = .72$) in well-being compared to females ($M = -.07$, $SD = .69$).

Gratitude

The analysis revealed a non-significant interaction effect ($F(1, 69) = .282$, $p = .597$, partial $\eta^2 = .004$) between Time (pretest to posttest) and Gender (Male, Female), suggesting the change in gratitude scores over time was not significantly different between males and females. Specifically, males (pretest, $M = 5.79$, $SD = .81$, to posttest, $M = 5.62$, $SD = .91$) did not have lower scores over time compared to females (pretest, $M = 5.49$, $SD = .90$, to posttest, $M = 5.21$, $SD = 1.04$). The main effect of Time ($F(1, 69) = 5.087$, $p = .027$, partial $\eta^2 = .069$) was significant. This implies that time alone did lead to

significant changes in well-being scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the scores between males and females ($t(69) = .531$, $p = .597$, $g = .13$), indicating **that gender did not moderate the effects of the Gratitude Intervention on gratitude**. In other words, Gratitude Group participants' levels of gratitude did not change over time as a function of their gender identities. Males did not experience a statistically significant increase ($M = -.17$, $SD = .75$) in gratitude compared to the females ($M = -.28$, $SD = .92$).

Race/Ethnicity

A two-way repeated measures ANOVA was calculated to examine the effects of race (White, BIPOC) and time (pretest, posttest) on depression, anxiety, well-being, and gratitude. An independent samples t-test was then conducted to verify the results of the repeated measures.

Depression

The analysis revealed a non-significant interaction effect ($F(1, 70) = .419$, $p = .519$, partial $\eta^2 = .017$) between Time (pretest to posttest) and Race (White, BIPOC), suggesting the change in depression scores over time was not significantly different between White participants and BIPOC participants. Specifically, White participants (pretest, $M = 2.50$, $SD = 1.13$, to posttest, $M = 2.36$, $SD = .93$) did not have lower scores over time compared to BIPOC participants (pretest, $M = 2.32$, $SD = 1.14$, to posttest, $M = 2.30$, $SD = 1.12$). The main effect of Time ($F(1, 70) = .681$, $p = .412$, partial $\eta^2 = .004$) was not significant. This implies that time alone did not significantly change depression scores. An independent sample t-test was conducted to compare the scores between

White and BIPOC participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the scores between White and BIPOC participants (t(70) = -.647, p = .519, g = .28), indicating that **race did not moderate the effects of the Gratitude Intervention on depression**. In other words, Gratitude Group participants' levels of depression did not change over time as a function of their race. White participants did not experience a statistically significant decrease (M = -.14, SD = .88) in depression compared to the BIPOC participants (M = -.02, SD = .64).

Anxiety

The analysis revealed a non-significant interaction effect (F(1, 70) = .144, p = .706, partial η^2 = .002) between Time (pretest to posttest) and Race (White, BIPOC), suggesting the change in anxiety scores over time was not significantly different between White and BIPOC participants. Specifically, White participants (pretest, M = 2.28, SD = 1.04, to posttest, M = 2.11, SD = .92) did not have lower scores over time compared to BIPOC participants (pretest, M = 2.19, SD = .94, to posttest, M = 2.08, SD = .94). The main effect of Time (F(1, 70) = 2.954, p = .090, partial η^2 = .002) was not significant indicating that the change in the anxiety scores over time was not statistically significant. This implies that time alone did not significantly change anxiety scores. An independent sample t-test was conducted to compare the scores between White and BIPOC participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between White and BIPOC participants (t(70) = -.379, p = .706, g = .09), indicating that the **race did not moderate the effects of the Gratitude Intervention on anxiety**. In other words, Gratitude Group participants' levels of depression did not change over time as a function of their race.

White participants did not experience a statistically significant decrease (M = -.17, SD = .72) in depression compared to the BIPOC participants (M = -.11, SD = .65).

Stress

The analysis revealed a non-significant interaction effect ($F(1, 70) = 3.623$, p = .061, partial η^2 = .049) between Time (pretest to posttest) and Race (White, BIPOC), suggesting the change in perceived stress scores over time was not significantly different between White participants and BIPOC participants. Specifically, White participants (pretest, M = 2.93, SD = .66, to posttest, M = 2.72, SD = .68) did not have lower scores over time compared to BIPOC participants (pretest, M = 2.84, SD = .78, to posttest, M = 2.81, SD = .76). The main effect of Time ($F(1, 70) = 5.891$, p = .018, partial η^2 = .078) was significant. This implies that time alone did lead to significant changes in perceived stress scores. An independent sample t-test was conducted to compare the scores between White and BIPOC participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the scores between White and BIPOC participants ($t(70) = -1.903$, p = .061, g = .45), indicating that **race did not moderate the effects of the Gratitude Intervention on stress**. In other words, Gratitude Group participants' levels of perceived stress did not change over time as a function of their race. White participants did not experience a statistically significant decrease (M = -.21, SD = .47) in perceived stress compared to the BIPOC participants (M = -.03, SD = .32).

Wellbeing

The analysis revealed a non-significant interaction effect ($F(1, 70) = 1.447$, p = .233, partial η^2 = .020) between Time (pretest to posttest) and Race (White, BIPOC),

suggesting the change in well-being scores over time was not significantly different between White and BIPOC participants. Specifically, White participants (pretest, *M* = 5.34, *SD* = .99, to posttest, *M* = 5.46, *SD* = 1.00) did not have higher scores over time compared to BIPOC participants (pretest, *M* = 5.47, *SD* = .67, to posttest, *M* = 5.39, *SD* = .85). The main effect of Time ($F(1, 70) = .070$, $p = .792$, partial $\eta^2 = .001$) was not significant. This implies that time alone did not significantly change well-being scores. An independent sample t-test was conducted to compare the scores between males and females in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between White and BIPOC participants ($t(70) = 1.203$, $p = .233$, $g = .28$), indicating that **race did not moderate the effects of the Gratitude Intervention on wellbeing**. In other words, Gratitude Group Participants' levels of well-being did not change over time as a function of their race. White participants did not experience a statistically significant increase (*M* = .12, *SD* = .72) in well-being compared to the BIPOC participants (*M* = -.07, *SD* = .69).

Gratitude

The analysis revealed a non-significant interaction effect ($F(1, 70) = .111$, $p = .741$, partial $\eta^2 = .002$) between Time (pretest to posttest) and Race (White, BIPOC), suggesting the change in gratitude scores over time was not significantly different between White and BIPOC participants. Specifically, White participants (pretest, *M* = 5.73, *SD* = .85, to posttest, *M* = 5.67, *SD* = .90) did not have lower scores over time compared to BIPOC participants (pretest, *M* = 5.45, *SD* = .92, to posttest, *M* = 5.32, *SD* = .93). The main effect of Time ($F(1, 70) = 5.160$, $p = .026$, partial $\eta^2 = .069$) was significant. This implies that time alone did lead to significant changes in gratitude

scores. An independent sample t-test was conducted to compare the scores between White and BIPOC participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between White and BIPOC participants ($t(70) = .332$, $p = .741$, $g = .08$), indicating that **race did not moderate the effects of the Gratitude Intervention on gratitude**. In other words, Gratitude Group participants' levels of gratitude did not change over time as a function of their race. White participants did not experience a statistically significant increase ($M = -.19$, $SD = .68$) in gratitude compared to the BIPOC participants ($M = -.26$, $SD = .98$).

Generational Status

A two-way repeated measures ANOVA was calculated to examine the effects of generational status (first-generation, continuing-generation) and time (pretest, posttest) on depression, anxiety, well-being, and gratitude. An independent samples t-test was then conducted to verify the results of the repeated measures.

Depression

The analysis revealed a non-significant interaction effect ($F(1, 70) = 1.224$, $p = .272$, partial $\eta^2 = .017$) between Time (pretest to posttest) and Generational status (first generation, continuing generation), suggesting the change in depression scores over time was not significantly different between first and continuing generation participants. Specifically, continuing-generation participants (pretest, $M = 1.93$, $SD = .91$, to posttest, $M = 1.99$, $SD = .89$) did not have lower scores over time compared to first-generation participants (pretest, $M = 2.66$, $SD = 1.16$, to posttest, $M = 2.50$, $SD = 1.03$). The main effect of Time ($F(1, 70) = .258$, $p = .613$, partial $\eta^2 = .004$) was not significant. This implies that time alone did not significantly change depression scores. An independent

sample t-test was conducted to compare the scores between first and continuing-generation participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between first and continuing-generation participants ($t(70) = 1.106$, $p = .272$, $g = .28$), indicating that **college-going generation status did not moderate the effects of the gratitude intervention on depression**. In other words, Gratitude Group participants' level of depression did not change over time as a function of their college-going status. Continuing-generation participants did not experience a statistically significant decrease ($M = .06$, $SD = .73$) in depression compared to the first-generation participants ($M = -.16$, $SD = .80$).

Anxiety

The analysis revealed a non-significant interaction effect ($F(1, 70) = .330$, $p = .568$, partial $\eta^2 = .005$) between Time (pretest to posttest) and Generational status (first generation, continuing generation), suggesting the change in anxiety scores over time was not significantly different between first and continuing generation participants. Specifically, continuing-generation participants (pretest, $M = 2.05$, $SD = 1.00$, to posttest, $M = 1.83$, $SD = .78$) did not have lower scores over time compared to first-generation participants (pretest, $M = 2.34$, $SD = .99$, to posttest, $M = 2.23$, $SD = .97$). The main effect of Time ($F(1, 70) = 3.535$, $p = .064$, partial $\eta^2 = .048$) was not significant. This implies that time alone did not significantly change anxiety scores. An independent sample t-test was conducted to compare the scores between first and continuing-generation participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between first and

continuing-generation participants ($t(70) = -.574$, $p = .568$, $g = .14$), indicating that **college-going generational status did not moderate the effects of the gratitude intervention on anxiety**. In other words, Gratitude Group participants' level of anxiety did not change over time as a function of their college-going status. Continuing-generation participants did not experience a statistically significant decrease ($M = -.21$, $SD = .66$) in anxiety compared to the first-generation participants ($M = -.11$, $SD = .70$).

Stress

The analysis revealed a non-significant interaction effect ($F(1, 70) = .204$, $p = .653$, partial $\eta^2 = .003$) between Time (pretest to posttest) and Generational status (first generation, continuing generation), suggesting the change in perceived stress scores over time was not significantly different between first and continuing generation participants. Specifically, continuing-generation participants (pretest, $M = 2.65$, $SD = .60$, to posttest, $M = 2.48$, $SD = .62$) did not have lower scores over time compared to first-generation participants (pretest, $M = 3.01$, $SD = .74$, to posttest, $M = 2.90$, $SD = .72$). The main effect of Time ($F(1, 70) = 7.037$, $p = .010$, partial $\eta^2 = .091$) was significant. This implies that time alone did lead to significant changes in perceived stress scores. An independent sample t-test was conducted to compare the scores between first and continuing-generation participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between first and continuing-generation participants ($t(65.876) = -.522$, $p = .603$, $g = .11$), indicating that **college-going generation status did not moderate the effects of the gratitude intervention on perceived stress**. In other words, Gratitude Group participants' level of perceived stress did not change over time as a function of their college-going status.

Continuing-generation participants did not experience a statistically significant decrease (M = -.21, SD = .66) in perceived stress compared to the first-generation participants (M = -.11, SD = .70).

Wellbeing

The analysis revealed a non-significant interaction effect ($F(1, 70) = .437$, p = .511, partial η^2 = .006) between Time (pretest to posttest) and Generational status (first generation, continuing generation), suggesting the change in well-being scores over time was not significantly different between first and continuing generation participants. Specifically, continuing-generation participants (pretest, M = 5.73, SD = .68, to posttest, M = 5.69, SD = .86) did not have higher scores over time compared to first-generation participants (pretest, M = 5.22, SD = .90, to posttest, M = 5.30, SD = .95). The main effect of Time ($F(1, 70) = .035$, p = .852, partial η^2 = .001) was not significant. This implies that time alone did not significantly change well-being scores. An independent sample t-test was conducted to compare the pre-post scores between first and continuing-generation participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between first and continuing-generation participants ($t(70) = -.661$, p = .511, g = .17), indicating that **college-going generation status did not moderate the effects of the gratitude intervention on gratitude**. In other words, Gratitude Group participants' level of gratitude did not change over time as a function of their college-going status. Continuing-generation participants did not experience a statistically significant increase (M = -.04, SD = .54) in well-being when compared to the first-generation participants (M = .07, SD = .77).

Gratitude

The analysis revealed a non-significant interaction effect ($F(1, 70) = .258$, $p = .613$, partial $\eta^2 = .004$) between Time (pretest to posttest) and Generational Status (first-generation, continuing generation), suggesting the change in gratitude scores over time was not significantly different between first and continuing generation participants. Specifically, continuing-generation participants (pretest, $M = 5.98$, $SD = .75$, to posttest, $M = 5.83$, $SD = .80$) did not have higher scores over time compared to first-generation participants (pretest, $M = 5.49$, $SD = .87$, to posttest, $M = 5.24$, $SD = 1.00$). The main effect of Time ($F(1, 70) = 3.089$, $p = .055$, partial $\eta^2 = .052$) was not significant. This implies that time alone did not significantly change gratitude scores. An independent sample t-test was conducted to compare the scores between first and continuing-generation participants in the gratitude intervention group. The results indicated that there is a non-statistically significant difference in the change scores between first and continuing-generation participants ($t(69.789) = .633$, $p = .529$, $g = .13$), indicating that **college-going generation status did not moderate the effects of the gratitude intervention on gratitude**. In other words, Gratitude Group participants' level of gratitude did not change over time as a function of their college-going status. Continuing-generation participants did not experience a statistically significant increase ($M = -.19$, $SD = .68$) in gratitude compared to the first-generation participants ($M = -.26$, $SD = .98$).

A summary of research questions, alternative hypotheses, analyses, and findings are presented in Table 3.

Table 3

Summary of Research Questions, Hypotheses, Analyses, and Findings

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
1a	Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants ?	Participants in the Gratitude Intervention group will experience a statistically significant decrease in negative affect – as measured by levels of depression – from pre- to posttest when compared to the control group participants.	Negative Affect (measured by BSI- depression subscale)	Depression	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Group – Gratitude vs control Independent sample t-test Change scores – One-sided	Hypothesis 1a was partially supported
1b	Will participants in the Gratitude Intervention group experience a statistically significant decrease in negative affect – as measured by levels of anxiety and depression – from pre- to posttest when compared to the control group participants ?	Participants in the Gratitude Intervention group will experience a statistically significant decrease in negative affect – as measured by levels of anxiety – from pre- to posttest when compared to the control group participants.	Negative Affect (measured by BSI- anxiety subscale)	Anxiety	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Group – Gratitude vs control Independent sample t-test Change scores – One-sided	Hypothesis 1b was not fully supported

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
2	Will participants in the Gratitude Intervention group experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest, when compared to the control group participants ?	Participants in the Gratitude Intervention group will experience a statistically significant decrease in stress – as measured by their level of perceived stress – from pre- to posttest when compared to the control group participants.	Stress (measured by PSS)	Perceived Stress	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Group – Gratitude vs control Independent sample t-test Change scores – One-sided	Reject Null Hypothesis Hypothesis 2 was supported
3	Will participants in the Gratitude Intervention group experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control group	Participants in the Gratitude Intervention group will experience a statistically significant increase in gratitude – as measured by their level of perceived gratitude – from pre- to posttest when compared to the control participants.	Gratitude (measured by gratitude questionnaire)	Gratitude	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Group – Gratitude vs control Independent sample t-test Change scores – One-sided	Retain Null Hypothesis Hypothesis 3 was not supported

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
	participants ?					
4	Will participants in the Gratitude Interventio n group experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control group participants ?	Participants in the Gratitude Intervention group will experience a statistically significant increase in well-being – as measured by their level of perceived well-being – from pre- to posttest when compared to the control participants.	Wellbeing (measured by flourishing scale)	Flourishing	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Group – Gratitude vs control Independent sample t-test Change scores – One-sided	Retain Null Hypothesis Hypothesis 4 was not supported
5a	Will *race* moderate the effect of the gratitude interventio n on depression?		Negative Affect	Depression	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Race – white vs BIPOC Independent sample t-test Change scores	Race did not moderate the effects of the gratitude intervention for depression.
5a	Will *gender* moderate the effect of the gratitude interventio		Negative Affect	Depression	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Gender – Female vs Male	Gender did not moderate the effects of the gratitude intervention for depression.

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
	n on depression?				Independent sample t-test Change scores	
5a	Will *college-going* status moderate the effect of gratitude interventio n on depression?		Negative Affect	Depression	2x2 repeated measures Factor 1 Time – pre & post Factor 2 college generation status (GCS) – first-gen vs continuing-gen Independent sample t-test Change scores	College-going status did not moderate the effects of the gratitude intervention for depression.
5b	Will *race* moderate the effect of gratitude interventio n on anxiety?		Negative Affect	Anxiety	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Race – white vs BIPOC Independent sample t-test Change scores	Race did not moderate the effects of the gratitude intervention for anxiety.
5b	Will *gender* moderate the effect of gratitude interventio n on anxiety?		Negative Affect	Anxiety	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Gender – Female vs Male Independent sample t-test Change scores	Gender did not moderate the effects of the gratitude intervention for anxiety.
5b	Will *college-going*		Negative Affect	Anxiety	2x2 repeated measures	College-going status did not

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
	status moderate the effect of gratitude interventio n on anxiety?				Factor 1 Time – pre & post Factor 2 college generation status (GCS) – first-gen vs continuing-gen Independent sample t-test Change scores	moderate the effects of the gratitude intervention for anxiety.
5c	Will *race* moderate the effect of the gratitude interventio n on stress?		Stress	Perceived Stress	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Race – white vs BIPOC Independent sample t-test Change scores	Race did not moderate the effects of the gratitude intervention for perceived stress.
5c	Will *gender* moderate the effect of the gratitude interventio n on stress?		Stress	Perceived Stress	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Gender – Female vs Male Independent sample t-test Change scores	Gender did moderate the effects of the gratitude intervention for perceived stress.
5c	Will *college-going* status moderate the effect of the gratitude interventio n on stress?		Stress	Perceived Stress	2x2 repeated measures Factor 1 Time – pre & post Factor 2 college generation status (GCS) – first-gen vs continuing-gen	College-going status did not moderate the effects of the gratitude intervention for perceived stress.

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
					Independent sample t-test Change scores	
5d	Will *race* moderate the effect of the gratitude interventio n on well-being?		Wellbeing	Flourishing	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Race – white vs BIPOC Independent sample t-test Change scores	Race did not moderate the effects of the gratitude intervention for well-being.
5d	Will *gender* moderate the effect of the gratitude interventio n on well-being?		Wellbeing	Flourishing	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Gender – Female vs Male Independent sample t-test Change scores	Gender did not moderate the effects of the gratitude intervention for well-being.
5d	Will *college-going* status moderate the effect of the gratitude interventio n on well-being?		Wellbeing	Flourishing	2x2 repeated measures Factor 1 Time – pre & post Factor 2 college generation status (GCS) – first-gen vs continuing-gen Independent sample t-test Change scores	College-going status did not moderate the effects of the gratitude intervention for well-being.
5e	Will *race* moderate the effect of the		Gratitude	Gratitude	2x2 repeated measures	Race did not moderate the effects of the gratitude

	Research Question	Hypothesis	Construct	Variables	Analysis	Finding
	gratitude intervention on gratitude?				Factor 1 Time – pre & post Factor 2 Race – white vs BIPOC Independent sample t-test Change scores	intervention for gratitude.
5e	Will *gender* moderate the effect of the gratitude intervention on gratitude?		Gratitude	Gratitude	2x2 repeated measures Factor 1 Time – pre & post Factor 2 Gender – Female vs Male Independent sample t-test Change scores	Gender did not moderate the effects of the gratitude intervention for gratitude.
5e	Will *college-going* status moderate the effect of the gratitude intervention on gratitude?		Gratitude	Gratitude	2x2 repeated measures Factor 1 Time – pre & post Factor 2 college generation status (GCS) – first-gen vs continuing-gen Independent sample t-test Change scores	College-going status did not moderate the effects of the gratitude intervention for gratitude.

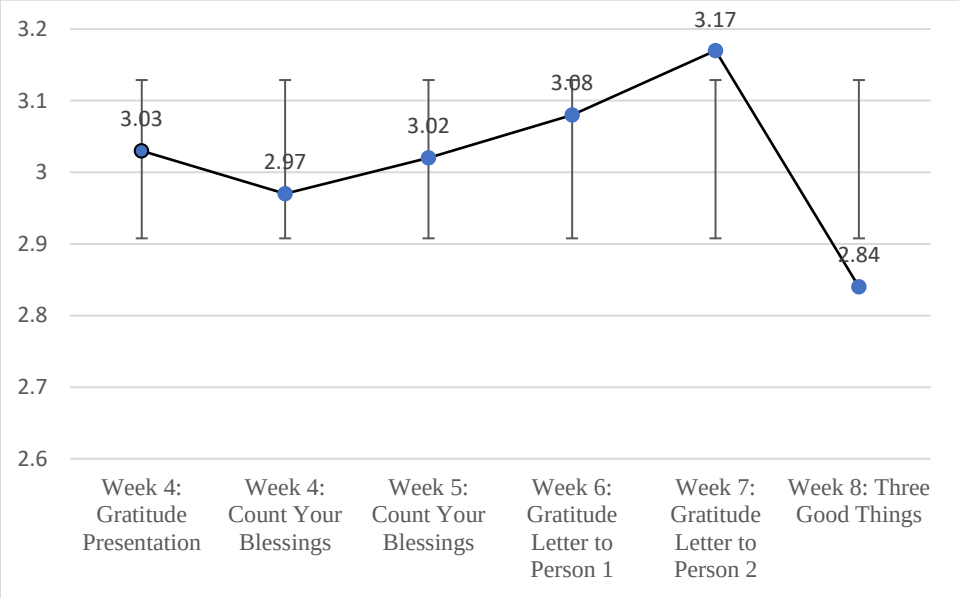
Exit Ticket

The exit survey, included with each gratitude activity, was used to measure the effect of each activity. The first gratitude activity required students to view an introduction to Gratitude and were asked to identify if the information helped them

understand concepts related to gratitude. Students were also asked to rate the helpfulness of each activity using a Likert-type scale ranging from 1 (Not helpful at all) to 4 (Very Helpful) and to describe what they found helpful about the activity. Overall, students found the introduction to gratitude concepts (M = 3.03, SD = .82) and gratitude activities (M = 3.02, SD = .60) helpful, indicating the acceptability of this intervention. Table 4 provides a breakdown of each activity's mean score.

Figure 5

Gratitude Activity Exit Ticket Mean Scores



Note. Mean ratings regarding the helpfulness of each activity are displayed on the *y*-axis. Range of helpfulness from 1(Not helpful at all) to 4 (Very Helpful).

Chapter Five: Discussion

Research has shown that many college students struggle with anxiety, depression, and stress (Duffy et al., 2019; Maymon & Hall, 2021). Nonetheless, college campus mental health resources are not utilized by every student due to many barriers (Duffy et al., 2019; Druckenmiller, 2022; Maymon & Hakkm, 2021). Incorporating interventions within the curriculum can help reach more students, decrease obstacles and stigma associated with counseling services, and ensure equitable access for all students in the classroom (Ritterband et al., 2009; Tate et al., 2009). The current study examined if a curriculum-embedded strengths-focused intervention delivered asynchronously as part of a regular course would provide instructors options to implement a PPI to impact students' overall mental health. Psychological well-being has been shown to contribute to college students' overall health and education outcomes (Eloff et al., 2022) that could also contribute to higher satisfaction levels (Lyubomirsky & Layous, 2013; Magyar-Moe et al., 2015; Rand et al., 2020). Engaging in gratitude activities has been associated with an increase in well-being, suggesting that practicing gratitude might result in positive academic and psychological outcomes (Komase et al., 2021).

Educators who wish to offer extra assistance to students and use PPIs may feel unqualified to carry out these interventions due to an idea that only individuals trained in interventions can do so, or they worry that incorporating an intervention into their course will be time-consuming and require further professional development (Shankland & Rosset, 2017). However, implementing gratitude interventions does not require special training and minimal resources. By including an accessible PPI within an existing course

curriculum, instructors can potentially help foster and enhance student well-being and gratitude and reduce negative affect – depression and anxiety, and stress.

The following discussion addresses the outcomes that either support or do not support the research hypotheses. Specifically, participants in the gratitude intervention group would experience a statistically significant decrease in stress and negative affect – as measured by levels of anxiety, depression – from pre- to posttest when compared to the control group participants. The gratitude intervention group would experience a statistically significant increase in well-being and gratitude from pre- to posttest when compared to the control group participants. Finally, the effect of the demographic variables (gender, race, or college generational status) and if they moderate the effect of the gratitude intervention on the outcome variables – depression, anxiety, well-being, and gratitude were also explored.

Negative Affect – Depression and Anxiety

Regarding depression, findings suggest that the depression scores over time significantly differed between the groups, indicating that the intervention had an impact. In the gratitude intervention group, depression scores decreased over time. On the other hand, the control group exhibited increased depression scores. These results are consistent with prior research highlighting the effectiveness of gratitude interventions in reducing negative affect (Emmons & McCullough, 2003; Cregg & Cheavens, 2020). Additionally, the increase in depression scores for the control group is also in line with prior research, which identifies an increased trend of mental health crises, including anxiety and depression, especially in the first quarter or semester after high school (Duffy et al., 2019; Duffy et al., 2020; Maymon & Hall, 2021). It could be argued the

intervention had no effect because the gratitude group participants started lower and ended up lower on the depression scale. However, the independent sample t-test shows that the decrease in depression among the gratitude group participants over time is significantly greater than the control group. In other words, gratitude participants were overall less depressed than control, but the reduction in depression due to the intervention is still significantly greater.

One diagnostic feature of depression includes decreased levels of interest or pleasure in activities and not enjoying experiences such as hobbies or extracurricular activities, and reports feeling sad and even irritable (American Psychological Association, DSM-5 Task Force, 2013). Although participants in this study may not qualify for a diagnosis of depression, the academic challenges they experience could contribute to feelings of depression (Amirkhan et al., 2022; Druckenmiller, 2022). The gratitude activities, for example, Three Good Things, encourage students to list small but important accomplishments (Seligman et al., 2009). The reflection component of this exercise may have reminded students what to be grateful for and, possibly, by focusing on the good things in their lives, may have helped them refocus on what they enjoyed. Exit ticket feedback from students identified they felt nothing good was happening to them, and although focusing on the three good things was not easy, it did help them focus on what was positive at that moment in their lives. Therefore, they could continue to push forward. Fredrickson's (2001) broaden-and-build model states that negative emotions limit a person's ability to function, and those positive emotions could undo those effects. By taking a moment and focusing on what was good in their lives, the participants may

have effectively broadened their ability to explore and participate in activities, and therefore the impact of the gratitude activities helped decrease feelings of depression.

Gratitude may have acted as a buffer against depression and anxiety (Kumar et al., 2022). Kumar et al. (2022) studied the impact of gratitude on levels of depression and anxiety pre-to onset Covid. Two hundred and one college students were assessed for outlook (positive and negative changes in one's outlook on life), gratitude, depression, and anxiety before the declaration of the pandemic in January to March 2020 and then again after the onset of the pandemic in April 2020. Individuals who identified higher levels of gratitude also identified lower levels of anxiety and depression before the pandemic. Gratitude also was associated with a greater positive outlook because of the pandemic (Kumar et al., 2022).

Reducing depression among college students is essential, given this population's increasing prevalence of mental health issues (Hubbard et al., 2018; Hunt & Eisenberg, 2010; Meda et al., 2021). Lower levels of depression have been associated with higher academic achievement, improved social relationships, and greater overall satisfaction with life (Hysenbegasi et al., 2005; Storrie et al., 2010). Thus, implementing gratitude interventions in educational settings could potentially contribute to undergraduate students' overall well-being and success.

The study also examined the impact of the gratitude intervention group on anxiety levels from pre- to posttest compared to the control group participants. Contrary to expectations, the result shows that the gratitude intervention did not seem to help in reducing anxiety levels among participants, suggesting that the intervention may be more effective in alleviating depressive symptoms rather than anxiety symptoms in college

students. Although the intervention did not yield a statistically significant difference between the intervention and the control group, the gratitude intervention group did experience a reduction in anxiety scores from pretest to posttest. In contrast, the control group experienced almost no change.

Although some prior studies have identified gratitude interventions as an effective means of reducing anxiety (Emmons & McCullough, 2003; Graf et al., 2008), Sin and Lyubomirsky's (2009) study showed that PPI interventions may be more beneficial to improving depressive symptoms. Yet other studies reported mixed results. Cregg and Cheavens' (2020) meta-analysis showed that gratitude interventions had a small effect on anxiety symptoms. In contrast, Renshaw and Rock (2018) also reported a small effect of the gratitude intervention on anxiety. Some individuals might not experience significant reductions in anxiety following a gratitude intervention due to differences in their personality, mindset, or coping mechanisms. The timing and duration of gratitude interventions can also influence their effectiveness (Komase et al., 2021). For example, the timeframe for the current study intervention might not be sufficient to produce lasting reductions in anxiety.

Depression and anxiety involve negative thinking, where a person may overly focus on negative events (Smith, 2021). Rumination consists in focusing on feelings of depression and the subjective causes of those feelings. Those who engage in rumination more often tend to experience feelings of depression for longer (Nolen-Hoeksema, 1991). Anxiety has a person excessively worrying about unexpected situations they cannot control. This is especially impactful for adolescents who tend to focus on being judged

for their performance or competence in school (American Psychological Association, DSM-5 Task Force, 2013).

Nolen-Hoeksema (1991) suggested that recovering from depressive feelings could be possible through some type of distraction. Smith (2021) suggested a competing response to rumination, making rumination difficult because of an opposite action (Azrin & Nun, 1973). For example, the gratitude interventions may have been distracting enough to alleviate the feeling of depression. Focusing on counting one's blessings, where participants make a list of things in their lives, they are grateful for (Emmons & McCullough, 2003), could have been an impactful distraction. Since anxiety includes excessive worry about performance and competence in school, an important factor to undergraduate students, the gratitude activities may not have the same impact as was shown with depression. Social connectedness protects against depressive symptoms (Wickramaratne et al., 2022). The gratitude letter activity may have reminded the individuals of those who had helped them in the past and that they are not alone. Feeling grateful does not necessarily remove feelings of anxiousness and worry, but it does buffer against those depression symptoms (Kumar et al., 2022).

One contributor to college students' anxiety revolves around grades, especially test anxiety (Marcus & Tomasi, 2020). Posttest results for the gratitude intervention group and control group were obtained at the end of the quarter where students may have been preparing for exams in different classes. The anxiety associated with performance, especially test anxiety (Marcus & Tomasi, 2020), would have been higher than at other times in the quarter. This could have contributed to the limited effects of the gratitude intervention. Although the control group reported lower anxiety scores than the gratitude

group, the gratitude group did experience a decrease in anxiety scores from pretest to posttest. In contrast, the control group did not experience a change. Indicating that the intervention had some effect compared to no intervention.

Stress

Finding suggests that the gratitude intervention group experienced a significant decrease in stress compared to the control group, adding to the growing body of literature that supports the effectiveness of gratitude interventions in reducing stress. For example, Komase et al. (2021) conducted a meta-analysis of studies using gratitude lists and web-based or paper-based interventions to reduce perceived stress and depression. Participants ranged from healthcare workers, public university employees, and the general population recruited from social media sites and other advertisements. Results identified that perceived stress was reduced significantly. This is further supported by Fekete and Deichert (2022), who studied a sample obtained from social media. Participants were divided into a gratitude writing group, an expressive writing group, and a control group. The gratitude and expressive writing groups were asked to write for five to ten minutes daily. Those in the control group were asked to not write anything. Participants in the gratitude writing group were asked to write about what they were grateful for, and participants in the expressive writing group were asked to write about their feelings in their current situation. Outcomes identified a reduction in stress with the gratitude writing group compared to the expressing writing group, which did not experience a decrease in stress. This outcome is like the gratitude intervention study, as the gratitude group did experience a decrease in stress, whereas the control group did not experience any changes in stress levels.

Gratitude has buffering effects and has been shown to reduce the impact of stress. For example, Deichert et al. (2019) examined the stress-buffering effects of gratitude, particularly if overall appreciation, appreciation of others, or feelings of prosperity compared to others, had a higher buffering effect. One hundred eighty-one undergraduate participants took part in the study. Findings identify participants who reported higher levels of appreciation for others also reported lower levels of the effects of stress. Participants in the current study identified the gratitude letter as the most helpful. It could be the gratitude letter activity provided participants an opportunity to remember their social relationships and how they may have been helped in the past during times of stress. By targeting the increase of gratitude, and the high gratitude scores observed by the gratitude group, the gratitude interventions may have reduced the impact of stress on the participants.

Reducing stress among undergraduate students is essential, as stress has been linked to lower academic performance, reduced mental and physical well-being, and decreased life satisfaction (Misra & McKean, 2000; Dyrbye et al., 2006). Furthermore, chronic stress may contribute to developing more severe mental health issues, such as anxiety and depression (Cohen et al., 2007).

Gratitude

Contrary to the study's hypothesis, the gratitude group experienced a decrease in gratitude scores over time, while the control group saw a slight increase in gratitude scores, and this change was statistically significant.

Results indicate that gratitude decreased from pretest to posttest for the gratitude intervention group and remained the same for the control group. Participants reported that

the gratitude activities were helpful, and feedback identified students found the activities meaningful. Specifically, participants rated the gratitude letter activity as more helpful than the count your blessings activity. However, by the end of the quarter, the overall helpful score dipped slightly. Some students expressed that the activities had become redundant and less helpful than at the beginning.

The person-activity fit model provides guidance on increasing the impact of interventions on more individuals within an intervention group. This includes considering culture, activity features, motivation for the activity, choice of activities, and creating novel experiences (Fekete & Deichert, 2022; Fritz & Lyubormisrsky, 2018; Schueller, 2014). Although the person-activity fit model was used to determine the number of activities, specifically providing variations to impact more students (Lyubomirsky & Layous, 2013), the intervention itself may not have been optimally tailored to suit the needs of the students and potentially limiting its effectiveness. One variation of activity choice was taken from the person-activity fit model. Considering the impact of internal validity if students were allowed to choose between the activity each week, it was decided to provide different versions of the activity over the course of the intervention so participants could experience different activities during the quarter. Two versions of gratitude list types and a gratitude letter were used. The first two activities of the intervention began with asking participants to Count One's Blessings by providing at least five things from the previous week they were grateful for and then describing how they made them feel (Emmons & McCullough, 2003). The last activity of the intervention, participants were asked to list Three Good Things (Seligman et al., 2009) and then identify why the good thing happened to them, what it meant to them, and how

the good thing inspired them to do the same to others. This exercise aimed to assist students in recognizing aspects of their lives for which they can be thankful, promoting an appreciation for life's positive aspects. While the goal of these activities was to support students in recognizing aspects of their lives for which they are thankful, the timing of these activities – especially the last one – may not help promote a sense of appreciation. The Gratitude Intervention group experienced unexpected classroom instruction changes due to the instructor's illness toward the end of the quarter, which might impact their overall sense of gratitude at posttest.

Shankland and Rosset (2017) identified key components to successfully implementing PPIs in schools—notably, the conceptualization of gratitude. Morgan and Kristajansson (2014) addressed a cross-cultural comparison of gratitude between the UK and the US. Participants in the UK identified the main features of gratitude as having a happy feeling, including a behavioral component, such as smiling, gratefulness, and feelings of indebtedness. The US sample noted feelings related to thankfulness and appreciation as the main features. Interestingly, expressing thanks and providing acknowledgments and recognition of what they are thankful is rated higher for the UK sample compared to the US. Shankland and Rosset (2017) suggested social norms may impact the conceptualization of gratitude. Not every person holds the same definition of gratitude. Although an attempt was made to provide participants with information about gratitude via a presentation before engaging in any gratitude activities, it may not have been enough to provide participants with a rationale for when and why one should feel grateful (Shankland & Rosset, 2017). There could be other emotions that co-occur with gratitude. Morgan and Kristajansson (2014) discussed the impact of negative emotions

such as guilt, embarrassment, and indebtedness. It is possible that along with feeling gratitude for the help we receive from someone could also experience embarrassment because of the help. It may be that the feeling of indebtedness overshadows feelings of gratitude. Participants in the gratitude intervention study were asked to write gratitude letters to two different individuals who had helped them in the past and whom the participant had not had a chance to thank them. Even though the participants found the activity helpful, there may have been underlying feelings that impacted the overall effectiveness of the gratitude intervention. They might perceive themselves as less grateful after participating in the activities at the posttest.

Another consideration would be that students came in with high gratitude scores, which could explain a ceiling effect, where participants who initially reported high levels of gratitude may have had limited room for improvement, resulting in lower gratitude scores at posttest. Even a dip in gratitude scores could be a symptom of regression to the mean.

Wellbeing

Contrary to previous research findings (e.g., Wood et al., 2010), results from the present study indicate that participants who engaged in gratitude activities did not experience a significant increase compared to the control group. Although Emmons and McCullough (2003) suggested that a deliberate focus on one's blessings may have beneficial outcomes toward a person's sense of well-being, they did also identify that findings in their study did not replicate, and a reason could be that a time frame of two to three weeks may not be enough time to observe an effect. There may not have been enough time allowed for participants to benefit from the gratitude activities. Emmons and

McCullough (2003) included an increase in intervention time in their study by adding an extra week (increasing the intervention window from two to three weeks) to the conditions. This study included five activities over five weeks, which may not have been enough time to prompt a change.

Another consideration is the overall well-being scores at pretest and posttest. Both the gratitude and intervention group reported high well-being scores at the beginning of the study, suggesting a possible ceiling effect. The gratitude group experienced a very small increase in well-being scores. The control group experienced a decrease in well-being from pretest to posttest. The posttest was provided towards the end of the academic quarter, and this may have contributed to the decrease in scores, specifically with students preparing for final exams and papers. The gratitude group might have experienced a buffer against decreased well-being because of the gratitude intervention.

Despite the non-significant findings, the potential benefits of increasing well-being in undergraduate students are substantial. Enhancing well-being can contribute to many positive outcomes, including improved academic performance, better mental and physical health, and greater life satisfaction (Diener, 2009; Ryff, 2014). Kaplan et al. (2014) studied the impact of gratitude interventions on working adults, with findings indicating an increase in well-being and gratitude. Therefore, some increase in well-being is beneficial not only for students but would also benefit them in their future employment. Moreover, higher levels of well-being have been linked to stronger interpersonal relationships, increased resilience, and more effective coping strategies in the face of adversity (Fredrickson, 2001; Lyubomirsky et al., 2005). Given these benefits,

gratitude interventions could still be a valuable tool for promoting well-being in educational settings.

Moderating Effect of Gender, Race, and College Generational Status

Gender

Depression, Anxiety, and Stress

Findings suggest that participants' depression and anxiety did not change as a function of their gender identities. In contrast, male participants experienced a statistically significant decrease in stress compared to female participants.

Overall, these findings about the moderating effect of gender seem mixed. At the baseline level, males reported lower levels of depression, anxiety, and stress than females at pretest. Males also had a decrease in depression and stress levels at posttest, whereas females maintained the same levels from pretest. Females did experience a decrease in anxiety levels from pretest to posttest but still reported higher anxiety levels than males at both pretest and posttest. These findings are congruent with previous observations about gender differences in depression, anxiety, and stress among college students. For example, Eisenberg et al. (2007) found that female college students reported higher levels of depression and anxiety than their male counterparts. Similarly, Beiter et al. (2015) found higher levels of depression, anxiety, and stress among females than males. Both studies suggest females are more vulnerable to experiencing financial struggles, relationship issues, and body image concerns.

Salk et al. (2017) conducted a meta-analysis of gender differences in depression. Their nationally representative sample identified that gender differences in depression seem to emerge in adolescence, where females may engage in negative cognitive styles

more often than males. Although Salk et al. (2017) noted that the depression gender gap narrows into adulthood, other sources identify the gap is still present into adulthood. For example, the Mayo Clinic (2019) linked emerging sexuality issues and increased pressure to do well in school and other parts of life at puberty as contributing factors to depression. Since females reach puberty sooner than males, this may support Salk's et al. (2017) account for adolescent differences. Factors associated with adulthood gender differences in depression include unequal power and status, unequal workload distribution, and experiencing sexual abuse at a young age (Mayo Clinic, 2019). Parker and Brotchie (2010) stated females are more vulnerable to depression partly due to exposure to more life event stressors. Females also tend to internalize their feelings of depression and anxiety, which could influence coping styles compared to males who externalize their feelings (Parker & Brotchie, 2010; Zalta & Chambless, 2012). There is limited research on the impact of gratitude interventions based on gender differences.

Males benefited more from the gratitude intervention than the female participants. Males did experience a significant decrease in stress compared to females whereas females maintained the same high level from pretest to posttest. Female students are at a higher risk for experiencing stress (American College Health Association, 2019), and the expectation of college life, including time management and completing coursework, combined with social adjustment, could provoke heightened feelings of stress (Pitt et al., 2018). The stressors associated with college life may have been overwhelming for the intervention to make a meaningful impact.

Wellbeing and Gratitude

This study also found that gender did not moderate the effects of gratitude intervention on college students' sense of well-being or gratitude. In other words, male students did not experience a significant increase in well-being or gratitude than female students. The increase in levels of well-being for males is supported by Rash et al. (2011), who used a gratitude contemplation intervention with a sample of 30 males. The intervention increased their sense of well-being.

Males identified higher well-being at pretest than females. At posttest, well-being for males increased and decreased for females, implying the gratitude intervention may have been more impactful for males than females. Well-being is defined as feelings of happiness (Seligman et al., 2009). The gratitude intervention study focused on assessing subjective well-being, which includes the pursuit of happiness and a pleasant life, including how a person feels as they go about their daily life (Diener, 1984).

Although Seligman's (2011) PERMA framework provides an enabling condition for well-being, female participants came in with higher depression and anxiety scores than males and may not have experienced positive emotions such as happiness or joy. Female participants may also have experienced low engagement due to the difficulties brought on by college expectations and coursework, making the college experience more difficult and less fulfilling. Female participants may have had difficulty developing meaningful relationships, which could have contributed to feelings of depression and anxiety. Finally, engagement in the gratitude activities may not have been helpful because females viewed themselves as less appreciative than they probably thought. If they viewed themselves as having little control over the circumstances of being a college

student, they might not feel that the intervention had much impact on their sense of well-being.

Although both genders experienced a decrease in gratitude, females had a greater decrease than males from pretest to posttest. The gratitude intervention study focused on state gratitude, which is a mood brought on when something is received, prompting a person to reciprocate the feelings towards someone else (McCullough et al., 2001). Emotions may have been co-occurring. Participants in the gratitude study were asked to count their blessings, which included identifying large and small things they should be grateful for and discussing three good things, including having students identify how the good things inspired them to do the same to others. Negative feelings such as guilt and embarrassment (Morgan & Kristajansson, 2014) may come up more in females than males due to the difficulties of not reciprocating gratitude. They may have felt grateful for their blessings and good things that had happened to them but may have felt guilty and embarrassed that they had not reciprocated more towards others.

Ceiling effects may also play a role where both genders came into the study with high levels of well-being and gratitude. Participants who initially reported high levels of gratitude again may have had limited room for improvement, resulting in lower gratitude scores at posttest. Even a dip in well-being and gratitude scores could be a symptom of regression to the mean.

Race

Depression, Anxiety, and Stress

White participants did not experience a significant decrease in depression, anxiety, and stress compared to BIPOC participants. At pretest, the White participants

had higher depression scores than the BIPOC participants. Although there were no significant differences, the gratitude intervention may have impacted depression for the White participants but not the BIPOC participants. The gratitude intervention may have contributed to the stability of the change scores for the BIPOC participants from pretest to posttest. White participants did demonstrate a larger decrease in anxiety from pretest to posttest compared to the BIPOC participants, where the BIPOC participants' scores remained unchanged. Although there were no significant differences, the gratitude intervention may have had an impact. The gratitude intervention may have contributed to the stability of the mean scores for the BIPOC participants from pretest to posttest.

White participants experienced a more impactful outcome based on mean changes scores for depression, anxiety, and stress, but BIPOC may also have benefited from gratitude interventions (Boehm et al., 2011; Datu & Mateo, 2015; Janevic et al., 2022; Cavazos Vela et al., 2019). Overall, the findings of this study seem to support the impact of gratitude interventions on culturally diverse populations (Janevic et al., 2022; Cavazos Vela et al., 2019). Both BIPOC and White individuals benefit from gratitude interventions.

Wellbeing and Gratitude

White participants had lower well-being scores than BIPOC participants; they did show a slight increase in well-being scores compared to BIPOC participants. BIPOC participants showed a slight decrease in well-being from pretest to posttest.

This study focused on an increase in subjective well-being, which includes how a person feels throughout their day and life in general and includes pleasant feelings such as happiness and life satisfaction (Diener, 1984). The gratitude intervention hoped to

inspire students, which in turn would increase their feelings of happiness (well-being). Since prior studies identified how students coming into their first year at college experience higher levels of depression, anxiety, and stress (Duffy et al., 2020; Lee et al., 2021), Eloff et al. (2022) addressed the impact of well-being at it relates to college students' overall health and educational outcomes. Well-being could lead to positive practices such as connecting with others and practicing kindness, leading to higher well-being and overall satisfaction (Lyubomirsky & Layous, 2013; Magyar-Moe et al., 2015). BIPOC students tend to face overt racism, where 60% of individuals perceive they have been discriminated against (Broman et al., 2000). They must deal with extreme cultural expectations placed upon them and difficulties trusting others, which may lead to feelings of insecurity, anxiousness, isolation, hopelessness, and depression (Amirkhan et al., 2022; Druckenmiller, 2022; Sy et al., 2012; Primm, 2018). These difficulties could contribute to decreased feelings of well-being. Overall, both White and BIPOC students reported relatively high levels of well-being at pretest. The decrease in well-being may be another example of regression to the mean and what could be expected during their first year at college.

White participants did not experience a statistically significant increase in gratitude when compared to BIPOC participants. This study focused on state gratitude, defined as a mood that manifests after receiving something seen as valuable from someone else that benefited the person in some way (McCullough et al., 2001). The gratitude intervention hoped to increase gratitude, hopefully leading to an increase in well-being (McCullough et al., 2004; Wood et al., 2008a). Although White and BIPOC participants experienced decreased gratitude from pretest to posttest, this may still not

represent first-year college students. The high levels of gratitude may have been too high, meaning students were already feeling grateful enough where the gratitude intervention would not be helpful. In fact, it may have worked against the intervention as some students viewed the activities as redundant. The decrease in well-being may be yet another example of the ceiling effect or regression toward the mean and what could be expected during their first year at college.

College Generational Status

Depression, Anxiety, and Stress

Continuing-generation participants did not experience a significant decrease in depression, anxiety, or stress compared to first-generation participants.

The continuing-generation participants had a lower depression score at pretest than the first-generation participants. However, the first-generation participants experienced a slight decrease in depression, whereas the continuing generation experienced a slight increase in scores. Stebleton et al. (2014) reported that first-generation participants tended to experience higher levels of depression and anxiety than continuing generation, but they also tended to see a greater decrease in depression scores from pretest to posttest compared to continuing-generation participants. The continuing generation participants experienced no change in depression scores. It could be implied that the gratitude intervention may be more impactful for first-generation compared to continuing-generation.

Similarly, both groups experienced a decrease in anxiety scores from pretest to posttest, but, in this case, the continuing-generation group experienced a greater decrease than the first-generation participants. The continuing generation group had lower scores

at pretest than the first-generation participants. Overall, the gratitude intervention seemed to have improved anxiety for first-generation and continuing generations.

Although the continuing-generation participants reported greater stress at pretest than first-generation participants, both groups experienced the same decrease in stress at posttest. Krejtz et al. (2016) and Fekete and Deichert (2022) reported similar findings. Participants who participated in a gratitude intervention group experienced a decrease in stress. First-generation participants may experience challenges due to a lack of familiarity and understanding with the transition to college compared to continuing-generation students (Sy et al., 2011). These challenges may have increased the stress felt by first-generation students. The stress reduction for both groups indicate gratitude interventions work effectively at reducing stress.

Wellbeing and Gratitude

Continuing-generation participants did not experience a significant increase in well-being or gratitude compared to first-generation participants.

Well-being has been associated with life satisfaction, positive affect, and higher academic achievement (Rand et al., 2020). College generational status refers to first-generation college students with neither parent ever attended college or continuing-generation college students with at least one parent attended college (NCES, 1998). Bui (2002) further described some first-generation students as being a coming from a low-income bracket, BIPOC, nonnative English speakers, and immigrants. This could be an added factor associated with students coming into their first year at college, and therefore may experience higher levels of stress and anxiety (Duffy et al., 2020; Lee et al., 2021).

First-generation students may have challenges related to the transition to college compared to continuing-generation students (Sy et al., 2011).

Since first-generation students experience higher stress, anxiety, and challenges associated with college transitioning (Stebleton et al., 2014), the gratitude intervention may not have been impactful enough for a significant increase in well-being. At the descriptive statistics level, the continuing-generation participants had a higher well-being and gratitude change scores at pretest. However, at posttest, the first-generation participants did show an increase in well-being change scores compared to continuing-generation participants.

Gratitude scores did decrease for both groups from pretest to posttest. A consideration, like the comparison between the gratitude intervention group and control group, is that since students came in with high gratitude scores, it could offer an explanation related to a ceiling effect, where participants who initially reported high levels of gratitude may have had limited room for improvement, resulting in lower gratitude scores at posttest. Even a dip in gratitude scores could be a symptom of regression to the mean.

Strengths/Significance

One focus of this gratitude intervention study was the asynchronous application of the curriculum-embedded intervention. Green et al. (2011) addressed the application of positive psychology in educational settings. A positive outcome would be the opportunity to cultivate positive emotions in schools, including gratitude, resilience, well-being, and even academic achievement, by combining traditional academics with PPIs (Green et al., 2011; Seligman et al., 2009; Waters, 2011). Curriculum-embedded interventions include

PPIs as part of the course content and have been found to reach more students compared to one-to-one or group interventions, including cultures that are hesitant about counseling interventions (Zhang et al., 2020). Contrary to Zhang et al. (2020), Upsher et al. (2022) identified, based on a systematic review of curriculum-embedded interventions used with university students, a lack of strong evidence of the impact of using this intervention method. Overall, based on Upsher et al. (2022), curriculum-embedded interventions do not significantly decrease negative affect such as anxiety or perceived stress, nor do they increase well-being. However, the studies reviewed by Upsher et al. (2022) did not use PPIs but interventions such as muscle relaxation, acceptance and commitment therapy, and mind-body self-care. The findings of this gratitude study may partially support Upsher et al. (2022) due to the non-significant outcome of the gratitude intervention on anxiety and stress and a lack of significant increase in well-being and gratitude. However, the mean difference did identify some change from pretest to posttest in the expected direction based on the hypothesis. The curriculum-embedded gratitude intervention may have helped.

Zhang et al. (2020) reported their classroom-based, positive psychology intervention had improved well-being and decreased depressive symptoms among students. The findings of this gratitude intervention study support the outcome of Zhang et al. (2020) with the significant decrease in depression between the gratitude intervention group and control group. Although the change in well-being was not statistically significant between the two groups, the well-being score increased for the gratitude group and decreased for the control group.

Studies have shown instructors may hesitate to use PPI with their courses due to the possible complexity of implementing the PPIs (Shankland & Rosset, 2017). The LMS, Canvas, was already used in the introductory psychology course, requiring no additional resources. The structure and delivery of the gratitude activities followed the course content setup. Although the instructor of record identified a possible concern that the students had too many items to complete over the course of the quarter, the feedback from the gratitude activity group suggests that participants perceived these activities as helpful. No feedback related to feeling overwhelmed or too busy with the coursework was given.

Another strength of the asynchronous, curriculum-embedded method was the online accessibility of the activities. Even though results were not entirely as expected, this delivery method guaranteed higher than expected participation with the gratitude activities as in-class attendance dropped after week three of the course. Had an in-person approach been applied, there may have been an even lower participation. Using the person-activity fit model to structure the intervention did align the PPI content with impacting as many students as possible, including the asynchronous component.

The quasi-experimental design with a nonequivalent control group helps the researcher attribute the study results to the manipulation of independent variable (i.e., participating in the gratitude intervention or not) rather than other factors such as maturation or history effects, strengthening the internal validity of the study. Having a comparison group also allows for a better understanding of the intervention's effects by comparing the gratitude group to the control group, which did not receive the intervention.

Limitations

Several limitations are associated with the study including the implementation, frequency, timing, and content of the gratitude activities. This study utilized an online, asynchronous intervention application separate from the in-person classroom setting. One rationale was the asynchronous approach would further support the person-activity fit model of treatment dosage and student motivation. It would also provide a structure for students to work on each week's activity. All videos and instructions were provided through Canvas to ensure everyone had access to the information, and the asynchronous access to the videos and information allowed a direct delivery system. Only the gratitude lecture was a required component, meaning students were required to view 90-100% of the video for credit. Although Panopto provides a report of the percentage viewed, there is no way to know if students paid full attention to the content. This applies to the video instructions for each activity. Viewing of the video instructions was low, making it challenging to ascertain how engaged the participants were with each activity. Lyubomirsky and Layous (2013) recommended that engaging in activities once a week was more impactful. They also stated that when individuals are free to choose an activity, the activity becomes more enjoyable. Even though attempts were made to allow participants to benefit from different versions of the gratitude activities, the overall feedback deemed the activities meaningful; participants might still perceive the activities as a mandatory course requirement and thus find them less enjoyable.

This study did not achieve the desired increase in gratitude and well-being or reduction in anxiety. It could be due to the number of gratitude activities students were asked to complete. Although Lyubomirsky and Layous (2013) emphasized the

importance of keeping the dosage of interventions minimal ("the less is more" approach), research has found that interventions with a lower number of active engagements may not see significant results. For instance, when reviewing the usefulness and impact of gratitude intervention on mental health and well-being from eight previous studies, Komase et al. (2021) found that effective gratitude intervention should consist of five or more gratitude activities, each completed weekly for five weeks.

Overall, participants in the gratitude intervention group evaluated the gratitude activities as helpful. There were students who gave low scores and felt the activities were redundant. The "Count Your Blessings" and "Three Good Things" activities may have seemed too similar for students. Asking participants to count their blessings for two weeks in a row, even if instructions were provided to focus on five new things the second week, may not have been novel or interesting enough for students to engage. Lyubomirsky and Layous (2013) addressed the importance of having a variety when asking participants to engage in activities.

In terms of the timing of the activities, the instructor of the course was out with an illness toward the end of the quarter, requiring all the students to access the lectures asynchronously through Canvas. The disruption and decrease in contact with the instructor could have changed the overall climate of the class and made it harder for students to feel a sense of engagement and gratitude. Although gratitude interventions have been shown to help decrease negative affect and increase well-being and gratitude in previous research, not connecting with the instructor may have impacted the posttest results. The last gratitude activity was completed when the course instructor was out with an illness. The disconnect with the instructor and the perceived extra work of going

through the gratitude activity may have impacted the group participants' overall sense of gratitude. Since the control group did not engage in the additional gratitude activities, they did not experience the same impact and, therefore, would not experience a decrease.

To encourage motivation, the gratitude interventions were curriculum-embedded, with point values applied to the pre-and posttest and each gratitude activity. This aligns with the motivation component (Lyubomirsky & Layous, 2013); in this case, the activities were determined to increase the overall impact, meaning point values must be seen as valuable by students for them to also give their fullest effort. The student must see value in the activity and point values may be one way to meet this expectation. After conducting the validity check to ensure all gratitude intervention participants viewed the introduction to gratitude video and completed at least 75% of the gratitude activities, of the 99 that agreed to have their data included in the study, the final intervention group size was 72. Kassarnig et al. (2018) studied the academic performance and behavioral patterns of 538 undergraduate students. Findings indicate that attendance is a powerful predictor of academic performance, where a positive correlation was found between class attendance and grades. The sample included first-year students, some of whom were brand new to the college experience. Attendance in the in-class lecture dropped after the first exam and remained low. Participation was not a required component of the course, and since all assignments and exams, including the textbook, were provided online via Canvas, this may have contributed to low attendance as students could complete their work without being in class. The instructor of record was ill for two weeks towards the end of the quarter, removing students from the class. Although the instructor required students to be present during the last week of the class, attendance was still low.

Kassarnig et al. (2018) also addressed that social environment contributes to academic performance. Online interventions have been shown to increase well-being and happiness and reduce depression (Ouweneel et al., 2013; Sergeant & Mongrain, 2014; Wellenzohn et al., 2016), as well as increase access to the intervention. This limits peer interaction, as expected in a classroom setting. Although another strength of an online intervention helps ensure observations are independent of each other and necessary for most analyses, the lack of interaction with student peers and the instructor of record may have limited the impact of the gratitude intervention. The sample included primarily first-year students; some have had no exposure to the rigor required compared to high school. Eventually, point values matter to students, but there may not be enough educational discipline in first years to fully appreciate the impact of missed points.

Lastly, a debriefing session scheduled to take place and offer students insights into the study was cancelled due to the instructor's illness. As such, the researcher missed an opportunity to connect with the students at the end of the quarter to provide a final check-in and to process the impact of the overall gratitude intervention. Students may not have seen the overall purpose or meaning of the gratitude activities or fully understand the impact of the gratitude intervention.

Implications for Practice

Although the gratitude intervention did not significantly reduce anxiety, promoting gratitude or well-being among college students in the current study, findings did suggest that an asynchronously delivered curriculum-embedded PPI has the potential to buffer against the detrimental effect of depression and stress on college students. Therefore, by considering these implications for practice, educators and institutions can

effectively implement a curriculum-based positive psychology intervention focusing on gratitude, any number of the other PPI approaches, including hope, resilience, positive future thinking, and using strengths in a new way to name a few (Bolier et al., 2013). This will help to enhance undergraduate students' well-being, academic performance, and personal growth, creating a supportive and enriching learning environment.

Positive psychology has played an impactful role in education as an applied approach in education. Integrating gratitude exercises into course curriculum could potentially encourage students to express their gratitude in different ways, for example, acknowledging positive aspects of their lives (Bolier et al., 2013). Different approaches other than gratitude lists or gratitude letters could be used, such as journaling, sharing with peers, or creating gratitude boards, specifically as a class (Fekete & Deichert, 2022; Shankland & Rosset, 2017; Cavazos Vela et al., 2019).

The integration of positive psychology interventions (PPIs) into college-level classrooms has the potential to enhance student well-being, academic performance, and overall satisfaction (McCullough et al., 2004; Zullig et al., 2010; Wood et al., 2008a). However, the success of these interventions hinges on the commitment and enthusiasm of faculty members, specifically, faculty buy-in prior to implementing PPIs. By involving teaching staff in the planning and execution of PPIs, providing training and resources, and highlighting the potential benefits, universities can foster a supportive environment that embraces these evidence-based practices. Ultimately, this will contribute to a more enriching and fulfilling educational experience for students and faculty alike (Shanklan & Rosset, 2017).

The implementation of gratitude interventions in educational settings may provide a cost-effective and accessible means for undergraduate students to manage stress and improve their overall well-being. The interventions that begin in the classroom could then lead the way to developing campus-wide initiatives, including gratitude (or other PPIs) campaigns or events that involve students, faculty, and staff. PPIs could foster interdisciplinary collaboration between faculty, campus mental health professionals, and student support systems. Notably, instructors would be able to identify if any student is struggling more than others and then could involve better support systems for the student. The impact could then go further and lead to the development of best practices and specific intervention approaches that increase the known effect of PPIs on negative affect (Carr et al., 2021). Therefore, by incorporating gratitude practices into their daily lives, students may develop resilience and better-coping mechanisms to handle stressors and challenges they encounter during their academic journey.

Finally, curriculum-embedded PPIs could create a supportive environment within the classroom, which could lead to the development culture of gratitude as faculty and students model gratitude in their interactions with others. Rash et al. (2011) discussed the direct and indirect societal benefits of gratitude intervention and the long-term well-being of those who practice gratitude. Indirect benefits include expressions of thankfulness to one another, which could lead to engagement in kind acts. Direct benefits include prosocial behavior that would draw people into their community and could lead to service within the community.

Implications for Research

The present study supports the use of gratitude interventions to reduce depression and stress among college students (Emmons & McCullough, 2003; Cregg & Cheavens, 2020). The findings regarding changes in anxiety, well-being, and gratitude were mixed or unexpected.

This gratitude intervention focused on increasing state gratitude, or feelings of gratefulness and subjective well-being (McCullough et al., 2004; Wood et al., 2008a). The non-significant results in this study call for a deeper examination of gratitude interventions and the factors, such as timing, frequency, and content of the gratitude activities, that might have contributed to the lack of significant change in well-being and gratitude scores. The non-significant results may also be due in part to the developmental age of the participants. When they were required to complete the additional gratitude activities, especially during a time when there were other stressors such as final exams, they might perceive the intervention to be less enjoyable and report lower levels of gratitude or well-being. Future research should explore different strategies for cultivating state gratitude in undergraduate students. For example, Rash et al. (2011) used a gratitude contemplation intervention, and the results indicated increased well-being. Conducting the study with college students of more senior class standing or graduate students would also be beneficial.

Given the unexpected decrease in gratitude scores in the intervention group, a replication study is warranted to better understand the factors contributing to this result. It would be beneficial to include some components of the intervention in the classroom to foster a social environment, as Kassarnig et al. (2018) mentioned. Other than providing reminders in class to complete the gratitude activities, the instructor of record did not

address activities within a class discussion, and all information related to the study was provided through Canvas, which is a potential limitation that can be addressed in future research.

Finally, to increase faculty buy-in and allow for consistent implementation of PPIs through an LMS, the development of PPI modules would provide a ready-made, easy-to-install addition to any college-level curriculum. Developing PPI modules for LMS platforms presents numerous benefits, including increased accessibility and customization and fostering faculty engagement and collaboration. These modules can play a vital role in facilitating the implementation of PPIs in college classrooms. By investing in creating these modules, colleges, and universities demonstrate their commitment to nurturing a supportive and enriching educational environment for students and faculty.

Conclusion

The current study utilized a gratitude intervention that all teachers could use to incorporate positive psychology intervention into their current curriculum. By providing a gratitude-focused PPI as part of a psychology course curriculum, the study's primary goal was to identify the acceptability and the effect of such an intervention on enhancing well-being and gratitude and reducing negative affect, such as the symptoms of depression, anxiety, and stress.

Implementing gratitude interventions in educational settings could provide a cost-effective and accessible means for undergraduate students to manage stress and improve their overall well-being. By incorporating gratitude practices into their daily lives,

students may develop resilience and better-coping mechanisms to handle stressors and challenges they encounter during their academic journey.

References

Adler, L. (2021). *The long covid of American higher education. Society for the Advancement of Socio-Economics.* https://sase.org/blog/the-long-covid-of-american-higher-education/

American College Health Association. (2022). *American College Health Association-National College Health Assessment III: Undergraduate Student Executive Summary Fall 2021.* Silver Spring, MD: American College Health Association. https://www.acha.org/documents/ncha/NCHA-III_FALL_2021_UNDERGRADUATE_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf

American Psychological Association, DSM-5 Task Force. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing, Inc. https://doi.org/10.1176/appi.books.9780890425596

Amirkhan, J. H., & Kofman, Y. B. (2018). Stress overload as a red flag for freshman failure and attrition. *Contemporary Educational Psychology, 54*, 297-308. http://dx.doi.org/10.1016/j.cedpsych.2018.07.004

Amirkhan, J. H., Manalo, R., & Velasco, S. E. (2022). Stress overload in first-generation college students: Implications for intervention. *Psychological Services*. http://dx.doi.org/10.1037/ser0000650

Asner-Self, K. K., Schreiber, J. B., & Marotta-Walters, S. (2006). A cross-cultural analysis of the Brief Symptom Inventory-18. *Cultural Diversity and Ethnic Minority Psychology, 12*(2), 367-375. https://doi.org/10.1037/1099-9809.12.2.367

Awadalla, S., Davies, E. B., & Glazebrook, C. (2020). A longitudinal cohort study to explore the relationship between depression, anxiety, and academic performance among Emirati university students. *BMC Psychiatry, 20*(1), 448. https://doi.org/10.1186/s12888-020-02854-z

Azrin, N. H., & Nunn, R. G. (1973). Habit-reversal: A method eliminating nervous habits and tics. *Behaviour Research and Therapy, 11*(4), 619-628. https://doi.org/10.1016/0005-7967(73)90119-8

Besser, A., & Zeigler-Hill, V. (2014). Positive personality features and stress among first-year university students: Implications for psychological distress, functional impairment, and self-esteem. *Self and Identity, 13*(1), 24-44. https://doi.org/10.1080/15298868.2012.736690

Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders, 173*(1), 90-96. https://doi.org/10.1016/j.jad.2014.10.054

Boehm, J. K., Lyubomirsky, S., & Sheldon, K. M. (2011). A longitudinal experimental study comparing the effectiveness of happiness-enhancing strategies in Anglo Americans and Asian Americans. *Cognition and Emotion, 25*(7), 1263-1272. https://doi.org/10.1080/02699931.2010.541227

Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Public Health, 13*(119). https://doi.org/10.1186/1471-2458-13-119

Bouchrika, I. (2023, April 5). *College dropout rates: 2023 statistics by race, Gender & Income*. Research.com. https://research.com/universities-colleges/college-dropout-rates

Broglia, E., Millings, A., & Barkham, M. (2021). Student mental health profiles and barriers to help seeking: When and why students seek help for a mental health concern. *Counseling & Psychotherapy Research, 21*, 816-826. https://doi.org/10.1002/capr.12462

Broman, C. L., Mavaddat, R., & Hsu, S-Y. (2000). The experience and consequences of perceived racial discrimination: A study of African Americans. *Journal of Black Psychology, 26*(2), 165-180. https://doi.org/10.1177/0095798400026002003

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological wellbeing. *Journal of Personality and Social Psychology, 84*(4), 822-848. https://doi.org/10.1037/0022-3514.84.4.822

Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal, 36*(1), 3–11. https://link.gale.com/apps/doc/A85007762/AONE?u=anon~fe9d73c6&sid=googleScholar&xid=c3b17240

Burke, M., & Freedberg, L. (2021, March 22). *Viability of some California community colleges threatened by steep drop in enrollment.* CBS News. https://www.cbsnews.com/sanfrancisco/news/viability-of-some-california-community-colleges-threatened-by-steep-drop-in-enrollment/

Campbell, D. T., & Stanely, J. C. (1966). *Experimental and quasi-experimental designs for research.* Sage Publishing.

Caputo, A. (2016). Italian translation and validation of the Gratitude Questionnaire (GQ-6). *International Journal of Wellbeing, 6*(2), 80-92. https://doi.org/10.5502/ijw.v6i2.492

Carmona-Halty, M., Marin-Gutierrez, M., Mena-Chamorro, P., Sepulveda-Paez, G., & Ferrer-Urbina, R. (2022). Flourishing scale: Adaptation and evidence of validity in a Chilean high school context. *Frontiers in Psychology, 13,* 795452. https://doi.org/10.3389/fpsyg.2022.795452

Cataldi, E. F., Bennett, C. T., Chen, X., & Simone, S. A. (2018). *First-generation students: College access, persistence, and postbachelor's outcomes. National Center for Educational Sciences.* https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018421

Carr, A., Cullen, K., Keeney, C., Canning, C., Mooney, O., Chinseallaigh, E., & O'Dowd, A. (2021). Effectiveness of positive psychology interventions: A systemic review and meta-analysis. *The Journal of Positive Psychology*, *16*(6), 749-769. https://doi.org/10.1080/17439760.2020.1818807

Cavazos Vela, J., Smith, W. D., Rodriguez, K., & Hinojosa, Y. (2019). Exploring the impact of a positive psychology and creative journal arts intervention with Latina/o adolescents. *Journal of Creativity in Mental Health, 14*(3), 280-291. https://doi.org/10.1080/15401383.2019.1610535

Center for Collegiate Mental Health. (2020). *Center for collegiate mental health 2020 annual report* (Publication No. RR-20-01). Association for University and

College Counseling Center Directors (AUCCCD); Titanium Software, Inc.; Pennsylvania State University, Student Affairs. https://ccmh.psu.edu/annual-reports

Checa, I., Perales, J., & Espejo, B. (2018). Spanish validation of the Flourishing Scale in the general population. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 37*(4), 949-956. https://doi.org/10.1007/s12144-017-9581-0

Chilver, M. R., & Gatt, J. M. (2022). Six-week online multi-component positive psychology intervention improves subjective wellbeing in young adults. *Journal of Happiness Studies, 23*, 1267-1288. https://doi.org/10.1007/s10902-021-00449-3

Chodkiweicz, A. R., & Boyle, C. (2016). Positive psychology school-based interventions: A reflection on current success and future directions. *Review of Education, 5*(1), 60-86. https://doi.org/10.1002/rev3.3080

Claybourn, C. (2023, February 9). *How to avoid dropping out of college.* U.S. News. https://www.usnews.com/education/best-colleges/articles/dropping-out-of-college-why-students-do-so-and-how-to-avoid-it

Clements, Z. A., Rostosky, S. S., McCurry, S., & Riggle, E. D. B. (2021). Piloting a brief intervention to increase positive identity and wellbeing in transgender and nonbinary individuals. *Professional Psychology: Research and Practice, 52*(4), 328-332. https://doi.org/10.1037/pro0000390

Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. JAMA, 298(14), 1685-1687. https://doi.org/ 10.1001/jama.298.14.1685. PMID: 17925521

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 386-396. https://doi.org/10.2307/2136404

Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & Oskamp (Eds.), *The social psychology of health* (pp. 31-67). Thousand Oaks, CA: Sage Publications.

Conway, A. M., Tugade, M. M., Catalino, L. I., & Fredirckson, B. L. (2012). The broaden-and-build theory of positive emotions: Form, function, and mechanisms. In D.S. Bonewell & A.C. Ayers (Eds.), *Oxford handbook of Happiness* (pp.17-44). Oxford University Press.

Copeland, W. E., McGinnis, E., Bai, Y., Adams, Z., Nardone, H., Devadanam, V., Rettew, J., & Hudziak, J. J. (2021). Impact of COVID-19 pandemic on college student mental health and wellness. *Journal of American Academy of Child & Adolescent Psychiatry*, *60*(1), 134-141. https://doi.org/10.1016/j.jaac.2020.08.466

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago, IL: Rand McNally College Publishing Company.

Cousin, L., Redwine, L., Bricker, C., Kip, K., & Buck, H. (2020). Psychometrics of the Gratitude Questionnaire-6 in African Americans at risk for cardiovascular disease.

Western Journal of Nursing and Research, 42(12), 1148-1154. https://doi.org/10.1177/0193945920922777

Cregg, D. R., & Cheavens, J. S. (2020). Gratitude interventions: Effective self-help? A meta-analysis of the impact of symptoms of depression and anxiety. *Journal of Happiness Studies, 22,* 413-445. https://doi.org/10.1007/s10902-020-00236-6

Datu, J. A. D., & Mateo, N. J. (2015). Gratitude and life satisfaction among Filipino adolescents: The mediating role of meaning of life. *International Journal for the Advancement of Counselling, 37*, 198-206. https://doi.org/10.1007/s10447-015-9238-3

Davidson, K. (2022, April 6). *Why we use BIPOC.* YWCA. https://www.ywcaworks.org/blogs/ywca/wed-04062022-0913/why-we-use-bipoc

De Gree, A. (2022, April 10). *Broaden and build theory*. https://study.com/learn/lesson/broaden-and-build-theory-overview-criticism-examples.html

Deichert, N., Prairie Chicken, M., & Hodgman, L. (2019). Appreciation of others buffers the association of stressful life events with depressive and physical symptoms. *Journal of Happiness Studies, 20,* 1071-1088. https://doi.org/10.1007/s10902-018-9988-9

Derogatis, L. R. (2000). *The brief symptom inventory-18: Administration, scoring and procedures manual.* Minneapolis, MN: National Computer Systems.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542-575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., Wirtz, D., Biswas-Diener, R., Tov, W., Kim-Prieto, C., Choi, D.-W., & Oishi, S. (2009). New measures of wellbeing. In E. Diener (Ed.), *Assessing wellbeing: The collected works of Ed Diener* (pp. 247- 266). Springer. https://doi.org/10.1007/978-90-481-2354-4_12

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New measures of wellbeing: Flourishing and positive and negative feelings. *Social Indicators Research, 97*(2), 143-156. https://doi.org/10.1007/s11205-009-9493-y

Dickens, L. R. (2017). Using gratitude to promote positive change: A series of meta-analyses investigating the effectiveness of gratitude interventions. *Basic and Applied Social Psychology*, *39*(4), 193-208. https://doi.org/10.1080/01973533.2017.1323638

Donaldson, S. I., Lee, J. Y., & Donaldson, S. I. (2018). Evaluating positive psychology interventions at work: A systematic review and meta-analysis. *International Journal of Applied Positive Psychology, 4*, 113-134. https://doi.org/10.1007/s41042-019-00021-8

Donaldson, S. I., van Zyl, L. e., & Donaldson, S. I. (2022). PERMA+4: A framework for work-related wellbeing, performance, and positive organizational psychology 2.0. *Frontiers in Psychology, 12*, 817244. https://doi/org/10.3389/fpsyg.2021.817244

Druckenmiller, R. (2022, July 22). *College students and depression: A guide for parents.* Mayo Clinic Health Systems. https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/college-students-and-depression

Duffy, A., Keown-Stoneman, Goodday, S., Horrocks, J., Lowe, M., King, N., Pickett, W., McNevin, S. H., Cunningham, S., Rivera, D., Bisdounis, L., Bowie, C. R., Harkness, K., & Saunders, K. E. A. (2020). Predictors of mental health and academic outcomes in first-year university students: Identifying prevention and early-intervention targets. *BJPsych Open, 6*(3), 1-8. https://doi.org/10.1192/bjo.2020.24

Duffy, M. E., Twenge, J. M., & Joiner, T. E. (2019). Trends in mood and anxiety symptoms and suicide-related outcomes among US undergraduates, 2007-2018: Evidence of two national surveys, *Journal of Adolescent Health, 65*(5), 590-598. https://doi.org.10.1016/j.jadohealth.2019.04.033

Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic Medicine, 81*(4), 354-373. https://doi.org/10.1097/00001888-200604000-00009

Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical Care, 45,* 594–601. http://dx.doi.org/10.1097/MLR.0b013e31803bb4c1

Eloff, I., O'Neil, S., & Kanengoni, H. (2022). Factors contributing to student wellbeing: Student perspectives. In L. Schutte, T. Guse, & M. P. Wissing (Eds.), Embracing wellbeing in diverse African contexts: Research perspectives (pp. 185-203). Cross-Cultural Advancements in Positive Psychology. Springer. https://doi.org/10.1007/978-3-030-85924-4_10

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective wellbeing in daily life. *Journal of Personality and Social Psychology, 84*(2), 377-389. https://doi.org/10.1037/0022-3514.84.2.377

Extremera, N., Sanchez-Alvarez, N., & Rey, L. (2020). Pathways between ability emotional intelligence and subjective well-being: Bridging links through cognitive emotion regulation strategies. *Sustainability, 12*(5), 2111. https://doi.org/10.3390/su12052111

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175-191. https://doi.org/10.3758/bf03193146

Feldman, D. B., & Dreher, D. E. (2012). Can hope be changed in 90 minutes? Testing the efficacy of a single-session goal-pursuit intervention for college students. *Journal of Happiness Studies, 13*(4), 745-759. https://doi.org/10.1007/s10902-011-9292-4

Fekete, E. M., & Deichert, N. T. (2022). A brief gratitude writing intervention decreased stress and negative affect during the Covid-19 pandemic. *Journal of Happiness Studies,* 1-24. https://doi.org/10.1007/s10902-022-00505-6

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage Publications Ltd.

Franke, G. H., Jaeger, S., Glaesmer, H., Barkmann, C., Petrowski, K., & Braehler, E. (2017). Psychometric analysis of the brief symptom inventory 18 (BSI-18) in a

representative German sample. *MBC Medical Research Methodology, 17*(14), 1-7. https://doi.org/10.1186/s12874-016-02833-3

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*(3), 300-319. https://doi.org/10.1037/1089-2680.2.3.300

Fredrickson, B. L. (2000). Cultivating positive emotions to optimize health and wellbeing. *Prevention and Treatment, 3*(1). Article 1. https://doi.org/10.1037/1522-3736.3.1.31a

Fredrickson, B. L., (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive psychology. *The American Psychologist, 56*(3), 218-226. https://doi.org/10.1037//000-066X.53.3.218

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Translations of the Royal Society B: Biological Sciences, 359*(1449), 1367-1378. https://doi.org/10.1098/rstb.2004.1512

Fritz, M. M., & Lyubomirsky, S. (2018). Whither happiness? When, how, and why might positive activities undermine wellbeing. In the J. P. Forgas & R. F. Baumeister (Eds.), *The social psychology of living well* (pp. 101-115). Routledge.

Gabana, N. T., Steinfeldt, J., Wong, Y. J., Chung, Y. B., & Svetina, D. (2019). Attitude of gratitude: Exploring the implementation of gratitude intervention with college athletes. *Journal of Applied Sports Psychology, 31*, 273-284. https://doi.org/10.1080/10413200.2018.1498956

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*(2), 103-110. https://doi.org/10.1037/1089-2680.9.2.103

Geng, Y., Ni, X., Wang, Y., Fan, J., Qian, Y., & Li, X. (2022). Factorial structure and measurement invariance of the Brief Symptom Inventory-18 among Chinese adults. *Frontiers in Psychology, 13,* 882815. https://doi.org/10.3389/fpsyg.2022.882815

Graf, M. C., Baudiano, B. A., & Geller, P. A. (2008). Written emotional disclosure: A controlled study of the benefits of expressive writing homework in outpatient psychotherapy. *Psychotherapy Research, 18*(4), 389-399. https://doi.org/10.1080/10503300701691664

Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PLoS ONE, 15*(8), 0255634. https://doi.org/10.1371/journal.pone.0255634

Green, S., Oades, L., & Robinson, P. (2011). Positive education: Creating flourishing students, staff and schools. *Australian Psychology Society, 2*. https://psychology.org.au/publications/inpsych/2011/april/green

Haikalis, M., Doucette, H., & Meisel, M. K. (2022). Changes is college student anxiety and depression from pre to during Covid-19: Perceived stress, academic challenges, and loneliness, and positive perceptions. *Emerging Adulthood, 10*(2), 534-545. https://doi.org/10.1177/21676968211058516

Hammill, J., Nguyen, T., & Henderson, F. (2020). Student engagement: The impact of positive psychology interventions on students. *Active Learning in Higher Education,* 1-14. https://doi.org/10.1177/1469787420950589

Hanson, M. (2022, June 17). College dropout rates. *Education Data Initiative*. https://educationdata.org/college-dropout-rates

Hedges, L. V. (1981). Distribution theory for Glass's estimator of effect size and related estimators. *Journal of Educational Statistics, 6*(2), 107-128. https://doi.org/10.2307/1164588

Heekerens, J. B., Eid, M., Heinitz, K., & Merkel, B. (2021). Cognitive-affective responses to online positive psychology interventions: The effects of optimistic, grateful, and self-compassionate writing. *Applied Psychology: Health and Wellbeing*, 1-24. http://dx.doi.org/10.1111/aphw.12326

Hernandez-Torrano, D., Ibrayeva, L., Sparks, J., Lim, N., Clementi, A., Almukhambetova, A., Nurtayev, Y., & Muratkyzy, A. (2020). Mental health and wellbeing of university students" A bibliometric mapping of the literature. *Frontiers in Psychology, 11*, 1226. https://doi.org/10.3389/fpsyg.2020.01226

Hubbard, K., Reohr, P., Tolcher, L., & Downs, A. (2018). Stress, mental health symptoms, and help-seeking in college students. *Psi Chi Journal of Psychological Research, 23*(4), 293-305. https://doi.org/10.24839/2325-7342.JN23.4.293

Hunt, J. & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46*, 30-10. https://doi.org/10.1016/j.jadohealth.2009.08.008

Hysenbegasi, A., Hass, S. L., & Rowland, C. R. (2005). The impact of depression on the academic productivity of university students. *Journal of Mental Health Policy and Economics, 8*(3), 145-151.

Janevic, M., Robinson-Lane, S. G., Courser, R., Brines, E., & Hassett, A. L. (2022). A community health worker-led positive psychology intervention for African

American older adults with chronic pain. *The Gerontologist,* 1-12. https://doi.org/10.1093/geront/gnac010

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research and Development, 37*(1), 58-71. https://doi.org/10.1080/07294360.2017.1344197

Kaplan, S., Bradley-Geist, J. C., Ahmad, A., Anderson, A., Hargrove, A. K., & Lindsey, A. (2014). A test of two positive psychology interventions to increase employee well-being. *Journal of Business Psychology, 29*, 367-380. https://doi.org/10.1007/a10869-013-9319-4

Kassarnig, V., Mones, E., Bjerre-Nielsen, A., Sapiezynski, P., Dreyer Lassen, D., & Lehmann, S. (2018). Academic performance and behavioral patterns. *EPJ Data Science, 7*(10), 1-16. https://doi.org/10.1140/epjds/s13688-018-0138-8

Kelchen, R. (2018). *A look at college students' living arrangements*. https://robertkelchen.com/2018/05/28/a-look-at-college-students-living-arrangements/

Kennedy, G. J., & Tuckman, B. W. (2013). An exploration into the influence of academic and social values, procrastination, and perceived school belongingness on academic performance. *Social Psychology of Education, 16*(435), 465-470. https://doi.org/10.1007/s11218-013-9220-z

King, L. A., (2001). The health benefits of writing about life goals. *Personality and Social Psychology Bulletin, 27*(7), 798-807. https://doi.org/10.1177/0146167201277003

Kobau, R., Seligman, M. E., Peterson, C., Diener, E., Zack, M. M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: Perspectives and strategies from positive psychology. *American Journal of Public Health, 101*(8), https://doi.org/10.2105/AJPH.2010.300083

Komase, Y., Watanabe, K., Hori, D., Nozawa, K., Hidaka, Y., Iida, M., Imamura, K., & Kawakami, N. (2021). Effects of gratitude intervention on mental health and wellbeing among workers: A systematic review. *Journal of Occupational Health, 63*, 12290. https://doi.org/10.1002/1348-9585.12290

Krejtz, I., Nexlek, J. B., Mischnicka, A., Holas, P., & Rusanowska, M. (2016). Counting one's blessings can reduce the impact of daily stress. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 17*(1), 25-39. https://doi.org/10.1007/s10902-014-9578-4

Kumar, S. A., Edwards, M. E., Grandgenett, H. M., Scherer, L. L., Dilillo, D., & Jaffe, A. E. (2022). Does gratitude promote resilience during a pandemic? An examination of mental health and positivity at the onset of Covid-19. *Journal of Happiness Studies, 23*, 3463-3483. https://doi.org/10.1007/s10902-022-00554-x

Lambert, L., Passmore, H.-A., & Joshanloo, M. (2019). A positive psychology intervention program in a culturally-drivers university: Boosting happiness and reducing fear. *Journal of Happiness Studies, 20*(2), 1141-1162. https://doi.org/10.1007/s10902-018-9993-z

Langer, A. I., Ulloa, V. G., Aguilar-Parra, J. M., Araya-Veliz, C., & Brito, G. (2016). Validation of a Spanish translation of the Gratitude Questionnaire (GQ-6) with a

Chilean sample of adults and high schoolers. *Health and Quality of Life Outcomes, 14*(53). https://doi.org/10.1186/s12955-016-0450-6

Lee, J., Jeong, H. J., & Kim, S. (2021). Stress, anxiety, and depression among undergraduate students during the Covid-19 pandemic and their use of mental health services. *Innovative Higher Education, 46*, 519-538. https://doi.org/10.1007/s10755-021-09552-y

Linley, P. A., Joseph, S., Maltby, J., Harrington, S., & Wood, A. M. (2009). Positive psychology applications. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 35-47). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195335446.001.0001

Liu, C. H., Pinder-Amaker, S., Hahm, H. C., & Chen, J. A. (2020). Priorities for addressing the impact of the Covid-19 pandemic on college student mental health. *Journal of American College Health*. https://doi.org/10.1080/07448481.2020.1803882

Liu, K., Duan, Y., & Wang, Y. (2021). The effectiveness of a web-based positive psychology intervention in enhancing college students' mental wellbeing. *Social Behavior and Personality, 49*(8), 10459. http://dx.doi.org/10.2224/sbp.10459

Lomas, T., Froh, J. J., Emmons, R. A., Mishra, A., & Bono, G. (2014). Gratitude interventions: A review and future agenda. In A. C. Parks and S. M. Schueller (Eds.), *The Wiley Blackwell Handbook of Positive Psychology Interventions* (pp. 3-19). John Wiley & Sons, Ltd.

Loo, J. M. Y., Tsai, J., Raylu, N., & Oei, T. P. S. (2014). Gratitude, hope, mindfulness and personal growth initiative: Buffers or risk factors for problem gambling? *PLOS ONE, 9*(2), 83889. https://doi.org/10.1371/journal.pone.0083889

Lopez, S. J., & Gallagher, M. W. (2015). A case for positive psychology. In S. J. Lopez and C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 3-11). Oxford University Press.

Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase wellbeing? *Current Direction in Psychological Science, 22*(1), 57-62. https://doi.org/10.1177/0963721412469809

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(2), 111-131. https://doi.org/10.1037/1089-2680.9.2.111

Magyar-Moe, M. L., Owens, R. L., & Conoley, C. W. (2015). Positive psychological interventions in counseling: What every counseling psychologist should know. *Positive Psychology Special Issue, 43*(4), 508-557. https://doi.org/10.1177/0011000015573776

Marcus, M., & Tomasi, D. (2020). Emotional and cognitive responses to academic performance and grade anxiety. *Journal of Medical Research and Health Sciences, 3*(4), 919-925. https://doi.org/10.15520/jmrhs.v3i4.172

Maymon, R., & Hall, N. C. (2021). A review of first-year student stress and social support. *Social Sciences, 10*(12) 472. https://doi.org/10.3390/socsci10120472

Maymon, R., Hall, N. C., & Harley, J. M. (2019). Supporting first-year students during the transition to higher education: The importance of quality and source of

received support for student wellbeing. *Student Success, 10*(3), 64-75. https://doi.org/10.5204/ssj.v10i3.1407

Mayo Clinic. (2019, January 29). *Depression in women: Understanding the gender gap*. https://www.mayoclinic.org/diseases-conditions/depression/in-depth/depression/art-20047725

McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*(1), 112-127. https://doi.org/10.1037/0022-3514.82.1.112

McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a moral affect? *Psychology Bulletin, 127*(2), 249-266. http://dx.doi.org/10.1037/0033-2909.127.2.249

McCullough, M. E., Tsang, J., & Emmons, R. A. (2004). Gratitude in intermediate affective terrain: Links of moods to individual differences and daily emotional experience. *Journal of Personality and Social Psychology, 86*, 295-309. https://doi.org/10.1037/0022-3514.86.2.295

Meda, N., Pardini, S., SLongo, I., Bodini, L., Zordan, M. A., Rigobello, P., Visioli, R., & Novara, C. (2021). Students' mental health problems before, during, and after Covid-19 lockdown in Italy. *Journal of Psychiatric Research, 134*, 69-77. https://doi.org/10.1016/j.jpsychires.2020.12.045

Mertler, C. A., & Vannatta, R. A. (2010). *Advanced and multivariate statistical method*s (4^{th} ed.). Pyrczak Publishing.

Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of*

Health Studies, 16(1), 41-81. https://ezproxy.spu.edu/login?url=https://www-proquest-com.ezproxy.spu.edu/scholarly-journals/college-students-academic-stress-relation-their/docview/210480531/se-2

Mitchell, J., Stanimirovic, R., Klein, B., & Vella-Brodrick, D. (2009). A randomized controlled trial of a self-guided internet intervention promoting wellbeing. *Computers in Human Behavior, 25*(3), 749-760. https://doi.org/10.1016

Mitchell, J., Vella-Brodrick, D., & Klein, B. (2010). Positive psychology and the internet: A mental health opportunity. *Electronic Journal of Applied Psychology, 6*(2), 30-41. https://doi.org/10.7790/ejap.v6i2.230

Morgan, B., Gulliford, L., & Carr, D. (2015). Educating gratitude: Some conceptual and moral misgivings. *Journal of Moral Education, 44*(1), 97-111. https://doi.org/10.1080/03057240.2014.1002461

Morgan, B., & Kristajansson, K. (2014). Gratitude in the UK: A new prototype analysis and cross-cultural comparison. *The Journal of Positive Psychology, 9*(4), 281-294. https://doi.org/10.1080/17439760.2014.898321

Muro, A., Soler, J., Cebolla, A., & Cladellas, R. (2018). A positive psychological intervention for failing students: Does it improve academic achievement and motivation? A pilot study. *Learning and Motivation, 63*, 126-132. https://doi.org/10.1016/j.lmot.2018.04.002

National Center for Education Statistics (NCES). (2020, May 22). *College enrollment rates*. https://nces.ed.gov/programs/coe/indicator/cpb/college-enrollment-rate

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*(4), 569-582. https://doi.org/ 10.1037//0021-843x.100.4.569

Ouweneel, E., Le Blank, P. M., & Schaufeli, W. B. (2013). Do it yourself: An online positive psychology intervention to promote positive emotions, self-efficacy, and engagement at work. *Career Development International, 18*(2), 173-195. https://doi.org/10.1108/CDI-10-2012-0102

Parker, G., & Brotchie, H. (2010). Gender differences in depression. *International Review of Psychiatry*, *22*(5), 429-436. https://doi.org/10.3109/09540261.2010.492391

Pedrotti, J. T. (2014). Taking culture into account with positive psychology interventions. In A. C. Parks and S. M. Schueller (Eds.), *The Wiley Blackwell Handbook of Positive Psychology Interventions* (pp. 403-415). John Wiley & Sons, Ltd.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* American Psychological Association.

Pitt, A., Oprescu, F., Tapia, G., & Gray, M. (2018). An exploratory study of students' weekly stress levels and sources of stress during the semester. *Active Learning in Higher Education, 19*(1), 61-75. https://doi.org/10.1177/1469787417731194

Primm, A. B. (2018, April 2). *College students of color: Confronting the complexities of diversity, culture, and mental health.* Higher Education Today. https://www.higheredtoday.org/2018/04/02/college-students-color-confronting-complexities-diversity-culture-mental-health/

Rad, M. S., Martingano, A. J., & Ginges, J. (2018). Toward a psychology of Homo sapiens: Making psychological science more representative of the human population. *PNAS, 115*(45). https://doi.org/10.1073/pnas.1721165115

Rand, K. L., Shanahan, M. L., Fischer, I. C., & Fortney, S. K. (2020). Hope and optimism as predictors of academic performance and subjective well-being in college students. *Learning and Individual Differences, 81*, 101906. https://doi.org/10.1016/j.lindif.2020.101906

Rash, J. A., Matsuba, M. K., & Prkachin, K. M. (2011). Gratitude and well-being: Who benefits the most from a gratitude intervention? *Applied Psychology: Health and Well-Being, 3*(3), 350-369. https://doi.org/10.1111/j.1758-0854.2011.01058.x

Renshaw, T. L., & Rock, D. K. (2018). Effects of a brief grateful thinking intervention on college students' mental health. *Mental Health & Prevention, 9*, 19-24. https://doi.org/10.1016/j.mhp.2017.11.003

Ritterband, L. M., Gonder-Frederick, L. A., Cox, D. J., & Clifton, A. D. (2003). Internet interventions: In review, in use, and into the future. *Professional Psychology: Research and Practice, 34*(5), 527-534. https://doi.org/10.1037/0735-7028.34.5.527

Ritterband, L. M., Thorndike, F. P., Cox, D. J., Kovatchev, B. P., & Genoder-Frederick, L. A. (2009). A behavior change model for internet interventions. *Annals of Behavioral Medicine, 38*(1), 18-27. https://doi.org/10.1007/s12160-009-9133-4

Rivera, H. (2022, August 15). *First-generation college student statistics in 2022*. Bankrate. https://www.bankrate.com/loans/student-loans/first-generation-college-student-statistics/

Roberts, R. (2022, March 15). *Shaping the future of health and healthcare.* World Economic Forum. https://www.weforum.org/agenda/2022/03/education-institutions-and-fostering-a-true-culture-of-care/

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudemonic wellbeing. *Annual Review of Psychology, 52*(1), 141-166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryff, C. D. (1995). Psychological well-being in adulthood. *Current Directions in Psychological Science*, *4*(4), 99-104. https://doi.org/10.1111/1467-8721.ep10772395

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological wellbeing. *Journal of Personality and Social Psychology, 57*(6), 1069-1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D. (2014). Psychological well-being revisited: Advances in science and practice. *Psychother Psychosom, 83*(1), 10-28. https://doi.org/10.1159/000353263

Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses and diagnoses and symptoms. Psychological Bulleting, 143(8), 783-822. https://doi.org/10.1037/bul0000102

Schueller, S. M. (2012). Personality fit and positive interventions: Extraverted and introverted individuals benefit from different happiness increasing strategies. *Psychology, 12A*, 1166-1173. https://doi.org/ 10.4236/psych.2012.312A172

Schueller, S. M. (2014). Person-activity fit in positive psychology interventions. In A. C. Parks and S. M. Schueller (Eds.), *The Wiley Blackwell Handbook of Positive Psychology Interventions* (pp. 385-402). John Wiley & Sons, Ltd.

Seligman, M. E. P. (1995). The effectiveness of psychotherapy: The consumer Reports study. *American Psychologist, 50*(12), 965-974. https://doi.org/ 10.1037/0003-066X.50.12.965

Seligman, M. E. P. (1998). Building human strength: psychology's forgotten mission. *APA Monitor, 29*(1), 2. https://doi.org/10.1037/e529932010-003

Seligman, M. E. P. (2002). Positive psychology, positive prevention, and positive therapy. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 3-9). Oxford University Press.

Seligman, M. E. P. (2004). Can happiness be taught? *JSTOR, 133*(2), 80-87. https://www.jstor.org/stable/20027916

Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and wellbeing.* Simon and Schuster.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist, 55*(1), 5-14. https://doi.org/10.1037/0003-066X.55.1.5

Seligman, M. E. P., Ernst, R., Gillham, J., Reivich, K., & Linkin, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35,* 293-311. https://doi.org/10.1080/03054980902934563

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421. https://doi.org/10.1037/0003-066X.60.5.410

Sergeant, S., & Mongrain, M. (2014). An online optimism intervention reduces depression in pessimistic individuals. *Journal of Consulting and Clinical Psychology, 82*(2), 263-274. https://doi.org/10.1037/a0035536

Shankland, R., & Rosset, E. (2017). Review of brief school-based positive psychological interventions: A taster for teachers and educators. *Educational Psychology Review, 29*(2), 363-392. https://doi.org/10.1007/s10648-016-9357-3

Shea, M., Wong, Y. J., Nguyen, K. K., & Gonzalez, P. D. (2019). College students' barriers to seeking mental health counseling: Scale development and psychometric evaluation. *Journal of counseling psychology, 66*(5), 626–639. https://doi.org/10.1037/cou0000356

Sheldon, K. M., & Lyumbomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualizing best possible selves. *Journal of Positive Psychology, 1*(2), 73-82. https://doi.org/10.1080/1746976050051067

Sieber, J. E., & Saks, M. J. (1989). A census of subject pool characteristics and policies. *American Psychologist, 44*(7), 1053-1061. https://doi.org/10.1037//0003-066x.44.7.1053

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing wellbeing and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology: In Session, 65*(5), 467-687. https://doi.org/10.1002/jclp.20593

Singh, K., Junnarkar, M., & Jaswal, S. (2016). Validating the Flourishing Scale and the Scale of Positive and Negative Experience in India. *Mental Health, Religion & Culture, 19*(8), 943-954. https://doi.org/10.1080/13674676.2016.1229289

Smith, A. (2021, November 8). Gratitude: A mental health game changer. https://adaa.org/learn-from-us/from-the-experts/blog-posts/consumer/gratitude-mental-health-game-changer

Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of Covid-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research, 22*(9), 21279. https://dx.doi.org/10.2196/21279

Stebleton, M. J., Soria, K. M., & Huesman, R. L. (2014). First-generation students' sense of belonging, mental health, and use of counseling services at public research universities. *Journal of College Counseling, 17,* 6-20. https://doi.org/10.1002/j.2161-1882.2014.00044.x

Stevens, J. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). Lawrence Erlbaum Associates.

Storrie, K., Ahern, K., & Tuckett, A. (2010). A systematic review: Students with mental health problems: A growing problem. *International Journal of Nursing Practice, 16*(1), 1-6. 10.1111/j.1440-172X.2009.01813.x

Sy, S. R., Fong, K., Carter, R., Boehme, J., & Alpert, A. (2011). Parent support and stress among first-generation and continuing-generation female students during the transition to college. *Journal of College Student Retention, 13*(3), 383-398. https://doi.org/10.2190/CS.13.3.g

Tan, Q., Zhang, L., Li, W., & Kong, F. (2021). Longitudinal measurement invariance of the flourishing scale in adolescents. *Current Psychology: A Journal for Diverse*

Perspectives on Diverse Psychological Issues, 40, 5672-5677. https://doi.org/10.1007/s12144-021-01754-z

Tate, D. F., Finkelstein, E. A., Khavjou, L., & Gustafson, A. (2009). Cost effectiveness of internet interventions: Review and recommendations. *Annals of Behavioral Medicine, 38*(40), 40-45. https://doi/org/10.1007/s12160-009-9131-6

Uchida, Y., & Kitayama, S. (2009). Happiness and unhappiness in east and west: Themes and variations. *Emotion, 9,* 441-456. https://doi.org/10.1037/a0015634

Uchida, Y., Norasakkunkit, V., & Kitayama, S. (2004). Cultural constructions of happiness: Theory and empirical evidence. *Journal of Happiness Studies, 5,* 223-239. https://doi.org/10.1007/s10902-004-8785-9

Umucu, E., Grenawalt, T. A., Reyes, A., Tansey, T., Brooks, J., Lee, B., Gleason, C., & Chan, F. (2019). Flourishing in student veterans with and without service-connected disability: Psychometric validation of the flourishing scale and exploration of its relationship with personality and disability. *Rehabilitation Counseling Bulletin, 63*(1), 3-12. https://doi.org/10.1177/0034355218808061

Upsher, R., Nobili, A., Hughes, G., & Byrom, N. (2022). A systematic review of interventions embedded in curriculum to improve university student wellbeing. *Educational Research Review, 37,* 100464. https://doi.org/10.1016/j.edurev.2022.100464

von Keyserlingk, L., Yamaguchi-Pedroza, K., Arum, R., & Eccles, J. S. (2022). Stress of university students before and after campus closure in response to Covid-19. *Journal of Community Psychology, 50,* 285-301. https://dx.doi.org/10.1002/jcop.22561

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*(4), 678-691. https://doi.org/10.1037/0022-3514.64.4.678

Waters, L. (2011). A review of school-based positive psychology interventions. *The Australian Educational and Developmental Psychologist, 28*(2), 75-90. https://doi.org/10.1375/aedp.28.2.75

Wellenzohn, S., Proyer, R. T., & Ruch, W. (2016). How do positive psychology interventions work? A short-term placebo-controlled humor-based study on the role of the time focus. *Personality and Individual Differences, 96,* 1-6. https://doi.org/10.1016/j.paid.2016.02.056

Wickramaratne, P. J., Yangchen, T., Lepow, L., Patra, B. G., Glicksburg, B., Talati, A., Adekkanattu, P., Ryu, E., Biernacka, J. M., Charney, A., Mann, J. J., Pathak, J., Olfson, M., & Weissman, M. M. (2022). Social connectedness as a determinant of mental health: A scoping review. *PLoS ONE 17*(10), 0275004. https://doi.org/10.1371/journal.pone.0275004

Wong, Y. J., Owen, J., Gabana, N. T., Brown, J. W., Mcinnis, S., Toth, P., & Gilman, L. (2016). Does gratitude writing improve the mental health of psychotherapy clients? Evidence from a randomized controlled trial. *Psychotherapy Research.* https://doi/org/10.1080/10503307.2016.1169332

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and wellbeing: A review and theoretical integration. *Clinical Psychology Review, 30*(7), 890-905. https://doi.org/10.1016/j.cpr2010.03.005

Wood, A. M., Joseph, S., & Maltby, J. (2008a). Gratitude uniquely predicts satisfaction with life: Incremental validity above the domains and facets of the five-factor model. *Personality and Individual Differences, 45*(1), 49-54. https://doi.org/10.1016/j.paid.2008.02.019

Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008b). The role of gratitude in the development of social support, stress, and depression: Two longitudinal studies. *Journal of Research in Personality, 42*(4), 854-871. https://doi.org/10.1016.j.jrp.2007.11.003

Wood, A. M., Maltby, J., Stewart, N., Linley, P. A., & Joseph, S. (2008c). A social-cognitive model of trait and state levels of gratitude. *Emotion, 8*(2), 281-290. https://doi.org/10.1037/1528-3542.8.2.281

Yurayat, P., & Seechaliao, T. (2021). Effectiveness of online positive psychology intervention on psychological wellbeing among undergraduate students. *Journal of Education and Learning, 10*(4), 143-155. https://doi.org/10.5539/jel.v10n4p143

Zalta, A. K., & Chambless, D. L. (2012). Understanding gender differences in anxiety: The mediating effects of instrumentality and mastery. *Psychology of Women Quarterly, 36*(4), 488-499. https://doi.org/ 10.1177/0361684312450004

Zhang, X-Q., Zhang, B-S., & Wang, M.-D. (2020). Application of a classroom-based positive psychology education course for Chinese medical students to increase their psychological wellbeing: A pilot study. *BMC Medical Education, 20*, 1-9. https://doi.org/10.1186/s12909-020-02232-2

Ziskin, M., Fishcher, M. A., Torres, V., Pellicciotti, B., & Player-Sanders, J. (2014). Working students' perceptions of pay for college: Understanding the connections

between financial aid and work. *The Review of Higher Education, 37*(4), 429-467. https://ecommons.udayton.edu/eda_fac_pub?utm_source=ecommons.udayton.edu%2Feda_fac_pub%2F1&utm_medium=PDF&utm_campaign=PDFCoverPages

Zullig, K. J., Koopman, T. M., Patton, J. M. & Ubbes, V. A. (2010). School climate: Historical review, instrument development, and school assessment. *Journal of Psychoeducational Assessment, 28*(2), 139-152. https://doi.org/10.1177/0734282909344205

Appendix: Instruments and Measures

Gratitude Activities

Students were provided information about gratitude, including the definition of gratitude, three main functions of gratitude – feelings of gratitude, prosocial behavior due to gratitude, and responses related to gratitude. The difference between trait and state gratitude will also be explained with examples. The gratitude activities were provided asynchronously through Canvas (Each Monday by Noon for five weeks), included activity instructions and 5-minute Panopto instruction video, and students were given one week to access each activity. Each activity was due at the end of each week (Each Sunday between weeks four and eight, by 11:59 pm). Students submitted their activity responses through Canvas.

Gratitude Presentation

Students were introduced gratitude via a 30-minute Panopto video. Students viewed this video during Week Four, prior to accessing the Count One's Blessings activity.

Week Four and Five Activity: Count One's Blessings

An assignment through Canvas asked students to list up to five things from the previous week they are grateful or thankful for. The prompt included: "There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and list up to five things in your life you are grateful or thankful for. How did those things make you feel?"

Week Six and Seven Activity: Gratitude Letter

Students were asked to think about a person, each week, of whom had been especially kind to them but had never been properly thanked. The prompt included: "There are individuals in our lives that have helped or supported us and offered help when we needed it. Think back to a time when someone was especially kind to you, but you had not had a chance to properly thank them. Identify the person you are grateful to. Then, write a letter to them expressing your gratitude. You do not have to send the letter, but you will be asked to submit the letter (with or without the recipient's name) for this assignment."

Week Eight Activity: Three Good Things

Students were asked to write down three good things that happened during the past week. The prompt included: "Think back over the past week and list three good things that happened to you. Then answer the following questions." Then for each good thing identified, the students answered the following: "Why did this good thing happen?", "What does this mean to you?", "How might these good things inspire you to do the same to others? Please describe".

Brief Symptom Inventory (BSI-17)

Instructions: How much were you distressed by the following over the past seven days?

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Faintness or dizziness	1	2	3	4	5
2. Feeling no interest in things	1	2	3	4	5
3. Nervousness or shakiness inside	1	2	3	4	5
4. Pains in heart or chest	1	2	3	4	4
5. Feeling lonely	1	2	3	4	5
6. Feeling tense or keyed up	1	2	3	4	5
7. Nausea or upset stomach	1	2	3	4	5
8. Feeling blue	1	2	3	4	5
9. Suddenly scared for no reason	1	2	3	4	5
10. Trouble getting your breath	1	2	3	4	5
11. Feelings of worthlessness	1	2	3	4	5
12. Spells of terror or panic	1	2	3	4	5
13. Numbness or tingling in parts of your body	1	2	3	4	5
14. Feeling hopeless about the future	1	2	3	4	5
15. Feeling so restless you couldn't still	1	2	3	4	5
16. Feeling weak in parts of your body	1	2	3	4	5
17. Feeling fearful	1	2	3	4	5

Perceived Stress Scale (PSS)

Instructions: For each question choose from the following alternatives: 0 – Never, 1 – Almost never, 2 – Sometimes, 3 – Fairly often, 4 – Very often

	Never	Almost never	Sometimes	Fairly often	Very often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	1	2	3	4	5
2. In the last month, how often have you felt that you were unable to control the important things in your life?	1	2	3	4	5
3. In the last month, how often have you felt nervous and stressed?	1	2	3	4	5
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	1	2	3	4	5
5. In the past month, how often have you felt that things were going your way?	1	2	3	4	5
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	1	2	3	4	5
7. In the last month, how often have	1	2	3	4	5

you been able to control irritations in your life?					
8. In the last month, how often have you felt that you were on top of things?	1	2	3	4	5
9. In the last month, how often have you been angered because of things that happened that were outside of your control?	1	2	3	4	5
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	1	2	3	4	5

Flourishing Scale (FS)

Instructions: Below are 8 statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by indicating that response for each statement.

	Strongly agree	**Agree**	**Slightly agree**	**Neither agree nor disagree**	**Slightly disagree**	**Disagree**	**Strongly disagree**
1. I lead a purposeful and meaningful life	1	2	3	4	5	6	7
2. My social relationships are supportive and rewarding	1	2	3	4	5	6	7
3. I am engaged and interested in my daily activities	1	2	3	4	5	6	7
4. I actively contribute to the happiness and well-being of others	1	2	3	4	5	6	7
5. I am competent and capable in the activities that are important to me	1	2	3	4	5	6	7
6. I am a good	1	2	3	4	5	6	7

person and I life a good life							
7. I am optimistic about my future	1	2	3	4	5	6	7

Gratitude Questionnaire (GQ-6)

Instructions: Using the scale below as a guide, circle the number besides each statement to indicate how you agree with it. There is no right or wrong answer.

	Strongly disagree	**Disagree**	**Slightly disagree**	**Neutral**	**Slightly agree**	**Agree**	**Strongly agree**
1. I have so much in life to be thankful for.	1	2	3	4	5	6	7
2. If I had to list everything that I felt grateful for, it would be a very long list.	1	2	3	4	5	6	7
3. When I look at the world, I don't see much to be grateful for.	1	2	3	4	5	6	7
4. I am grateful to a wide variety of people.	1	2	3	4	5	6	7
5. As I get older, I find myself more able to appreciate the people, events,	1	2	3	4	5	6	7

	and situations that have been part of my life history.						
6.	Long amounts of time can go by before I feel grateful to somethin g or someone.	1	2	3	4	5	6	7

Demographic Survey

Instructions: Please answer the following items.

1. How would you describe your gender?
    a. Male
    b. Female
    c. Non-binary
    d. Others, please describe: _____
    e. Prefer not to answer

2. How would you describe your race/ethnicity?
    a. American Indian or Alaska Native
    b. Asian/Asian American
    c. Black or African American
    d. Hispanic or Latino or Spanish Origin of any race
    e. Native Hawaiian or Other Pacific Islander
    f. White
    g. Two or more races
    h. Others, please describe: _____
    i. Prefer not to answer

3. Has either of your parents earned a four-year college/university Degree?
    a. Yes
    b. No
    c. Prefer not to answer

4. What is your academic class standing?
    a. First-year
    b. Sophomore
    c. Junior
    d. Senior
    e. Graduate or Professional
    f. Prefer not to answer

5. What is your age?
    a. _____ years
    b. Prefer not to answer

6. What is your current employment status?
    a. Not working
    b. Working part-time
    c. Working full-time
    d. Others, describe: _____
    e. Prefer not to answer

7. Have you ever sought mental health support from a licensed mental health counselor or psychologist?

a. Yes
b. No
c. Prefer not to answer

Exit Ticket

Instructions: Please answer each statement based on the level of helpfulness.

Counting One's Blessing Activity

	Not helpful at all	Somewhat helpful	Helpful	Very helpful
1. The Gratitude presentation helps me understand the concepts related to gratitude.	1	2	3	4
2. I found the counting one's blessing activity helpful.	1	2	3	4
3. Please briefly describe what you find helpful about this activity (open response).				

Gratitude Letter Activity

	Not helpful at all	Somewhat helpful	Helpful	Very helpful
1. I found the gratitude letter activity helpful.	1	2	3	4
2. Please briefly describe what you find helpful about this activity (open response).				

Three Good Things Activity

	Not helpful at all	Somewhat helpful	Helpful	Very helpful
1. I found the 3 good things activity helpful.	1	2	3	4

2. Please briefly describe what you find helpful about this activity (open response).	