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# Ethnicity, Perceptions of Stress, and Depressive Symptoms Among Female Undergraduate Students

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Abstract

Individuals have suffered from depression for decades. Although depression is under diagnosed, it is one of the most common disorders seen by psychiatrists. The purpose of this research study was to understand whether students' perceived stress level was a significant predictor of students' depressive symptoms. The study explored social cognitive theory to assist in understanding the relationship between depressive symptoms and perceived stress in female minority students. Although depressive symptoms and perceived stress in students have been explored exhaustively, these variables had not been explored specifically among minority students and then compared to nonminority students. Using the Center for Epidemiologic Studies Depression Scale and the Perceived Stress Scale, depressive symptoms and perceived stress in a sample of 109 minority and nonminority, female, undergraduate students were measured. A quantitative analysis was conducted to answer the research questions. For the first research question, data analysis confirmed that perceived stress significantly predicted depressive symptoms in minority, female, undergraduate students. For the second research question, data analysis did not support moderation. Lastly, for the third research question, data analysis confirmed that perceived stress for minority students was significantly different from the distribution of perceived stress for nonminority students. Understanding depressive symptoms from a social cognitive perspective can be initiate positive social change. The results of the study can be used to design targeted interventions (e.g., support groups, cognitive therapy) for mental health in different areas, including colleges, universities, mental health agencies, and hospitals.

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# Dedication

This dissertation is dedicated to my amazing support system. I am eternally grateful to my loving parents, Carlos and Ana Tenorio, whose words of wisdom and encouragement have always pushed me to strive for the best. I am grateful for my loving and understanding husband, Edgar Cobos, for supporting me during this incredible journey every single day. My sister, Ana Varay (who is graduating with me), and her husband, Lionel Varay, have always been incredibly supportive and encouraging. This will be my fourth time graduating with my sister and I am so excited to share this with her. This dissertation is dedicated to all of them because I would not have been able to complete this work without their ongoing support and love.

Acknowledgements

First and foremost, I need to thank God for all of my blessings, including my wonderful family. My parents decided to move to the United States when I was four years old. Their decision was incredibly difficult, but they knew it was necessary. They left all of their loved ones in El Salvador and brought my sister and I to the United States for a better future since El Salvador was at war. When I try to imagine how hard it was for them to start over in a new country with no support system and two young children, I am left in awe. My parents are truly the most courageous and brave people I know. Although acculturating was difficult, it made our small family of four extremely close. Faith in God was always present in our home growing up and I understood that with that faith, anything was possible. Enrolling in a doctoral program was a difficult decision for me and the process of completing it certainly came with its challenges. However, my own faith and remembering my parents' courage pushed me through to the finish line.

My husband (aka Cutie) and I have been together for nearly twenty-two years. I met him when I was completing my Bachelor's degree and working as a teacher's assistant at an elementary school. We instantly connected and from that point forward, we became each other's "ride or die." During this doctoral program, he has supported me in so many ways, especially in this last year of completing my dissertation. He really helped me get past the finish line. I'm blessed to have him.

Although the rest of my family is in El Salvador and Guatemala, they are always present in my life and show their support in many ways. My colleagues and close friends have kept me motivated throughout this process and I am extremely appreciative of everything they have done for me. Everyone's smallest gestures have been so meaningful

and will remain with me always. They have provided everything from honesty to comic relief when needed. Everyone needs someone to cheer them on and I have been blessed to have all of them in my life.

Lastly, but certainly not least, I am extremely grateful for my dissertation committee, Dr. Jay Dill and Dr. Jesus Tanguma. Dr. Dill, my content committee member, has been so supportive by congratulating me each time I moved forward in this process. I would like to acknowledge Dr. Tanguma, my chair, for always being supportive as well. During this process, life's events sometimes slowed me down. Dr. Tanguma was always understanding if I needed to take a break from writing. Dr. Tanguma is also a man of faith and the smallest statements like "let's thank God" when IRB approved my study was so meaningful. He has been a very important part of my support system, and I am eternally grateful to him.

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# Chapter 1: Introduction to the Study

The topic of this study was depressive symptoms in female, undergraduate, ethnic minority students. More specifically, the focus of the study was on whether there was a statistically significant relationship between depressive symptoms and perceived stress among female, undergraduate, ethnic minorities (i.e., Latina, Native American, African American, Asian, Pacific Islander). According to Mackenzie et al. (2011), 26% of female college students suffer from depression. Depression is defined as a combination of any of the following symptoms: difficulty concentrating, feelings of worthlessness and/or helplessness, feelings of hopelessness, insomnia, excessive sleeping, irritability, restlessness, loss of interest in activities or hobbies that were once pleasurable, overeating, undereating, persistent sadness, and/or suicidal thoughts (American Psychiatric Association, 2013). It appears that there is limited research specifically related to depression in minority undergraduate students. Although some research exists in regard to depression in college students in general (Mackenzie et al., 2011), there is not enough research to highlight the differences in ethnicity. When searching for literature on minority female students and depressive symptoms, only four articles were found. Additionally, when conducting a search for minority female students and perceived stress, no articles were found. The results of this study provide insight into why ethnic minority female students experience different depressive symptoms and can perhaps increase the probability of students seeking mental health services. Yanos, Lucksted, Drapalski, Roe, and Lysaker (2015) indicated the negative impact of stigma on individuals diagnosed with mental illness. The results of this study contribute to the study

of mental illness and can assist students in understanding they are not alone, decreasing the stigma surrounding mental disorders.

This chapter includes leading research on the experience of attending college as a minority student in order to assess the background of the problem. Arbona and Jimenez (2014) showed that student stress levels could increase by simply attending college. Then, the problem statement, research questions, and hypotheses are identified to clarify that the current study addressed depressive symptoms in female, undergraduate, ethnic minorities. According to Slavich and Irwin (2014), many individuals who suffer from depression are undiagnosed and never receive treatment for it. A review of social cognitive theory (SCT) is also included as the theoretical framework of the study. According to Bandura (1986), the focus of SCT is on individuals' knowledge acquisition being directly related to observing others' behaviors within different environments. The study's definitions, assumptions, scope, limitations, and significance are also included in discussing the nature of the study. Lastly, the importance of the study of depressive symptoms/mental health is summarized, as it was the focus of the study.

Mental health is an important part of how individuals function in their environments. Mental stability is crucial for students to interact with others in their environments. This study can help in identifying students' perceived stress and how it contributes to their depressive symptoms in order to understand how to treat them. Perceived stress may exacerbate or alleviate depressive symptoms. This information can be useful for colleges, universities, mental health agencies, and hospitals.

## Background of the Problem

Although going to college can be an exciting experience, it can also be stressful. According to Arbona and Jimenez (2014), an 18-item instrument (The College Stress Scale) was used to measure dimensions of general college stress. These dimensions included academic stress, social emotional stress, and financial stress. They found that student stress levels could increase by simply attending college (Arbona & Jimenez, 2014). Researchers have also found that there was high internal consistency and evidence of construct validity when using the three-dimensional scale pertaining to students' stress levels (Rodriguez, Myers, Morris, & Cardoza, 2000). Ronald and Koch (2011) estimated internal consistency by using Factors 1 (7-item measure that reflected concerns about control and stress) and 2 (3-item measure that reflected concerns about family, finances, and housing), which were .82 and .61 respectively. They found internal reliability with consistency of results across items, and there was construct validity with significant improvement in fit $\Delta X^2$ ($N = 185$) = 26.05, $p < .001$ (Ronald & Koch, 2011). A different study using the African American Women's Stress Scale by Watts-Jones (1990) was conducted to understand the nature of stress among African-American women to create a measure for this population. Watts-Jones used qualitative interviews to create a scale measuring stress in Black women. External events were measured, and the interactional definition of stress was used, in which any environmental demand that exceeds one's resources is considered stress (Watts-Jones, 1990). In a combined sample of over 108 women, Watts-Jones discovered that more than half of the stressors reported were chronic situations, such as inadequate resources, work-related stress, relationship

conflict/dissatisfaction, role functioning, racism, and personal health. The correlational analysis indicated correlations of .58 to .70 between depression scores and stress scores on the AWSS (Watts-Jones, 1990). In addition to general college stress, ethnic minority students encounter other stressors that nonminority students might not.

According to Arbona and Jimenez (2014), minority students encounter additional stressors to the day-to-day college stressors. Minority students undergo the stress of attending predominantly White colleges/universities. Negative experiences on campus that students perceive as linked to social, physical, or cultural attributes salient to the specific minority group can be labeled as minority stress. Researchers studying this particular topic have suggested that because ethnic minority students experience unique forms of stress, they are at greater risk for negative social and psychological adjustment (Arbona & Jimenez, 2014), which places these students at greater risk for depression. Although colleges/universities have gone to great lengths to diversify their students, ethnic minority students continue to experience stress related to being ethnic minorities and being female undergraduate students. Female undergraduate students face various stressors including not only the goal of graduation but also the inequality and oppression that exist in our society (Doucet, Grayman-Simpson, & Shapes, 2013). Doucet et al. (2013) found that female undergraduate students undergo the experience of diversity in the classroom and form deeper understandings of how inequality and oppression influence their lives. Therefore, learning about gender oppression and gender inequality adds an additional stressor for these minority, female, undergraduate students.

## Problem Statement

Individuals have suffered from depression for decades. However, Slavich and Irwin (2014) found that many individuals who suffer from depression are undiagnosed and never receive treatment. Although it is under diagnosed, depression is one of the most common disorders seen by psychiatrists today. Depression can be diagnosed as early as in childhood up until late adulthood. Many theories of depression exist, including contemporary theories. Most contemporary theorists have identified stress as a primary factor in increasing the risk for this disorder. Therefore, life events that are perceived as stressful are the best predictors of an impending onset of **depression** (Slavich & Irwin, 2014). Arbona and Jimenez (2014) found that attending college qualifies as a stressful life event.

Beginning college can be an overwhelming experience for students given that the academic demands increase significantly from high school to college. O'Hara, Armeli, Boynton and Tennen (2014) indicated that college students often experience an initial onset of depression during college years. They found that 18% of students had remitted depression, and 13% had recent depression (O'Hara et al., 2014). In addition to the stress that is generally experienced by students entering college, minority students endure additional stress. Researchers have indicated that minority students of low socioeconomic backgrounds perform more poorly when tested in evaluative contexts (Harackiewicz et al., 2014), which is how students are typically evaluated in college. Kreig (2013) also indicated that minority students have a greater workload than other students. In addition to the stress and difficulties experienced by minority students, the Bayer Corporation

(2012) indicated that these students also suffer from depression. Several studies have been conducted to determine the cause of students' depression, but there is a gap in the research as it pertains to minority students' (several ethnic backgrounds) perceived stress and whether or not it has a direct effect on depressive symptoms. Increased perceived stress and depressive symptoms are a problem because this can lead to more severe symptoms, including suicide ideation (Bayer Corporation, 2012). If colleges and universities have more information about how minority and nonminority students perceive stress and how this impacts depressive symptoms, support services can be designed to target this population (Bayer Corporation, 2012).

A review of the literature is presented in the next chapter, which includes scholarly (peer-reviewed) articles and original books. Depression impairs individuals' functioning, which is significant to the study of psychology. Understanding how depression impairs students' functioning and how perceived stress may positively predict depression (Arbona & Jimenez, 2014) contributes to the study of psychology, education, and medicine. Additionally, understanding depressive symptoms from a SCT perspective can predict the perception of mental health in different areas, including colleges, universities, mental health agencies, and hospitals.

## Purpose of the Study

The purpose of this research study was to understand whether students' perceived stress level was a statistically significant predictor of students' depressive symptoms, which can inform educational programs and students about the importance of self-care. In this study, I explored SCT, controlling for the level of education. Using assessments,

depressive symptoms and perceived stress in minority and nonminority, female, undergraduate students were measured. I used a quantitative analysis in order to answer the research questions. In the first research question, perceived stress served as the predictor variable in this study, and depressive symptoms served as the criterion variable. In the second research question, the predictor variable was perceived stress, the criterion variable was depressive symptoms, and the moderating variable was ethnicity (i.e., Latina, Native American, African American, Asian, Pacific Islander). Lastly, in the third research question, perceived stress was the continuous test variable, and ethnicity was the categorical grouping variable.

## Research Questions and Hypotheses

To guide the research design, the following research questions and hypotheses were drawn:

Research Question (RQ)1: What is the relationship between the perceived stress and depressive symptoms in minority, female, undergraduate students?

$H1_0$ : Perceived stress will not significantly predict depressive symptoms in minority, female, undergraduate students.

$H1_a$: Perceived stress will significantly predict depressive symptoms in minority, female, undergraduate students.

RQ2: Is there a moderating effect of ethnicity on the relationship between the predictor variable of perceived stress (X) and the criterion variable of depressive symptoms(Y)?

$H2_0$: Ethnicity has no moderating effect on the relationship between the predictor

variable of perceived stress and the criterion variable of depressive symptoms.

$H2_a$: Ethnicity has a moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms.

RQ3: To what extent do minority, female, undergraduate students perceive themselves as having higher stress than nonminority, female, undergraduate students?

$H3_0$: There is no statistically significant mean difference between the amounts of stress that minority, female, undergraduate students perceive themselves as having as compared to nonminority, female, undergraduate students.

$H3_a$: There is a statistically significant difference between the amount of stress that minority, female, undergraduate students perceive themselves as having as compared to nonminority, female, undergraduate students.

## Theoretical Framework of the Study

Depressive symptoms and perceived stress in minority, female, undergraduate students appear to be common and can negatively impact students' academic success. SCT focuses on knowledge acquisition as it relates to others' behaviors in different environments (Bandura, 1986). Using SCT as the theoretical framework for this research analysis provided an explanation for how students' perception of stress predicts the depressive symptoms they experience or trigger depressive cognitions or beliefs (Arévalo & Flores, 2016).

### Theoretical Foundation

The focus of SCT is on individuals' knowledge acquisition being directly related to observing others' behaviors within different environments (Bandura, 1986). According

to Bussey and Bandura (1999), the theory focuses on an individual's immediate environment such as his/her home, and it encompasses other environments such as the workplace, school, or relationships. Theorists have also focused on how these constructs relate to personality-emotionality variables and social cognitive variables (Lent et al., 2005). The idea that individuals are more likely to change their behavior when they are confident in their own skills, which is called self-efficacy, is drawn from SCT (O'Leary, 2001). The hypothesis that an individual's stress may be caused by experiences with the environment and the consequences of stress can be drawn from SCT. SCT identifies factors that are considered crucial in influencing behavior (Luszcynska & Schwarzer, 2005). These factors include perceived self-efficacy, outcome expectations, outcome value, and sociostructural factors (Luszcynska & Schwarzer, 2005). SCT discusses the importance of constructs when predicting behavior (Boldizar, Perry, & Perry, 1989). In addition to the three cognitive constructs (e.g., self-efficacy, outcome expectations, outcome values) that underlie behavior, negative life events also play a role in predicting behavior (Boldizar et al., 1989). For example, if individuals experience negative life events, they are likely to experience depressive symptoms.

The environment also contains sociostructural factors that assist individuals in their emotional development. Because depressive symptoms are often reactions to different life events, SCT may offer a viable framework for understanding the development and maintenance of depression (Oatley & Bolton, 1985). SCT is widely known and is based on a unified framework that integrates psychological and sociostructural determinants in an individual's life (Bandura, 1986). Because depressive

symptoms are reactions to different life events, SCT best describes this (Oatley & Bolton, 1985).

### Conceptual Framework

Leading researchers and thinkers in the fields of SCT and depression in ethnic minority students, undergraduate students, and first-generation students were reviewed to facilitate an understanding of the sample used in this study. The review includes classic and contemporary thinkers and researchers, coupled with a review of Bandura's initial contribution to SCT. The review includes scholarly (peer-reviewed) articles and original books to arrive at the thoughts and conclusions presented in this literature review.

## Nature of the Study

### Research Design

This study was based on a quantitative analysis of student responses to the Center for Epidemiologic Studies Depression Scale (CES-D) and the Perceived Stress Scale (PSS). Allowing students to complete the CES-D and the PSS on their own time was important given that these students may have already been experiencing stress or depressive symptoms. Students asked to participate in this study included minority and nonminority undergraduate students. A quantitative study was used to gather information that focused on summarizing characteristics, including the relationship between depressive symptoms and perceived stress. A quantitative approach surveyed many students and applied statistical techniques to recognize the overall patterns in the relationships between factors (see Leong & Austin, 2006).

A quantitative approach has been used in several depression studies, including

one conducted by Beals, Manson, Keane, and Dick (1991). In this study, Beals et al. looked at the factor structure of the CES-D on the basis of data from a sample of 605 Native American college students. Ford, Olotu, Thach, Roberts, and Davis (2014) conducted a quantitative study to identify factors contributing to perceived stress in students. They found that a financial obligation was one factor contributing to perceived stress (Ford et al., 2014).

The sample that was used for this study was a group of female, undergraduate, ethnic minority (i.e., Latina, Native American, African American, Asian, Pacific Islander) and nonminority students who were attending a predominantly female university. The ages ranged from 18 to 23 in order to include educational levels of freshman, sophomores, and juniors. Participants read and agreed to the informed consent before continuing on to the survey. Ethnicities included Latina, Native American, African American, Asian, Pacific Islander, and White. Students identified their ethnicity before filling out the surveys. An explanation of the population needed for the survey, including minority and nonminority students, was sent out via email, and students filled out the surveys. The predictor variable was perceived stress, the criterion variable was depressive symptoms, and the moderating variable was ethnicity.

A qualitative study was not appropriate because this method is used to gather information that focuses on describing a phenomenon in a deep comprehensive manner. This type of study is generally done by conducting interviews, asking open-ended questions, or running focus groups. Qualitative studies normally use a small number of participants because they require extensive resources and time. Because of the nature of

this type of research, findings cannot be generalized to the whole population (Leong & Austin, 2006).

An experiment was also not appropriate for this study because no variables were being manipulated. Also, when conducting an experiment, ethics must be considered (Leong & Austin, 2006). Given that experiments are often longitudinal, it would not be ethical to expect participants to be available for a number of years in order to conduct this study. I did not look at ethnicity as the cause of perceived stress and depression, rather the relationship between them.

**Methodology**

I used a depression and a perceived stress scale to answer the research questions. The depression measure used in other research studies on depression has been the CES-D. It asks questions related to depressive symptoms and behaviors that an individual has exhibited in the past week. It is a common screening test for individuals to determine their level of depressive symptoms. In this study, students self-administered the CES-D. The CES-D is a self-report, 20-item scale, which includes depressive feelings and behaviors the individual has been feeling in the past week (e.g., feeling hopeless; Torres, 2012). The responses on the CES-D include *rarely or none of the time* (less than 1 day), *some or a little of the time* (1-2 days), *occasionally or a moderate amount of the time* (3-4 days), and *all of the time* (5-7 days; Torres, 2012). Examples of questions include “I felt depressed” and “I had crying spells” (Torres, 2012, p. 691). In addition to completing the depression scale, students completed a perceived stress scale.

Other studies have used the PSS as an appropriate measure of perceived stress. In

this study, students completed the PSS. The PSS is made up of 14 questions, which participants respond in the form of a 5-point Likert scale with 0 representing *never* and 4 representing *very often* (Cohen & Williamson, 1988, p. 64). There are seven positive items, which are reverse coded in order to obtain scores (e.g., 0 = 4, 1 = 3, etc.; Cohen, Kamarck, & Mermelstein, 1983). The questions focus specifically on the past month and how stressful it has been. For example, the first question states, "In the last month, how often have you been upset because of something that happened unexpectedly?" (Cohen & Williamson, 1988, p. 65).

## Definitions

This study consisted of predictor (perceived stress), criterion (depressive symptoms), and moderating (ethnicity) variables.

*Age*: Students within the ages of 18 to 23.

*Depression*: A combination of any of the following symptoms: difficulty concentrating, feelings of worthlessness and/or helplessness, feelings of hopelessness, insomnia, excessive sleeping, irritability, restlessness, loss of interest in activities or hobbies that were once pleasurable, overeating, undereating, persistent sadness, and/or suicidal thoughts (American Psychiatric Association, 2013).

*Ethnicity*: The student's identification of her own ethnic background.

*Gender*: female.

*Minority students*: Latina, Native American, African American, Asian or Pacific Islander.

*Nonminority students*: White.

*Perceived stress level*: How students identify with the stressful event (Stoliker & Lafreniere, 2015).

*Student status*: Students enrolled in an undergraduate program including freshman, sophomore, junior, and senior status.

## Assumptions

In this study, I assumed that all college students experience stress to some degree. According to Ford et al. (2014), students enrolled in any college program that is time-consuming and demanding endure stress. Attending college was assumed to be time-consuming and demanding. It is important to identify these assumptions because this study could have been generalized for all college students. For example, for students who are accustomed to time-consuming and demanding activities (e.g., competing in high school sports), college may not be a particularly stressful event. In fact, college may not be perceived as time-consuming or demanding. Although a high percentage of college students experience stress, I assumed that all students experience stress. Therefore, the always-existing exceptions to the rule were not considered.

Another key assumption was that ethnic groups experience stress differently. According to Constantine, Okazaki, and Utsey (2004), there is great heterogeneity among students from the same regions as in the African continent. They examined various factors associated with acculturative stress and depressive symptoms in newly arrived African, Asian, and Latin American international undergraduate students (Constantine et al., 2004). Like findings from previous investigations, higher acculturative stress scores predicted greater depressive symptoms among these students (Constantine et al., 2004).

These findings were important for this study, but exceptions always exist and were considered.

## Limitations

The use of a cross-sectional correlation study was one limitation, as it did not alter or manipulate variables, and there was a single group of participants who was a sample of a larger population. This type of study was short term, eliminating the possibility of observing perceived stress and depressive symptoms over a long period of time for more appropriate results, as a longitudinal study typically provides. Because this was a correlational study, causality could not be demonstrated. Another limitation of this study was that students are all different and can each respond to stress differently. They may respond to stress differently given their own histories. Some of their histories might include trauma whereas others may not. This may affect the way in which they experience and perceive stress. The use of self- report surveys and a cross-sectional correlation study were limitations, as biases or misinterpretations of questionnaires may have taken place by the participants in this study. Recall bias (i.e., inaccurately recalling information [Althubaiti, 2016]) and social desirability bias (i.e., the tendency of participants to respond in what they believe is the most socially acceptable way [Althubaiti, 2016]) could have altered the results of the study. Lastly, by looking only at several ethnicities such as Latina, Native American, African American, Asian, or Pacific Islander, some of the culturally relevant factors that may contribute to stress and depressive symptoms may have been missed.

## Significance

Depression impairs individuals' physical health (Williams et al., 2014) as well as their mental health. Physical health and mental health are a significant part of daily functioning. O'Hara et al. (2014) found that college students often experience an initial onset of depression during college years. They found that 18% of students had remitted depression, and 13% had recent depression (O'Hara et al., 2014). College and university staff may use the present study in aiding to identify what factors may be contributing to college students' depressive symptoms. By identifying these factors, depressive symptoms may be further understood by college and university staff in order to treat them properly. The results of this study can inform colleges, universities, mental health agencies, and hospitals with useful information.

## Summary

The focus of this study was on depressive symptoms in female, undergraduate, ethnic minorities. The focus was on whether there is a positive relationship between depressive symptoms and perceived stress among female, undergraduate, ethnic minorities (i.e., Latina, Native American, African American, Asian, Pacific Islander). Depression is a mental health disorder defined by the American Psychiatric Association (2013). Mental health is an important part of how individuals function in their environments. Mental stability is crucial for positive social interactions. There was a gap in the literature in regards to depressive symptoms in ethnic minority, female students. There is extensive research about depressive symptoms in college students in general, however. The results of this research study offer insight to ethnic minority, female

students into why and/or how they experience different depressive symptoms. Researchers have indicated the negative impact of stigma on individuals diagnosed with mental illness (Lasalvia, 2015). This study contributes to the study of mental illness and perhaps normalizes this experience for students and decreases the stigma surrounding mental disorders.

In the next chapter, I focus on reviewing the existing literature in the areas of depression, ethnic minorities, female undergraduate students and perceived stress. SCT is discussed in depth, as it relates to this research analysis. Lastly, a summary of how SCT was used to conceptualize this research analysis is presented.

# Chapter 2: Literature Review

## Introduction

In this chapter, I review the leading research on undergraduate, ethnic minority, female students' depressive symptoms as it relates to Bandura's (1986) SCT. Depression is defined in order to provide an understanding of what these students may have been experiencing. Other variables such as ethnicity and gender are reviewed in order to identify perceived stress that was specific to this population. The chapter continues with a discussion of the different constructs of SCT. Finally, research relevant to how these constructs impact students' depressive symptoms is included in this chapter. A review of the leading researchers and thinkers in the fields of SCT and depressive symptoms in undergraduate, ethnic minority, female students was conducted to facilitate an understanding of the sample that was used in this study. This review, which included classic and contemporary thinkers and researchers, was coupled with a review of Bandura's initial contribution to SCT. This review mainly includes scholarly (peer-reviewed) and original books.

## Literature Search Strategy

A review of the leading researchers and thinkers in the fields of education, psychology, and medicine was conducted to garner the following understanding on depressive symptoms and perceived stress constructs of ethnic minority, female, undergraduate students. This review of the depressive symptoms and perceived stress constructs of ethnic minority, female, undergraduate students was coupled with classic and contemporary thinkers and researchers. The databases (eight primary sources) used to

search various topics (i.e., minority college students [three], undergraduate students [three], female college students [two], depressive symptoms [six], female minority students [three], stress, perceived stress [six]) included Academic Search Complete, Education Research Complete, PsycARTICLES, PsycBOOKS, PsycCRITIQUES, PsycEXTRA, PsycINFO, and PsycTESTS. I used mainly scholarly (peer-reviewed) journals, including *Journal of Diversity in Higher Education, Journal of Educational Psychology, Journal of Counseling Psychology, Psychological Review,* and *College Student Journal* and original works (books), including the Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition* and *Social Foundations of Thought and Action: A Social Cognitive Theory* to arrive at the conclusions presented in this literature review. A search for peer-reviewed articles within the last 8 years was conducted. However, the literature necessary for this particular study was not always available due to the lack of research. Therefore, some dated literature (25) was used for this search. Lastly, SCT dates back to the 80s, and original works (five) were used in order to give a full, in depth explanation of theory and how it pertains to this study.

## Theoretical Foundation

### SCT

SCT has been used in many research studies to assist in the understanding of human behavior. SCT suggests that an individual's learning is directly related to observing others' behaviors in different environments (Bandura, 1986). For example, an individual can observe others' behaviors in different settings (e.g., school, store, park) and learn those behaviors. The individual behaving in the same manner as others

evidences this observational modeling predictor. The theory focuses on an individual's immediate environment such as his/her home, and it encompasses other environments such as the workplace, school, and relationships (Bussey & Bandura, 1999). SCT also focuses on how additional contexts (e.g., work, school, relationships) relate to personality-emotionality variables and social cognitive variables (Lent et al., 2005). The idea that individuals are more likely to change their behavior when they are confident in their own skills, which is called self-efficacy, is drawn from SCT (O'Leary, 2001). The hypothesis that an individual's stress may be caused by experiences with the environment and the consequences of stress can be drawn from SCT. SCT identifies factors that are considered crucial in influencing behavior (Luszcynska & Schwarzer, 2005). These factors include perceived self-efficacy, outcome expectations, outcome value, and sociostructural factors (Luszcynska & Schwarzer, 2005). Each of these factors are subsequently defined and discussed next.

The basic concept of SCT indicates that self-efficacy is a factor that drives individuals to do what they need to do. From here, individuals develop their own outcome expectations. Outcome expectations are basically the degree of success an individual predicts based on a particular behavior. Self-efficacy also predicts individuals' goals that may be developed based on their outcome expectations. Additionally, self-efficacy predicts sociostructural factors including environmental and economic conditions over such individuals. Finally, self-efficacy, outcome expectations, individual goals, and sociostructural factors predict individuals' behavior.

SCT is used to conceptualize human behavior as shown in Figure 1. Bandura

(1986) emphasized the importance of experiential and observational learning in various contexts (e.g., home, friends, school). Experiential learning is defined as learning that occurs through experiencing something (Bandura, 1986). Observational learning is defined as learning that occurs via observing others (Bandura, 1986). The three cognitive constructs that Bandura (1986) defined as underling behavior include self-efficacy, outcome expectations, and outcome values. According to Luszcynska and Schwarzer (2005), sociostructural factors also underlie behavior. These cognitive constructs independently predict behavior and then account for differences in individuals' behavior (Boldizar et al., 1989). Therefore, self-efficacy, outcome expectations, and outcome values predict an individual's behavior and can contribute to the stressors in a minority, undergraduate student's life. Each of these sociostructural factors is explained below.

**Self-efficacy.** Self-efficacy drives individuals to do what they need to do. According to Bandura (1990), self-efficacy is an individual's perception of his or her ability to accomplish a task. For example, if individuals perceive they can graduate from college and can do so, they will most likely graduate from college. Self-efficacy is assumed to assist an individual in determining how well he/she will display his/her abilities (Sheu & Lent, 2007). Researchers have shown that self-efficacy is related to an individual's performance across a range of different behaviors (Pajares & Miller, 1994).

Different researchers have identified the importance of how individuals behave and have explored individuals' sense of self-efficacy. First generation college students tend to excel academically when they have a greater sense of self-efficacy (Majer, 2009). Self-efficacy has been shown to be positively associated with environmental support

(Estrada, Woodcock, Hernandez, & Schultz, 2011). Individuals' self-efficacy relies heavily on the feedback from others in their environment (Estrada et al., 2011). For example, if individuals receive positive feedback in regard to a report they wrote, they will develop more confidence or self-efficacy to continue to write good reports.

**Outcome expectations.** Individuals pursuing college most likely set outcome expectations. An outcome expectation is the degree to which an individual thinks something will happen based on a particular behavior (Boldizar et al., 1989). Outcome expectations have been shown to predict subsequent behavior (Irving & Hudley, 2005). For example, an individual may believe that he or she has a 90% chance of passing an exam when the material has been studied. Therefore, outcome expectations are the individual's beliefs and assumptions concerning the consequences of his/her behavior.

**Outcome value.** Individuals pursuing college will also set outcome values. Outcome value refers to the degree of importance individuals place on the outcome of their behavior (Boldizar et al., 1989). Individuals may place a varying degree of value on outcomes such as getting a good grade because of being exposed to a formal education (Irving & Hudley, 2005). For example, when it is important for individuals to pass an exam, they are likely to study harder because they are invested in ending up with a high grade. Outcome expectations and values can go hand in hand in that an individual will always have some value for his/her expectation, whether high or low. SCT discusses the importance of constructs when predicting behavior (Boldizar et al., 1989). In addition to the three cognitive constructs (e.g., self-efficacy, outcome expectations, outcome values) that underlie behavior, negative life events also play a role in predicting behavior

(Boldizar et al., 1989). For example, if individuals experience negative life events, they are likely to experience depressive symptoms.

**Negative life events.** Individuals experience negative life events at one point in life. Negative life events play a role in influencing depression (Oatley & Bolton, 1985). Negative events in an individual's life are defined as causing distress, and sometimes that distress can turn into depression (Oatley & Bolton, 1985). In this section, I review how negative life events are measured and how they can predict depressive symptoms. Life events that might cause distress include those that disrupt the individual's sense of self and alternatives that are not present for that individual to regain that sense of self (Oatley & Bolton, 1985). There is evidence that negative life events are a common predictor of clinical depression (Oatley & Bolton, 1985). For example, Goldman, Davidson, and Cardemil (2008) found that there was a relationship between gender, race, and living in a low-income area. Brown and Harris (1978) defined negative life events and a method used to investigate them. They found that a provoking agent coupled with the presence of one or more vulnerability factors normally preceded depression (Brown & Harris, 1978). Provoking agents are defined as negative life events that last longer than a week and directly affect the individual in some way (e.g., the person becomes sad and/or withdrawn). The events also have to be rated as severe (e.g., loss of a loved one). Vulnerability factors are defined as circumstances that are not extremely threatening on their own (e.g., lack of support; Brown & Harris, 1978).

Studies that are more recent have the individual or parent (if the individual is a minor) report their own negative life events by completing a questionnaire. Labelle,

Alloy, and Abramson (2011) found that negative life events were closely associated with onset and exacerbation of depressive disorders, which further negatively affect higher brain functions. SCT is well known and is based on a unified framework that integrates psychological and sociostructural determinants in an individual's life (Bandura, 1986). According to Kirmayer, Narasiah, Munoz, Rashid, Ryder, Guzder, Hassan, Rousseau, and Pottie (2011) some psychological factors among newly arrived immigrants may include education, employment, health, and lack of support. The environment contains sociostructural factors that assist individuals in their emotional development. Because depressive symptoms are often reactions to different life events, SCT may offer a viable framework for understanding the development and maintenance of depression (Oatley & Bolton, 1985).

**Sociostructural factors.** Individuals pursuing college will also encounter sociostructural factors. According to Bandura (1997), sociostructural factors provide restraint and resources for individuals' development and their everyday functioning. Sociostructural factors are believed to be embedded in individuals' external environment (Bandura, 1997). These sociostructural factors may include barriers or opportunities that exist in individuals' living conditions, health systems, political systems, economic systems, or environmental systems (Luszcynska & Schwarzer, 2005). For example, being a minority in the United States might be a barrier (sociostructural factor) that predicts individuals' learning.

# Literature Review

## Depression

Depression is something that many students experience in their college years. Depression was defined as a combination of any of the following symptoms: difficulty concentrating, feelings of worthlessness and/or helplessness, feelings of hopelessness, insomnia, excessive sleeping, irritability, restlessness, loss of interest in activities or hobbies that were once pleasurable, overeating, under eating, persistent sadness, and/or suicidal thoughts (American Psychiatric Association, 2013). There are different levels of depression and symptom severity, which are sometimes overlooked (Williams et al., 2014). Generally, clinicians are interested in the severity of symptoms in order to determine optimal treatment for depression (Williams et al., 2014). Jaremka et al. (2014), clustered pain, depression, and fatigue because they share common risk factors. Generally, psychosocial theories of depression focus on stressful life events, negative cognitions, and interpersonal relationships because individuals experiencing these are at greater risk of experiencing depression (Seeley, Stice, & Rohde, 2009). When individuals are faced with different tasks (e.g., doing homework, working, studying) that become overwhelming, they may become depressed (Guo & Law, 2011). Some of the social situations that college students experience include psychological separation from parents, academic adjustment, and development of love relationships (Guo & Law, 2011). Guo and Law (2011), found that college students tended to manage a variety of tasks including mental and physical health habits, developed life management competency and intellectual competency, found a career goal, developed mature intimate relationships and

interpersonal competency, and established identity, self-confidence, and self-concept. When managing so many tasks, college students tended to experience depression (Guo & Law, 2011).

**Ethnic Minorities**

Ethnic minority students encounter additional stressors while attending college. There is a significant difference in academic success between ethnic minority (i.e., Latina, Native American, African American, Asian, Pacific Islander) and ethnic majority students (i.e., White) (Meeuwisse, Born, & Severiens, 2014). Ethnic majority students are those who relate to groups who have the same customs (i.e., religion, origin) and are a part of a group that makes up more than half of the individuals living in the United States of America (Merriam-Webster, 2011). Ethnic minority students also relate to groups with same customs but they are a part of the group that is less than half of the individuals living in the United States of America (Merriam-Webster, 2011). Ethnic minority students tend to have more salient family roles than ethnic majority students do. This could result in ethnic minority students performing more poorly academically than ethnic majority students (Meeuwisse et al., 2014). Latinos are ethnic minorities who were born in or whose families were born in Central America, South America or Mexico (Merriam-Webster, 2011).

Minority students vary from nonminority students in that they may undergo different processes including acculturation (Buddington, 2002). Acculturation is the process of learning and participating in the new (dominant) culture's traditions, values, beliefs, assumptions, and practices (Buddington, 2002). According to Crockett et al.

(2007), acculturative stress is associated with higher levels of depressive symptoms. Although minority students encounter different educational obstacles, they still choose to attend college. Students from ethnically diverse, predominantly low- and middle-socioeconomic status backgrounds have been found to attend college for three different reasons including helping their families, proving their self-worth, and having received encouragement from someone outside their family (Phinney, Dennis & Osorio, 2006). Students who attend college to help their families are likely to have a greater responsibility (Phinney et al., 2006). This can create stress, which predicts students' depressive symptoms. Additionally, students who choose to attend college in order to prove their self-worth may also take on more pressure.

These students may feel a greater responsibility in doing well academically. According to Oatley and Bolton (1985), a stressful event such as not meeting their own expectations may put these students at greater risk of becoming depressed. Students who are encouraged to attend college by others outside of their family may face different obstacles. If their family does not support a college education and feels that working directly after high school is more important, the student may be under greater stress (Phinney et al., 2006). When students are under stress, they are more likely to undergo depression (Oatley & Bolton, 1985). Some minority students may also be first-generation college students. First generation college students are more likely to be from a low socioeconomic status family, ethnic minority, and speak a language other than English at home (Cho, Hudly, Lee, Barry & Kelly, 2008). These students tend to select their college by considering psychosocial characteristics including perceived safety, positive social

climate, and having friends present on campus (Cho et al., 2008).

**Latinas**. Researchers have found that Latino students, in particular, have additional responsibilities other than just attending college. According to Kanagui, Rico, Castellanos and Gloria (2009), Latino college students in particular encounter educational obstacles and interpersonal stressors. These obstacles and stressors include cultural incongruity, hostile university climates, and/or educational stereotypes (i.e., educational stereotypes that other students/faculty might have of Latino students) (Kanagui, Rico, Castellanos & Gloria, 2009). Therefore, these students may be more vulnerable and likely to have depressive symptoms (Kanagui, Rico, Castellanos & Gloria, 2009). According to Roberts, Roberts and Chen (1997) Mexican American children had higher depression rates with impairment. Although there was no significant interaction, using a multivariate (logistic regression) analysis, of ethnicity in relation to depression, Mexican American female children were found to be at higher risk for depression. In another study, Kung, Castaneda and Pei-Jiuang (2003), found that higher stress levels predicted higher depression level. Among various types of stress including social support, only family-related stress was significant in predicting depression (Kung, Castaneda & Pei-Jiuang, 2003).

When there is a negative impact on these psychosocial characteristics of the college chosen, students may become depressed. Fiebig, Braid, Ross, Tom, and Prinzo (2010) found that Hispanic (Latino) college students have lower levels of acculturation than non-Hispanic students do. Hispanic students may also perceive themselves as having more educational barriers that might impair their academic success. Fiebig et al.

(2010) suggested that intervention programs should be created for students in order for them to feel supported in their familial role and reminded about how their extended families play a role in their academic and vocational success. Intervention programs are necessary in order to prevent students from undergoing depression in college (Fiebig et al., 2010).

**Native Americans.** Beals, Manson, Keane and Dick's (1991) study used the CES-D in order to assess depression in undergraduate students including Native American students. They found that there was a high correlation between depressed affect and somatic complaints. Females were compared to males and it was found that females reported higher somatic complaints than males. It was also found that depression is among the most prevalent psychopathologies in Native American communities (Beals, Manson, Keane & Dick, 1991).

According to Dagley, Sandberg, Busby and Larson (2012), Native Americans have high degrees of psychological distress including depression. Much of this psychological dysfunction is due to the historical societal oppression experienced by this ethnic group. Native Americans also have a high risk of child adversities (i.e., communication problems, emotional dependency) that can lead to depression (Dagley, Sandberg, Busby & Larson, 2012).

**African Americans**. According to Constantine, Okazaki and Utsey (2004), there is great heterogeneity among students from the same regions as in the African continent. Their study examined various factors associated with acculturative stress and depressive symptoms in newly arrived African, Asian, and Latin American international

undergraduate students. Like findings from previous investigations, higher acculturative stress scores predicted greater depressive symptoms among these students. The CES-D was administered to students in this study, which indicated several dimensions or symptoms of depression. This study found that African international students reported lower social self-efficacy and higher levels of acculturative stress and depression than other international students (Constantine, Okazaki & Utsey, 2004). Another study examined the depression and its possible variation by gender among African American young adults. A paper-and-pencil survey was administered to African American college students from a Historically Black College or University (HBCU) (Wang, Browne, Storr & Wagner, 2005).

**Asian Americans**. According to Young, Fang and Zisook (2010), the prevalence of Major Depressive Disorder (MDD) in Asian Americans undergraduate students is mixed as compared to other ethnicities. For example, the prevalence of MDD in Asian Americans is significantly lower than the national average, and Asian American undergraduate students report less agitation on the Beck Depression Inventory. However, other studies that have predominantly sampled less assimilated populations and found that Asian Americans have a higher prevalence of MDD. Asian American undergraduates may experience a stronger sense of perfectionism than their peers, which has been correlated with depression in Asian students. Because Asian American undergraduate students have a stronger sense of perfectionism, it leads to additional stress, which leads to depression. Cultural norms including unrealistic parent expectations and conflict

between traditional and modern values also contributes to more acute depression (Young, Fang & Zisook, 2010).

In another study, Asian American college students reported higher levels of depression on the CES-D due to stress from seeking independence (intergenerational family conflict) from their families. Asian Americans also do not receive adequate treatment for depression because they seek treatment less frequently (Kalibatseva, Leong, Chen, Ham & Lannert, 2017). Three factors why Asian American may underutilize mental health services include family contributions to mental health stigma, community contributions to mental health stigma and a mismatch between cultural needs and the services that are available (Augsberger, Yeung, Dougher & Hahm, 2015).

**Pacific Islanders.** Archambeau et al.'s (2010) study assessed depression by using the CES-D. Participants were asked to rate the frequency of their depressive symptoms as experienced during the past week. Their results provided valuable information about mental health outcomes among a rural-based diverse sample including Pacific Islander undergraduate students. Findings included an overall high percentage of psychiatric symptoms, indicating a significant number of undergraduate students in rural Hawaii might be suffering from various types of mental health issues including depression (Archambeau et al., 2010).

Pacific Islanders are at risk for depression due to the acculturation process (Breckenridge, 2013). According to Chen et al. (2014), many Pacific Islanders suffer from depression although there is limited research on this group in particular. Like Asian Americans, Pacific Islanders also underutilize mental health services (Breckenridge,

2013). Mental health centers typically reach out to ethnic populations when they have employed a professional from that ethnic group (Breckenridge, 2013). Therefore, the underutilization of mental health services is in part due to the limited outreach in these communities.

**Female Undergraduate Students**

College can be a stressful experience for female undergraduate students (e.g., female students working toward their Associate's or Bachelor's degree) given the amount of stress that comes with the experience. One stressor is whether the college student will accomplish their goal of making it to graduation. On average, only four in ten full-time students who begin college in United States will graduate in four years (Carey, 2005). Different components drive graduation success including time spent studying, development of oral and writing skills, interacting with peers and faculty, and utilizing institutional resources (Blau & Snell, 2013). Mezirow's transformative learning theory emerged out of a descriptive study of the phenomenology of transformative learning among women returning to postsecondary education after extended absences (Mezirow, 1978). Doucet, Grayman-Simpson, and Shapses (2013) found that Mezirow's theory captured students' unique transformative learning processes. It was also found that undergraduate students undergo the experience of diversity in the classroom and learn deeper understandings of how inequality and oppression influence the lives of real people in real ways (Doucet, Grayman-Simpson, & Shapses, 2013).

Female undergraduate students appear to face various stressors including not only the goal of graduation, but also the inequality and oppression that exists in our society

(Doucet, Grayman-Simpson & Shapes, 2013). Palmer, Boniek, Turner and Lovell (2014) researched the connections that undergraduate students make via the use of technology. Undergraduate students described their connections with their families and peers as frequent and purposeful (Palmer et al., 2014). Although many undergraduate students discussed feeling stressed during their college experience, many of them did not choose to discuss these stressors with family and peers (Palmer et al., 2014). Instead, conversations were kept to a minimum of once or twice a week and only general things were discussed (Palmer et al., 2014). Students who felt closer to their parents discussed feelings of guilt about parents' paying for tuition and therefore, needing to listen to their lectures when given (Palmer et al., 2014). Students, who felt distance from their parents, reported that they did not feel like they were understood by their parents and felt that often times, conversations resulted in miscommunication (Palmer et al., 2014). Palmer et al. (2014) highlighted an additional stressor of parental pressure on doing well in college. Their results showed that connecting with their families via phone heightened the stress.

**Perceived Stress**

There is a body of literature that affirms that minority, undergraduate students tend to have a different intensity of perceived stress, and that this predicts their college experience. According to Pope (2002), minority college students may be confronted with different factors that are detrimental to their retention and success. These factors include lower levels of academic preparation in high school, lower socioeconomic status and greater alienation in these institutions, which are related to the students' perceived stress.

These factors contribute significantly to their high dropout rates and poor academic achievement. (Pope, 2002).

**Latinas.** Finding regarding Latino's psychological health includes depression related to acculturative stress (Dunn & O'Brien, 2009). According to Edwards, Adams, Waldo, Hadfield and Biegel (2014), Latino students also experience stress resulting from poverty, racism, classism, and prejudice. Other specific stressors faced by Latinos include family stress, perceived discrimination and peer stress. These stressful life events can lead to negative psychological symptoms including depressive symptoms. There is a significant relationship between social discrimination and depressive symptoms (Edwards et al., 2014).

**Native Americans.** Harman (2017) examined how culture affects self-perception and depression in Native American high school students. Data were collected from 132 public high school students in Northern Michigan. Students who identified and participated in their native culture had higher perceived discrimination levels and had higher depression rates. (Harman, 2017). Native Americans are also at risk for suicide due to stressors including lack of involvement with their father or living with one parent (Gilder et al., 2017).

**African Americans.** According to Pierce et al. (2016), African Americans' biological responses to acute social stress are affected by individual differences and externally imposed sources of justice. For example, if the individual believes that the world is unfair, they react physiologically to stress. Perceived stress and stress reactivity are related to perceived racism in African Americans (Pierce et al., 2017). Perceived

stress is related to depressive symptoms in African Americans including mood swings, irritability, crying, decreased concentration and difficulty sleeping (Campbell-Grossman et al., 2017).

**Asian Americans.** Wei, Ku and Liao (2011) examined minority stress in college students. Among other minorities, Asian Americans experienced minority stress and were more likely to have a negative perception of the university environment. Asian Americans students also reported a negative campus life including feelings of social alienation. Similar to the results of other studies, minority-related stress predicts depression in Asian American students (Wei et al.,, 2011).

**Pacific Islanders.** As discussed earlier, Pacific Islanders are underserved and underutilize mental health services (Breckenridge, 2013). One significant form of perceived stress for Pacific Islanders is acculturative stress. Acculturative stress is a risk factor for depression (i.e., suicide attempts) among Pacific Islanders (Guerrero, Goebert, Alicata & Bell, 2009).

The purpose of this research study is to understand whether perceived stress is a significant predictor on students' depressive symptoms. Arévalo and Flores (2016) found that there was a positive relationship between perceived workload and perceived school and/or work conflict. Essentially, students who perceive themselves as having greater amounts of work perceive themselves as having greater school/work difficulties including depression (Arévalo & Flores, 2016). The results of this research could inform educational programs and students about the importance of self-care.

The relationship between intensity of perceived stress and students' depression

will be explored from the perspective of SCT. According to Park, Beehr, Han, and Grebner (2012), perceived stress is not only associated with depression, but it is also associated with the individual's self-efficacy. They examined the relationship between the amount of workload and psychological strain. They also looked at the moderating effects of individuals' personalities on the relationship between their workload and psychological strain (i.e., depression). Job demands and job complexity were operationalized as quantitative workload. It was found that personality did predict psychological strain. Regardless of the amount of workload, if the individual had higher personality resources (i.e., high self-efficacy, high optimism), his/her mental state did not change. This chapter begins with a discussion of SCT, followed by a description of depression, and ending with a discussion about the findings related to depression in minority college students (Park et al., 2012).

## Summary and Conclusions

This chapter reviewed research on undergraduate, ethnic minority (i.e., Latina, Native American, African American, Asian, Pacific Islander), female students' depressive symptoms as it relates to Bandura's (1986) SCT. Depression was defined in order to provide an understanding of what these students may be experiencing. Other variables such as ethnicity and gender were reviewed in order to identify perceived stress that is specific to this population. The chapter continued with a discussion of the different constructs of SCT. Finally, a review of research relevant to how these constructs impact students' depression was included. A review of the leading researchers and thinkers in the fields of SCT and depressive symptoms in undergraduate, ethnic minority, female

students was conducted in order to facilitate an understanding of the sample that will be used in this study.

This review, which included classic and contemporary thinkers and researchers, was coupled with a review of Bandura's initial contribution to SCT. This review mainly included scholarly (peer- reviewed) and original books to arrive at the thoughts and conclusions presented in this literature review. Three cognitive constructs that Bandura (1986) defined as underlying behaviors included self-efficacy, outcome expectations, and outcome values. Self-efficacy, outcome expectations, and outcome values predict an individual's behavior and can contribute to the stressors in a minority, undergraduate student's life. Perceived stress may incorporate the impact of self-efficacy and support and therefore, these possible extraneous variables have not been included independently in the study.

Depression impairs individuals' functioning, which is significant to the study of psychology. Understanding how depression impairs students' functioning and how perceived stress may positively predict depressive symptoms (Arbona & Jimenez, 2014) can contribute to the study of psychology, education, and medicine. Additionally, understanding depressive symptoms from a SCT perspective can predict the perception of mental health in different areas including colleges, universities, mental health agencies, hospitals, etc.

# Chapter 3: Research Method

## Introduction

The purpose of this research study was to understand how perceived stress predicts undergraduate, female, ethnic minority students' depressive symptoms. This research can inform educational programs and students about the importance of self-care. Self-care is the practice of engaging in certain behaviors, such as establishing a balance between personal and professional demands and engaging in healthy lifestyle practices (e.g., breathing exercises, diet, exercise, sleep; Bamonti et al., 2014). Having the awareness of signs of distress and seeking support is critical to the practice of self-care (Bamonti et al., 2014). In this study, I explored SCT controlling for level of education. The predictor variable was perceived stress, the criterion variable was depressive symptoms, and the moderating variable was ethnicity. I begin this chapter by presenting the research design and rationale for this study. The methodology for this study follows, including the population, samples, procedures, and instruments used to conduct this research study. The study's validity is discussed and lastly, I end the chapter with a summary.

## Research Design and Rationale

This research study was conducted to understand how perceived stress predicts ethnic minority, female, undergraduate students' depressive symptoms. In the first research question, perceived stress served as the predictor variable in this study, and depressive symptoms served as the criterion variable. In the second research question, the predictor variable was perceived stress, the criterion variable was depressive symptoms,

and the moderating variable was ethnicity (i.e., Latina, Native American, African American, Asian, Pacific Islander). Lastly, in the third research question, perceived stress was the continuous test variable, and ethnicity was the categorical grouping variable. Following are the hypotheses, the statistical analysis that were used to test each hypothesis, assumptions that were tested for each statistical analysis, and the analyses that were used if the assumptions were not met:

RQ1: What is the relationship between the perceived stress and depressive symptoms in minority, female, undergraduate students?

$H1_0$: Perceived stress will not significantly predict depressive symptoms in minority, female, undergraduate students.

$H1_a$: Perceived stress will significantly predict depressive symptoms in minority, female, undergraduate students.

In RQ1, a correlation using Pearson's correlation and simple linear regression model was used. A correlation quantified the degree to which the predictor variable (perceived stress) and the criterion variable (depressive symptoms) were related. Assumptions when using Pearson's correlation included level of measurement, related pairs, absence of outliers, normality of variables, linearity, and homoscedasticity. A simple linear regression showed the effect of ethnicity on the relationship between perceived stress and depressive symptoms. Assumptions when using a linear regression included linear relationship, multivariate normality, no or little multicollinearity, no autocorrelation, and homoscedasticity. The assumptions for linearity and homoscedasticity were tested via scatter plots. Similarly, multicollinearity was tested

using a correlation matrix, tolerance, and variance inflation. Finally, autocorrelation was tested using the Durbin-Watson test. If any assumption was violated for a given variable, the given variable was transformed (e.g., square root transformation; see Leong & Austin, 2006).

RQ2: Is there a moderating effect of ethnicity on the relationship between the predictor variable of perceived stress (X) and the criterion variable of depressive symptoms(Y)?

$H2_0$: Ethnicity has no moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms.

$H2_a$: Ethnicity has a moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms.

In RQ2, a moderator analysis was used to test the moderation of ethnicity on the relationship between perceived stress (X) and depressive symptoms (Y). A moderation demonstrates the causal relationship between perceived stress and depressive symptoms as a function of ethnicity (Baron & Kenny, 1986). A hierarchical multiple regression was performed with perceived stress as the predictor variable, depressive symptoms as the criterion variable, and ethnicity as the moderator. The predictor and interaction variables were entered before conducting the estimation of moderation effects to control for multicollinearity (see Fairchild & MacKinnon, 2010).

RQ3: To what extent do minority, female, undergraduate students perceive themselves as having higher stress than nonminority, female, undergraduate students?

$H3_0$: There is no statistically significant mean difference between the amounts of

stress that minority, female, undergraduate students perceive themselves as having as compared to nonminority, female, undergraduate students.

$H3_a$: There is a statistically significant difference between the amount of stress that minority, female, undergraduate students perceive themselves as having as compared to nonminority, female, undergraduate students.

In RQ3 an independent sample *t* test was used to compare the mean score on the PSS between the continuous test variable (perceived stress) and the categorical grouping variable (minority and nonminority). Assumptions when using a *t* test included the test variable measured on a continuous scale, the grouping variable consisting of two categorical, independent groups, independence of observations, no significant outliers, and homogeneity of variances (AERD Statistics, 2017). In order to test for homogeneity of variance, the Levene's test was used. This violation can be corrected by using the Welch-Satterthwalte method, which adjusts to the degrees of freedom (Leong & Austin, 2006). The Shapiro-Wilks test along with Q-Q plots and histograms were used to test for normality of the test variable. If the test variable was not normally distributed, it was transformed in order to achieve normality, or the nonparametric Mann-Whitney U test was used to analyze the data.

A depression symptoms measure was used to answer the research questions. The CES-D was administered to students (see Torres, 2012). Questions on the CES-D included depressive feelings and behaviors the individual has been feeling in the past week (i.e., feeling hopeless). Also, students completed the PSS to identify their perceived level of stress (see Cohen et al., 1983). This study was based on quantitative analyses of

student responses to the CES-D and the PSS. In this study, I looked at the potential relationship between depressive symptoms and perceived stress in minority, female, undergraduate students. The moderating effect of ethnicity (minority/nonminority) on the relationship between perceived stress and depressive symptoms was also identified. I also identified to what extent minority, female, undergraduate students perceive themselves as experiencing more stress than nonminority female, undergraduate students. Lastly, the study assisted in determining to what extent minority, female, undergraduate students are more likely to suffer from depressive symptoms that nonminority, female, undergraduate students.

## Methodology

### Population

The population used for this study was the undergraduate student body of a predominantly female university. Data were collected from female ethnic minorities (i.e., Latina, Native American, African American, Asian, Pacific Islander) as well as nonminority females who are currently attending a predominantly female university. The ages ranged from 18 to 23 in order to include educational levels of freshman, sophomores, and juniors. Minority ethnicities included Latina, Native American, African American, Asian and Pacific Islander. The nonminority ethnicity included White. Students identified their ethnicity before filling out the surveys. This university has approximately 2,700 undergraduate students enrolled; 90% are female, and about 88% of these students are minorities. Given that not all students fell under the ages from 18 and 23 and not all students within these ages filled out the survey, the sample size was

estimated to be 1,272 students.

**Sampling and Sampling Procedures**

A convenience sample of students was drawn of students enrolled at a predominantly female university, including undergraduate students from two campuses. This is a primarily women's university, and it is an ideal university to conduct this type of research study in. This university also has a diverse sample of students attending, which is important for this study given the need for minority, undergraduate students. Students were invited to participate in this study via email in the fall semester, 2018. Students identified their ethnicity before filling out the surveys. An explanation of the population needed for the survey was sent out via email and students who identified as minorities filled out the surveys. Students who do not identify as minorities also filled out the surveys in order to compare whether there were differences between minority and nonminority students.

The PSS and CES-D were the surveys that students at a predominantly female university completed. G*Power software was be used to calculate the level of precision in this study (see Erdfelder, Faul, & Buchner, 2005). This is a statistical power analysis program designed to analyze different types of power and compute the minimum required sample size. It also covers many different statistical tests as well as some exact tests. A desired sample size of 55 was determined by conducting power analysis for a linear regression in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size of ($f^2 = 0.15$; Erdfelder et al., 2005). Additionally, a desired sample size of 52 participants, or 26 participants in each group,

was determined using G*Power for an independent sample *t* test with two tails. A large effect size (Cohen's *d* = .80), power of .80, and a significance level of .05 were selected (see Erdfelder et al., 2005).

**Procedures for Recruitment, Participation, and Data Collection**

As stated earlier, a convenience sample was drawn from students enrolled at a predominantly female university. A limitation to using this type of sample includes selection bias or response bias. All undergraduate students enrolled at this university received an email requesting their participation in this study. Demographic data that were collected from students included gender, ethnicity, and age. Participants were provided informed consent in writing at the beginning of the email before the instructions portion. Once students completed the online surveys, they were provided with information about campus support services in the event that they might need debriefing and/or support. To address the limitation of this convenience sample, faculty were asked to award extra credit to students for participating to ensure a 70% response rate.

**Instrumentation and Operationalization of Constructs**

A depression and a perceived stress scale were used to answer the research questions. The CES-D and PSS were self-administered by students (see Torres, 2012).

**Depression.** The CES-D has been used in several research studies to measure depression. The CES-D is a self-report, 20-item scale, which includes depressive feelings, and behaviors the individual has been feeling in the past week (i.e., feeling hopeless) (Torres, 2012). The responses on the CES-D include rarely or none of the time (less than 1 day), some or a little of the time (1-2 days), occasionally or a moderate

amount of the time (3-4 days), and all of the time (5-7 days) (Torres, 2012). Examples of questions include “I felt depressed” and “I had crying spells” (Torres, 2012, p. 691). The CES-D includes questions related to depressive symptoms and behaviors that an individual has exhibited in the past week. It is a common screening test for individuals to determine their level of depression. Because the CES-D is in the public domain and is free to utilize in research, permission does not need to be obtained (Fisher, 2009). The CES-D is the latest version of the Center for Epidemiologic Studies Depression Scale and is a 20-item questionnaire that was developed to determine depression epidemiology. All 20 items are related to depression symptoms.

The CES-D has been used in a variety of studies to assess depression. Jacob Cohen (1960) introduced the Cohen’s kappa to account for the possibility that raters need to guess on some variables due to uncertainty. The kappa is one of the most commonly used statistics in testing interrater reliability and it can range from -1 to +1 (McHugh, 2012). In Yang, Jia and Qin’s (2015) research study, the findings indicated that the CES-D has satisfactory reliability in assessing depression in a number of studies, with a high Cronbach’s alpha value such as in Dutch people (0.93) and in English and Spanish people (0.91 and 0.92). This study also found that the CES-D has good criterion validity (Yang, Jia & Qin, 2015).

**Perceived stress.** Students completed the Perceived Stress Scale (PSS). According to Cohen and Williamson (1988), the PSS is made up of 14 questions, which participants respond in the form of a 5-pointLikert scale with 0 representing “never” (p. 64) and 4 representing “very often” (p. 65). There are seven positive items, which are

reverse coded in order to obtain scores (e.g., 0=4, 1=3, etc.) (Cohen, Kamarck, & Mermelstein, 1983). The questions focus specifically on the past month and how stressful it has been. For example, Cohen and Williamson's (1988) first question states "In the last month, how often have you been upset because of something that happened unexpectedly?" (p. 65). Other studies have used the PSS as an appropriate measure of perceived stress and it is the most widely used psychological instrument for this. It measures the degree to which each individual perceives situations as stressful. Although the PSS is being used for academic and educational purposes permission does not need to be obtained (MacArthur SES & Health Network), this author reached out to the author, Sheldon Cohen, and obtained permission. The PSS is a 14-item questionnaire focuses on thoughts and feelings experienced during the last month. Respondents are asked how often they think and/or feel a certain way in each question.

According to a study conducted in Brazil (Reis, Hino & Rodriguez-Añez, 2010), reliability analysis showed similar alpha coefficients (0.83 and 0.77) to the ones found in Cohen and Williamson's (1988) original study using the PSS. Perceived stress test-retest reliability was good (0.83 and 0.68) as recommended in similar studies reporting Pearson-product correlation. The results of this study also provided some evidence of construct validity that was also supported by the significant and negative correlation ($p<$ 0.005) ranging from -0.22 to -0.35 with perceived stress measures. (Reis, Hino & Rodriguez-Añez, 2010).

**Threats to Validity**

According to Pallant (2010), threats to reliability and validity have been

considered for this research study. Reliability of scales utilized in research indicates how free the scales are from random error. This assists researchers in determining whether or not the scales being used are actually measuring the right attribute. Internal consistency reliability is the most commonly used method of reliability and is described using Cronbach's alpha. Cronbach's alpha should be above 0.70, ideally or above 0.90 for higher stakes questionnaires. Validity of scales utilized in research indicates the degree to which it measures what is actually supposed to. There are two forms of validity including internal and external validity. Internal validity refers to whether the experiment avoids more than one independent variables acting at the same time. External validity refers to whether or not the results of the experiment can be generalized to other situations and to other people (Pallant, 2010).

In order to analyze that this study has both reliability and validity, Cronbach's alpha was calculated. Cronbach's alpha is expressed as a number between 0 and 1 and was developed by Lee Cronbach in 1951in order to provide a measure of internal consistency of a test or scale. The benchmark that will be used for Cronbach's alpha will be a minimum of 0.70 for each scale (Tavakol & Dennick, 2011). A Cronbach's alpha below 0.70 will indicate low internal consistency, which will indicate lower reliability in this study. A depression measure will be used to answer the research questions. The Center for Epidemiologic Studies Depression Scale (CES-D) was administered to students (Torres, 2012). Also, students completed the Perceived Stress Scale (PSS) in order to identify their perceived level of stress (Cohen, Kamarck, & Mermelstein, 1983). In order to test the psychometric properties of these scales, the reliability and validity of

the responses for each individual scale was determined.

**Ethical Procedures**

Because human participants were used in this study, the ethical implications the study may have on participants needed to be considered. IRB approval (09-24-18-0131602) was obtained prior to conducting this study. Participants were provided informed consent in writing at the beginning of the email before the instructions portion. The informed consent included procedures for participation, confidentiality, the voluntary nature of the study, the risks and benefits of their participation in the study, and my contact information in the event that they have questions about the study.

Confidentiality was held for all records used in this study. Participants were notified that they could withdraw from the study at any time and that there would be no negative academic consequences as a result. No compensation was offered to any students in this study. There were no physical or academic risks as a result of participating in this study. Given the topic of the study (depressive symptoms), there was a possibility of students becoming emotionally upset. Once students completed the online surveys, they were provided with information about campus support services if they needed debriefing and/or support.

The surveys used in this study were saved and coded. If any participants decided to withdraw from the study after submitting their data, those surveys would have been coded separately. All data were anonymous protecting students' identities. The data for this study was stored in a locked computer under a password protection.

## Summary

This chapter reviewed the purpose of this research study, which is to understand how perceived stress predicts undergraduate, female, ethnic minority students' depressive symptoms. This chapter included the research design, rationale, methodology and validity for this study follows. The next chapter will review the outcome of this research study. The hypotheses stated earlier were tested prior to completing the next chapter. Chapter 4 will then review data collection methods that were used once the study was complete. The results of the study will also be discussed in detail.

# Chapter 4: Results

## Introduction

The purpose of this research study was to understand how perceived stress predicts undergraduate, female, ethnic minority students' depressive symptoms. In RQ1, the relationship between perceived stress and depressive symptoms in minority, female, undergraduate students was explored. I hypothesized that perceived stress would significantly predict depressive symptoms in minority, female, undergraduate students. RQ2 looked at the moderating effect of ethnicity on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms. I hypothesized that ethnicity would have a moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms. Lastly, RQ3 addressed the extent to which minority, female, undergraduate students perceive themselves as having higher stress than nonminority, female, undergraduate students. The hypothesis was that there would be a statistically significant difference between the amounts of stress that minority, female, undergraduate students perceive themselves as having as compared to nonminority, female, undergraduate students.

In this chapter, I review the data collected and the results of the analyses conducted. I discuss whether the hypotheses were supported or not supported. I also discuss the assumptions for normality that were conducted and whether the tests stated above met those assumptions for normality. Lastly, I summarize the results.

## Data Collection

As stated in Chapter 3, a convenience sample was drawn from students enrolled at a predominantly female university. Data were collected from female ethnic minorities (i.e., Latina, Native American, African American, Asian, Pacific Islander) as well as nonminority females, ages 18 to 23. The nonminority ethnicity included Whites only. All undergraduate students enrolled at this university received an email requesting their participation in this study. Demographic data that were collected included gender, ethnicity, and age. Participants were provided with informed consent in writing. Students were also provided with information about campus support services in the event that they might need debriefing and/or support. A depression and a perceived stress scale were used to answer the research questions. The CES-D and PSS were self-administered by students.

Students were emailed on October 10, 2018, with the intent to allow students up to 8 weeks to complete the survey before the semester ended since they would receive 5 points extra credit for completing it. By November 18, 2018, 111 completed responses were received. Although according to G*Power for an independent sample *t* test with two tails, a minimum sample size of 52 participants or 26 participants in each group (minority and nonminority) were required, according to the central limit theorem, 30 was the recommended minimum. A G*Power analysis for a multiple linear regression with three predictors (i.e., Step 3 of the hierarchical linear regression) had a requirement of 36, while the correlation had a requirement of 29. These outcomes indicated that both analyses would require less participants, and thus the *t* test was used to define a minimum

sample size requirement for the study. Therefore, data were collected until a minimum of 30 participants in each group had completed the survey.

## Results

### Descriptive Statistics

A Cronbach alpha coefficient was calculated for the PSS and the CES-D, which consists of overall scores only and have no subscales available for testing. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2016) where alpha values > .9 indicate excellent items grouping (i.e., reliability), > .8 indicate good reliability, > .7 is acceptable, > .6 is questionable, > .5 is poor, and ≤ .5 is an unacceptable level of reliability. The items for the PSS had a Cronbach's alpha coefficient of 0.92, indicating excellent reliability. The items for the CES-D had a Cronbach's alpha coefficient of 0. 94, indicating excellent reliability as well.

### Frequencies and Percentages

The most frequently observed category of gender was female ($n$ = 109, 98%). The most frequently observed category of ethnicity was Latino ($n$ = 61, 55%). The most frequently observed category of minority was yes ($n$ = 80, 72%). Frequencies and percentages are presented in Table 1.

Table 1

*Frequency Table for Nominal Variables*

| Variable | *n* | % |
|---|---|---|
| Gender | | |
| Female | 109 | 98.20 |
| Missing | 0 | 0.00 |
| Ethnicity | | |
| Latino | 61 | 54.95 |
| Asian | 9 | 8.11 |
| African American | 10 | 9.01 |
| White | 31 | 27.93 |
| Missing | 0 | 0.00 |
| Minority | | |
| Yes | 80 | 72.07 |
| No | 31 | 27.93 |
| Missing | 0 | 0.00 |

*Note.* Due to rounding errors, percentages may not equal 100%.

**Summary Statistics**

The observations for age had an average of 20.63 ($SD$ = 1.66, $SE_M$ = 0.16, Min = 18.00, Max = 25.00). The observations for stress had an average of 28.34 ($SD$ = 9.78, $SE_M$ = 0.93, Min = 4.00, Max = 50.00). The observations for depression had an average of 21.02 ($SD$ = 13.13, $SE_M$ = 1.25, Min = 0.00, Max = 52.00). Skewness and kurtosis were also calculated and are shown in Table 2. When the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution tends to produce outliers (Westfall & Henning, 2013).

Table 2

*Summary Statistics Table for Interval and Ratio Variables*

| Variable | *M* | *SD* | *n* | $SE_M$ | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| Age | 20.63 | 1.66 | 109 | 0.16 | 0.34 | -0.42 |
| Perceived stress | 28.34 | 9.78 | 109 | 0.93 | -0.38 | 0.16 |
| Depression | 21.02 | 13.13 | 109 | 1.25 | 0.22 | -0.83 |

**RQ1**

A Pearson correlation analysis was conducted between perceived stress and depression. Cohen's standard is typically used to evaluate the strength of the relationship using *r* values; however, in order to understand the shared variance between each pair of variables in the Pearson correlations, $r^2$ values were calculated. These do not have set cutoffs for small, medium, and large effects but explain the proportion of shared variance and can range from 0 to 1 (Cohen, 1988). A Pearson correlation requires that the relationship between each pair of variables is linear (Conover & Iman, 1981). This assumption is violated if there is curvature among the points on the scatterplot between any pair of variables. After inspecting the scatterplot, the assumptions appeared to be met. Figure 2 presents the scatterplot of the correlation.

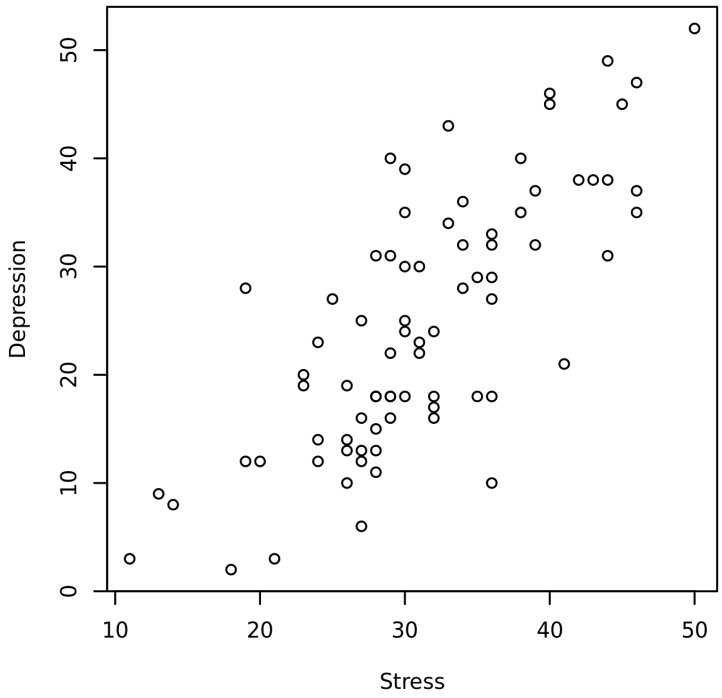


*Figure 1*. Scatterplot between perceived stress and depression.

A significant positive correlation was observed between perceived stress and depression ($r_p = 0.76$, $p < .001$). The correlation was significant, and the $r^2$ between perceived stress and depression was .58, indicating a relationship existed between perceived stress and depression where 58% of the variance was shared between these variables. This correlation indicates that as perceived stress increases, depression tends to increase, which is consistent with the first hypothesis. Table 3 presents the results of the correlation.

Table 3

*Pearson Correlation Matrix Between Perceived Stress and Depression*

| Variable | Perceived stress | Depression |
|---|---|---|
| Perceived stress | 1.00 | .76 |
| Depression | 0.76 | 1.00 |

A linear regression analysis was conducted to assess whether perceived stress significantly predicted depression. The Enter variable selection method was chosen for the linear regression model, which includes all of the selected predictors, though this only included perceived stress. The assumptions of normality of residuals, homoscedasticity of residuals, absence of multicollinearity, and the lack of outliers were assessed. Normality was evaluated using a Q-Q scatterplot (see Bates, Mächler, Bolker, & Walker, 2014; DeCarlo, 1997; Field, 2013), shown in Figure 3. The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution that follows a bell curve). After examining the Q-Q scatterplot in Figure 3, it appears that normality was met. Because there was only one predictor variable, multicollinearity does not apply, and variance inflation factors were not calculated.

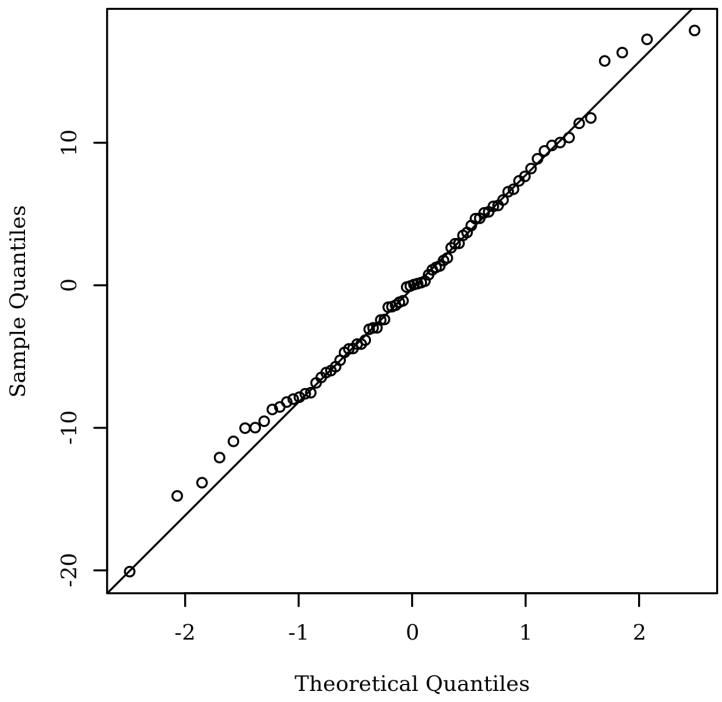


*Figure 2.* Q-Q scatterplot testing for normality.

Homoscedasticity was evaluated by plotting the residuals against the predicted values (see Bates et al., 2014; Field, 2013; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. The assumption of homoscedasticity appeared to be met after reviewing the scatterplot. Figure 4 presents a scatterplot of predicted values and model residuals.

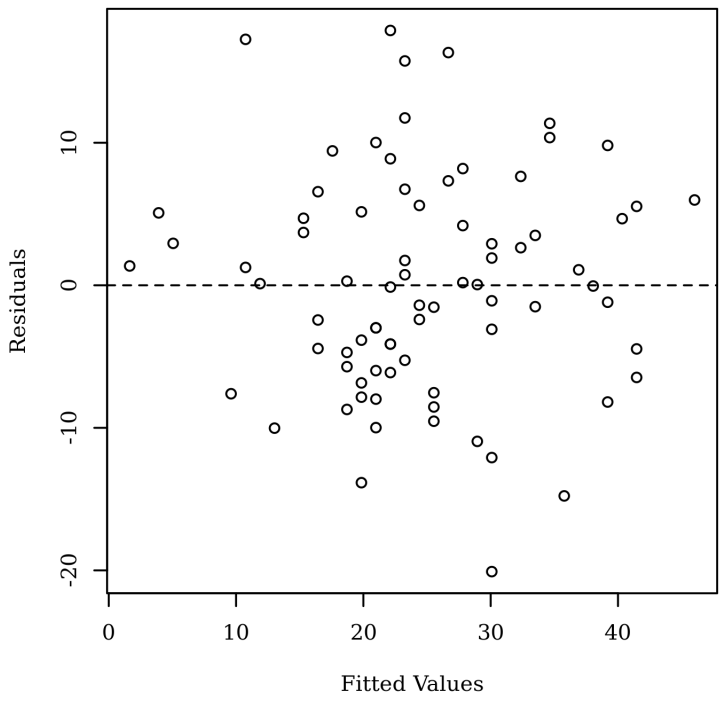


*Figure 3.* Residuals scatterplot testing for homoscedasticity.

The results of the linear regression model were significant, $F(1,76) = 105.92$, $p < .001$, $R^2 = 0.58$, indicating that approximately 58% of the variance in depression is explainable by perceived stress. Perceived stress significantly predicted depression, $B = 1.14$, $t(76) = 10.29$, $p < .001$. This indicates that on average, a one-unit increase of perceived stress will increase the value of depression by 1.14 units. Based on the $p$ value associated with this predictor, the null hypothesis can be rejected. Table 4 summarizes the results of the regression model.

Table 4

*Results for Simple Linear Regression With Perceived Stress Predicting Depression*

| Variable | *B* | *SE* | 95% CI | β | *t* | *p* |
|---|---|---|---|---|---|---|
| (Intercept) | -10.87 | 3.57 | [-17.98, -3.76] | 0.00 | -3.05 | .003 |
| Perceived stress | 1.14 | 0.11 | [0.92, 1.36] | 0.76 | 10.29 | < .001 |

*Note.* Results: $F(1,76) = 105.92$, $p < .001$, $R^2 = 0.58$

Unstandardized Regression Equation: Depression = -10.87 + 1.14*Perceived Stress

**RQ2**

A moderation analysis was conducted to assess if minority moderated the relationship between perceived stress and depression. Mean centering was used for perceived stress. In the first step, a simple effects model was created using linear regression with depression as the outcome variable and perceived stress as the predictor variable. In the second step, adding minority to the predictor created a non-interaction model in the linear model in step 1 (simple effects model). In the third step, an interaction model was created by adding the interaction between perceived stress and minority to the predictors in the linear model in step 2 (non-interaction model). Assumptions for linear regression analysis were conducted for the step 3 model (interaction model).

The assumptions of normality of residuals, homoscedasticity of residuals, absence of multicollinearity, and the lack of outliers were assessed. Normality was evaluated using a Q-Q scatterplot (Bates, Mächler, Bolker, & Walker, 2014; DeCarlo, 1997; Field, 2013). The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution which follows a bell curve). In the Q-Q scatterplot, the solid line represents the theoretical quantiles of a normal distribution.

Normality can be assumed if the points form a relatively straight line. After examining the Q-Q scatterplot in Figure 5, it appears that normality was met.

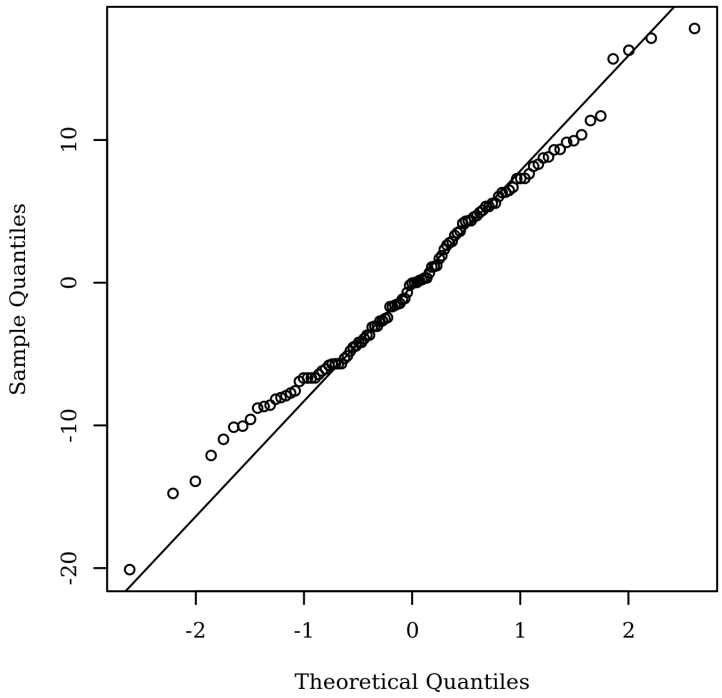


*Figure 4.* Q-Q scatterplot testing for normality.

Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2013; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. After examining the scatterplot, the assumption of homoscedasticity appears to be met. Figure 6 presents a scatterplot of predicted values and model residuals. All VIF values were below 10, indicating that the assumption for multicollinearity was met (Fairchild & MacKinnon, 2010).

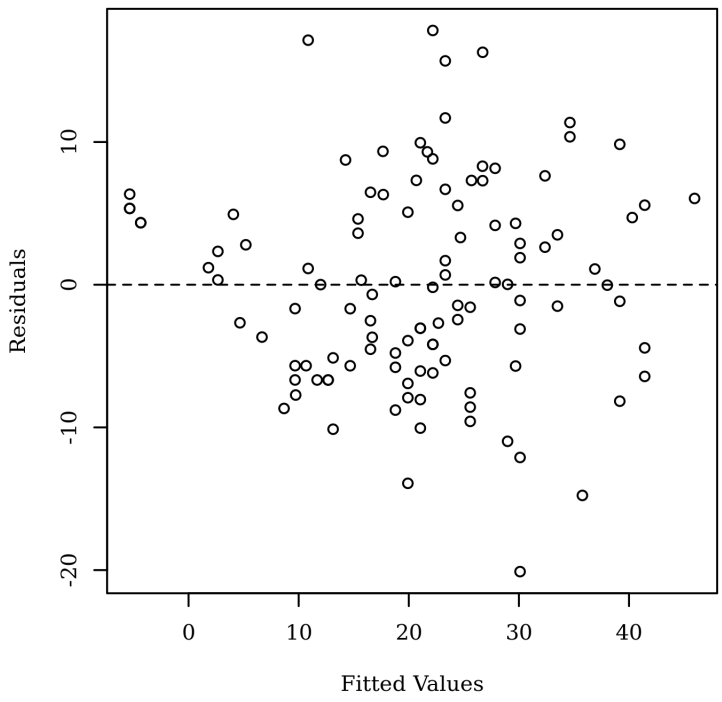


*Figure 5*. Residuals scatterplot testing homoscedasticity.

In order for moderation to be supported, two conditions must be met (Netemeyer et al., 2001). First, the causal predictor variable, perceived stress, must significantly predict depression in the simple effects model (step 1). Secondly, the interaction model (step 3) must explain significantly more variance of depression than the non-interaction model (step 2). If either of these conditions fail, moderation is not supported. Perceived stress significantly predicted depression, $B = 1.12$, $t(109) = 15.86$, $p < .001$. Therefore, the first condition was met, and the second condition was checked. A partial $F$-test was conducted to determine if the interaction model explained more variance in depression than the non-interaction model. The partial $F$-test, $F(1,107) = 0.65$, $p = .421$, indicated that the interaction model did not explain significantly more variance than the non-

interaction model. Therefore, the second condition was not met, and moderation was not supported. The null hypothesis could not be rejected. The results of the simple, non-interaction, and interaction models are presented in Table 5. Table 6 presents a comparison of the non-interaction and interaction models. Figure 7 shows the regression lines for depression predicted by perceived stress for each category of minority.

Table 5

*Moderation Analysis Table With Depression Predicted by Perceived Stress Moderated by Minority*

| Predictor | *B* | *SE* | β | *t* | *p* |
|---|---|---|---|---|---|
| Step 1: Simple effects model | | | | | |
| (Intercept) | -10.78 | 2.12 | | -5.09 | < .001 |
| Perceived stress | 1.12 | 0.07 | 0.84 | 15.86 | < .001 |
| | | | | | |
| Step 2: Noninteraction model | | | | | |
| (Intercept) | -9.07 | 2.57 | | -3.52 | < .001 |
| Perceived stress | 1.08 | 0.08 | 0.81 | 13.73 | < .001 |
| Minority | -1.99 | 1.71 | -0.07 | -1.17 | .246 |
| | | | | | |
| Step 3: Interaction model | | | | | |
| (Intercept) | 21.44 | 0.85 | | 25.08 | < .001 |
| Perceived stress | 1.13 | 0.10 | 0.84 | 11.22 | < .001 |
| Minority | -2.41 | 1.79 | -0.08 | -1.35 | .180 |
| Perceived stress X minority | -0.13 | 0.16 | -0.06 | -0.81 | .421 |

Table 6

*Linear Model Comparison Table Between the Noninteraction and Interaction Model*

| Model | $R^2$ | *F* | *df* | *p* |
|---|---|---|---|---|
| Noninteraction | 0.70 | | | |
| Interaction | 0.70 | 0.65 | 1 | .421 |

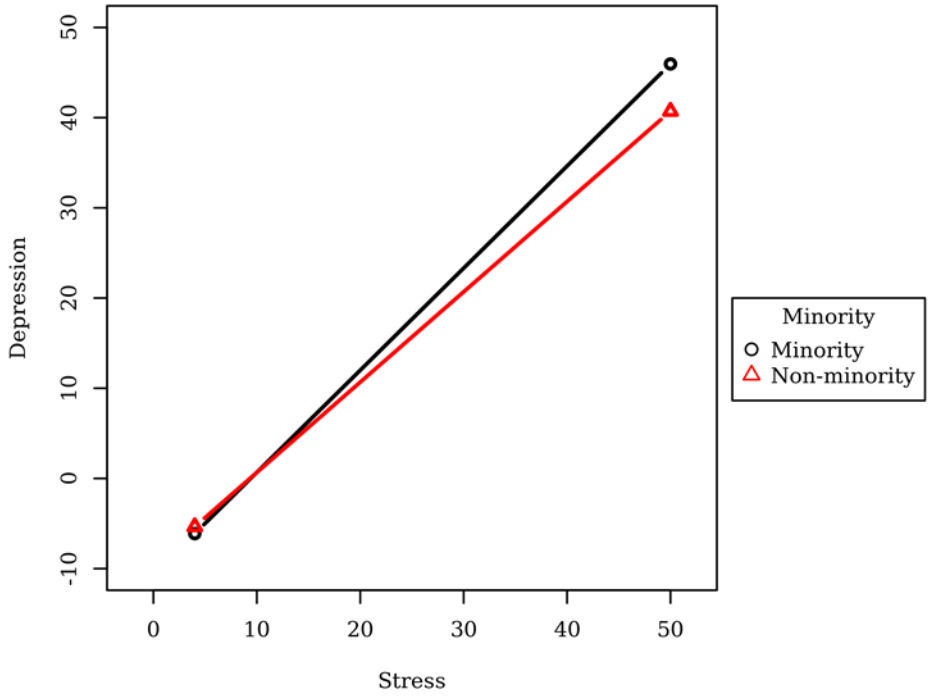


*Figure 6*. Regression lines for depression predicted by perceived stress by minority and nonminority.

**RQ3**

A two-tailed independent samples *t*-test was conducted to examine whether the mean of perceived stress was significantly different between the two minority and nonminority groups. The assumptions of normality and homogeneity of variance were assessed. A Shapiro-Wilk test was conducted to determine whether perceived stress was normally distributed (Razali & Wah, 2011). The results of the Shapiro-Wilk test were significant, $W = 0.98$, $p = .045$. These results suggest that perceived stress is unlikely to have been produced by a normal distribution; thus normality cannot be assumed. However, the mean of any random variable will be approximately normally distributed as

sample size increases according to the Central Limit Theorem (CLT). Therefore, with a sufficiently large sample size ($n > 50$), deviations from normality will have little effect on the results (Stevens, 2009). An alternative way to test the assumption of normality was utilized by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 8 presents a Q-Q scatterplot of Perceived Stress.

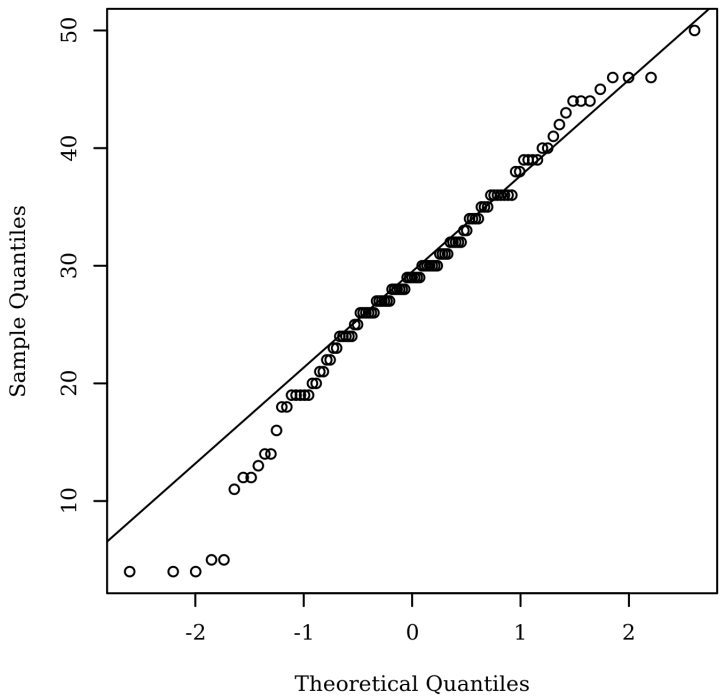


*Figure 7*. Q-Q scatterplot for normality for perceived stress.

Levene's test for equality of variance was used to assess whether the homogeneity of variance assumption was met (Levene, 1960). The homogeneity of variance assumption requires the variance of the dependent variable be approximately equal in

each group. The result of Levene's test was not significant, $F(1, 107) = 3.35$, $p = .070$, indicating that the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples *t*-test was significant, $t(107) = 5.28$, $p < .001$, indicating the null hypothesis can be rejected. This finding suggests the mean of perceived stress was significantly different between minority and nonminority groups. The mean of perceived stress in the minority group was significantly higher than the mean of perceived stress nonminority group. Table 7 presents the results of the two-tailed independent samples *t*-test. Figure 9 presents the mean for minorities were higher than the mean for nonminority students.

Table 7

*Two-Tailed Independent Samples t Test for the Difference Between Minority and Nonminority*

| | Minority | | Nonminority | | | | |
|---|---|---|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* | *t* | *p* | *d* |
| Perceived stress | 31.27 | 8.04 | 21.42 | 10.48 | 5.28 | < .001 | 1.05 |

*Note.* Degrees of freedom for the *t* statistic = 107. *d* represents Cohen's *d.*

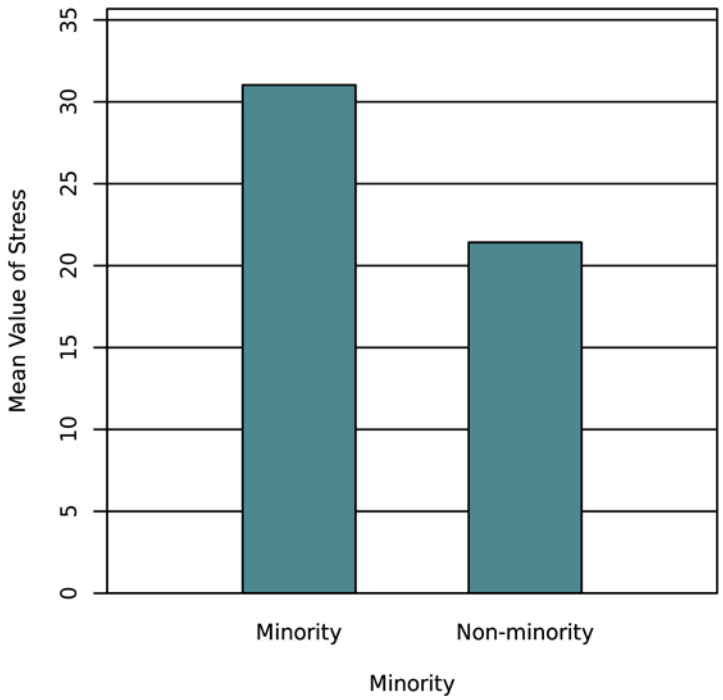


*Figure 8*. The mean of perceived stress by levels of minority and nonminority.

A two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in perceived stress between the levels of minority. The two-tailed Mann-Whitney two-sample rank-sum test is an alternative to the independent samples *t*-test, but does not share the same assumptions (Conover & Iman, 1981). There were 78 observations in the minority group and 31 observations in nonminority group. The results of the two-tailed Mann-Whitney *U* test was significant, $U = 1855$, $z = -4.34$, $p < .001$. The mean rank for minority was 63.28 and the mean rank for nonminority was 34.16. This suggests that the distribution of perceived stress for minority was significantly different from the distribution of perceived stress for nonminority. The median for minority ($Mdn = 30.00$) was significantly larger than the median for no-minority ($Mdn = 22.00$). Table 8 presents the result of the two-tailed

Mann-Whitney *U* test. Figure 10 presents a boxplot of the ranks of perceived stress by minority.

Table 8

*Two-Tailed Mann-Whitney Test for Perceived Stress by Minority*

| | Mean rank | | | | |
|---|---|---|---|---|---|
| Variable | Minority | Nonminority | *U* | *z* | *p* |
| Perceived stress | 63.28 | 34.16 | 1855.00 | -4.34 | < .001 |

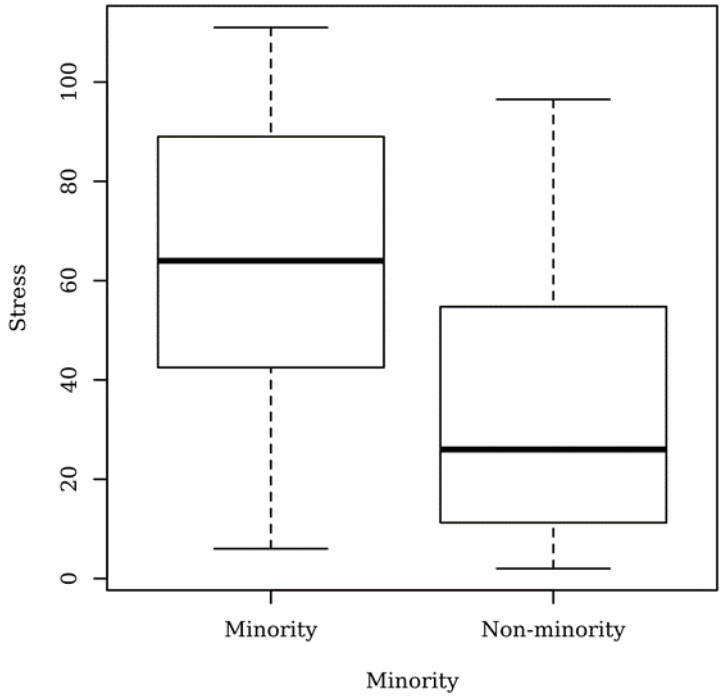


*Figure 9*. Ranks of perceived stress by minority and nonminority.

## Summary

Three major hypotheses concerning ethnicity, perceptions of stress, and depressive symptoms among females were examined using a depression and a perceived stress scale involving undergraduate students who identified as Latina, Native American, African American, Asian, Pacific Islander or White.

Hypothesis 1 predicted that perceived stress would significantly predict depressive symptoms in minority, female, undergraduate students. Data analysis confirmed this hypothesis. Perceived stress significantly predicted depressive symptoms in minority, female, undergraduate students.

Hypothesis 2 predicted that ethnicity (minority/nonminority) had a moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms. The data analysis did not support this hypothesis. In order for moderation to be supported, two conditions must be met (Netemeyer et al., 2001). The first condition (perceived stress significantly predicted depression) was met, but the second condition (the interaction model explained significantly more variance of depression than the non-interaction model) was not met. Therefore, the moderation was not supported and the null hypothesis could not be rejected.

Hypothesis 3 predicted that there would be a statistically significant mean difference between the amount of stress that minority, female, undergraduate students perceived themselves as having as compared to nonminority, female, undergraduate students. The data analysis confirmed this hypothesis. The distribution of perceived stress

for minority was significantly different from the distribution of perceived stress for nonminority.

This chapter reviewed the data collected and the results of the analyses that were conducted. The results discussed whether the hypotheses were confirmed or not given the results. The results also discussed the assumptions for normality that were conducted and whether the tests met those assumptions for normality. Lastly, the results were summarized. The final chapter will include a discussion of this study, conclusions, and recommendations.

# Chapter 5: Discussion, Conclusion, and Recommendations

## Introduction

The purpose of this research study was to understand how perceived stress predicts undergraduate, female, ethnic minority students' depressive symptoms. Although depressive symptoms and perceived stress in students have been explored exhaustively, the gap in the literature was that these variables had not been explored specifically among minority students and then compared to nonminority students. In this study, I explored SCT, controlling for level of education. Using assessments, depressive symptoms and perceived stress in minority and nonminority, female, undergraduate students were measured. A quantitative analysis was used to answer the research questions.

This study was based on a quantitative analysis of student responses to the CES-D and the PSS. Students asked to participate in this study included minority and nonminority female undergraduate students. A quantitative study was used to gather information that focused on summarizing characteristics including the relationship between depressive symptoms and perceived stress. A quantitative approach surveyed students and applied statistical techniques to recognize the overall patterns in the relationships between factors (see Leong & Austin, 2006).

Data analysis confirmed the first hypothesis, indicating that perceived stress significantly predicted depressive symptoms in minority, female, undergraduate students. Data analysis also confirmed the third hypothesis, indicating that the distribution of perceived stress for minority students was significantly different from the distribution of perceived stress for nonminority students. Data analysis did not support the second

hypothesis. In order for moderation to be supported, two conditions must be met (Netemeyer et al., 2001). The first condition was met, and the second condition was not met. Therefore, the moderation was not supported, and the null hypothesis could not be rejected.

In this chapter, I interpret the findings of this research study. Limitations, recommendations, and implications are also discussed. Lastly, the conclusions are summarized.

## Interpretation of the Findings

The findings of this study are relevant to the fields of psychology, education, and medicine. Understanding whether students' perceived stress level was a significant predictor of students' depressive symptoms can inform educational programs and students about the importance of self-care. The hypotheses that helped guide this study have been considerably reviewed. A thorough discussion of the relationship between the research questions and findings has been included to discuss the purpose of this study. The following is a discussion of the research questions, the findings, and the implications of those findings.

### RQ1

What is the relationship between the perceived stress and depressive symptoms in minority, female, undergraduate students?

The research findings above are consistent with the research findings of this research study. I found that as perceived stress increases, depression also tends to increase. Perceived stress significantly predicted depressive symptoms in minority,

female, undergraduate students.

Depression is something that many students experience in their college years. Given student demands, when managing so many tasks, college students tend to experience depression (Guo & Law, 2011). Ethnic minority students encounter additional stressors while attending college. There is a significant difference in academic success between ethnic minority (i.e., Latina, Native American, African American, Asian, Pacific Islander) and ethnic majority students (i.e., White; Meeuwisse et al., 2014). Students from ethnically diverse, predominantly low- and middle-socioeconomic status backgrounds have been found to attend college for three different reasons, including helping their families, proving their self-worth, and having received encouragement from someone outside their family (Phinney et al., 2006). Students who attend college to help their families are likely to have a greater responsibility (Phinney et al., 2006). These students may feel a greater responsibility in doing well academically. According to Oatley and Bolton (1985), a stressful event such as not meeting their own expectations may put these students at greater risk of becoming depressed.

There is a body of literature affirming that minority, undergraduate students tend to have a different intensity of perceived stress, and that this predicts their college experience. According to Pope (2002), minority college students may be confronted with different factors that are detrimental to their retention and success. These factors include lower levels of academic preparation in high school, lower socioeconomic status, and greater alienation in these institutions, which are related to the students' perceived stress (Pope, 2002). These factors contribute significantly to their high dropout rates and poor

academic achievement (Pope, 2002).

SCT has been used in many research studies to assist in the understanding of human behavior. SCT suggests that an individual's learning is directly related to observing others' behaviors in different environments (Bandura, 1986). The theory focuses on an individual's immediate environment such as his/her home, and it encompasses other environments such as the workplace, school, and relationships (Bussey & Bandura, 1999). SCT also focuses on how additional contexts (e.g., work, school, relationships) relate to personality-emotionality variables and social cognitive variables (Lent et al., 2005). The hypothesis that an individual's stress may be caused by experiences with the environment and the consequences of stress, as shown in this study, can be drawn from SCT.

**RQ2**

Is there a moderating effect of ethnicity on the relationship between the predictor variable of perceived stress (X) and the criterion variable of depressive symptoms (Y)?

The research findings from the literature review were not consistent with the findings from this research study. The data analysis did not support this hypothesis. The moderation was not supported, and the null hypothesis could not be rejected. Therefore, it is unclear whether ethnicity has a significant effect on the relationship between perceived stress and depression.

As stated above, there is a body of literature affirming that minority, undergraduate students tend to have a different intensity of perceived stress and that this predicts their college experience. According to Pope (2002), minority college students

may be confronted with different factors that are detrimental to their retention and success. These factors include lower levels of academic preparation in high school, lower socioeconomic status, and greater alienation in these institutions, which are related to the students' perceived stress (Pope, 2002). As previously stated, these factors contribute significantly to their dropout rates and poor academic achievement (Pope, 2002).

Depression is something that many students experience in their college years, regardless of ethnicity. When individuals are faced with different tasks (e.g., doing homework, working, studying) that become overwhelming, they may become depressed (Guo & Law, 2011). Some of the social situations that college students experience include psychological separation from parents, academic adjustment, and development of love relationships (Guo & Law, 2011). Guo and Law (2011) found that college students tended to manage a variety of tasks, including mental and physical health habits, developed life management competency and intellectual competency, found a career goal, developed mature intimate relationships and interpersonal competency, and established identity, self-confidence, and self-concept.

Using SCT as the theoretical framework for this research analysis provided an explanation for how students' perception of stress predicts the depressive symptoms they experience or trigger depressive cognitions or beliefs (Arévalo & Flores, 2016). The idea that an individual is more likely to change their behavior when they are confident in their own skills, which is called self-efficacy, is drawn from SCT (O'Leary, 2001). SCT identifies factors that are considered crucial in influencing behavior (Luszcynska & Schwarzer, 2005). These factors include perceived self-efficacy, outcome expectations,

outcome value, and sociostructural factors (Luszcynska & Schwarzer, 2005). SCT discusses the importance of constructs when predicting behavior (Boldizar et al., 1989). In addition to the three cognitive constructs (e.g., self-efficacy, outcome expectations, outcome values) that underlie behavior, negative life events also play a role in predicting behavior (Boldizar et al., 1989). For example, if individuals experience negative life events, they are likely to experience depressive symptoms.

**RQ3**

To what extent do minority, female, undergraduate students perceive themselves as having higher stress than nonminority, female, undergraduate students?

The research findings discussed above are consistent with the findings of this research study. The results suggest that the distribution of perceived stress for minority was significantly different from the distribution of perceived stress for nonminority. Therefore, minority, female, undergraduate students do perceive themselves as having higher stress than nonminority, female, undergraduate students. This can also be explained through the lens of SCT.

As stated earlier, minority, undergraduate students tend to have a different intensity of perceived stress than nonminority students. Latino students also experience stress resulting from poverty, racism, classism, and prejudice. Other specific stressors faced by Latinos include family stress, perceived discrimination, and peer stress (Edwards et al., 2014). Harman (2017) examined how culture affects self-perception and depression in Native American high school students. Students who identified and participated in their native culture had higher perceived discrimination levels and had

higher depression rates (Harman, 2017). According to Pierce et al. (2016), African Americans' biological responses to acute social stress are affected by individual differences and externally imposed sources of justice. For example, if the individual believes that the world is unfair, they react physiologically to stress. Perceived stress and stress reactivity are related to perceived racism in African Americans (Pierce et al., 2017). Wei et al. (2011) examined minority stress in college students. Among other minorities, Asian Americans experienced minority stress and were more likely to have a negative perception of the university environment (Wei et al., 2011). One significant form of perceived stress for Pacific Islanders is acculturative stress. Acculturative stress is a risk factor for depression (i.e., suicide attempts) among Pacific Islanders (Guerrero et al., 2009).

As stated in RQ1, the hypothesis that an individual's stress may be caused by experiences with the environment and the consequences of stress, as shown in this study, can be drawn from SCT. According to Bandura (1986), the focus of SCT is on individuals' knowledge acquisition being directly related to observing others' behaviors within different environments.

## Limitations of the Study

As stated in Chapter 1, the use of a cross-sectional correlation study was one limitation, as it did not alter or manipulate variables and there was a single group of participants that was a sample of a larger population. This particular study was short term, eliminating the possibility of observing perceived stress and depressive symptoms over a long period of time for more appropriate results, as a longitudinal study typically

provides. Given that this was a correlational study, causality could not be demonstrated. For instance, if this study would have been longitudinal, the second null hypothesis may have been rejected. Hypothesis 2 predicted that ethnicity (minority/nonminority) had a moderating effect on the relationship between the predictor variable of perceived stress and the criterion variable of depressive symptoms. Observing the students' perceived stress and depressive symptoms over a long period of time (perhaps through their college years) may have shown more accurate results.

Another limitation was that students are all different and can each respond to stress differently. They may respond to stress differently given their own life experiences. Some of their life experiences may have included trauma whereas others may not have. This may have affected the way in which they experienced and perceived stress. The use of self- report surveys and a cross-sectional correlation study were limitations, as biases or misinterpretations of questionnaires may have taken place by the participants in this study. Recall bias (i.e., inaccurately recalling information (Althubaiti, 2016)) and social desirability bias (i.e., the tendency of participants to respond in what they believe is the most socially acceptable way (Althubaiti, 2016)) could have altered the results of the study. For instance, when answering the questions on the CES-D and the PSS, students may have responded in a manner, which they found to be socially acceptable.

Lastly, by looking only at several ethnicities such as Latina, Native American, African American, Asian, Pacific Islander and White, some of the culturally relevant factors, which may contribute to perceived stress and depressive symptoms, may have been missed. Although these particular cultures

are representative of predominantly female university students, other undergraduate students from different universities could have been invited to participate in this study. Therefore, there could have been a better representation of culturally relevant factors that contribute to perceived stress and depressive symptoms.

## Recommendations

While this study was able to show that there is a relationship between perceived stress and depression in minority students and minority students perceive themselves as having more stress than nonminority students, the study was unable to show whether ethnicity has an effect on the relationship between perceived stress and depression. One conclusion that can be drawn from this is that a more in-depth survey to measure ethnicity and its effect on the relationship between perceived stress and depression needs to be developed. Another conclusion that can be drawn from this is that clinicians need to focus on stress reducing and eliminating interventions. Furthermore, a longitudinal study can provide the possibility of observing perceived stress and depressive symptoms over a long period of time for more appropriate results.

Future research will also need to look at specific interventions to assist undergraduate students in coping with stress and depression. Researchers should focus on culturally sensitive interventions for stress and depression reduction and/or elimination. Future studies can determine which specific culturally sensitive interventions may be the most effective for Latina, Native American, African American, Asian, Pacific Islander and White undergraduate, female students.

## Implications

The results of this study have interesting implications for social change. First, the fact that this study has been successfully completed adds a study regarding depression in minority, female, undergraduate students specifically. This is something for future researchers to consider. Second, the results of the study have shown that differences in ethnicity can impact undergraduate, female students' perceived stress and depressive symptoms. This study has added new data and academic thought that points to the significance of mental health in educational programs. Understanding depressive symptoms from a social cognitive perspective can initiate positive social change. The results of the study can be used to design targeted interventions (e.g., support groups, cognitive therapy) for mental health in different areas including colleges, universities, mental health agencies, hospitals, etc. Finally, students experiencing stress and depression, can look to their peers knowing that they are likely experiencing similar symptoms and rely on them for support. They can also rely on the services offered by their educational programs, hopefully with less stigmatization.

## Conclusion

The focus of this study was on perceived stress and depressive symptoms in female, undergraduate, ethnic minorities. Depression is a mental health disorder defined by the American Psychiatric Association (2013). Mental health is an important part of how individuals function in their environments. Mental stability is crucial for positive social interactions. This research addressed the gap in the literature regarding depressive symptoms in ethnic minority, female students. There was extensive research about

depressive symptoms in college students in general. The results of this research study however, offer the needed insight about the role of ethnic minority, female students and their experience of depressive symptoms.

The results of this research study offer insight to ethnic minority, female students into why and/or how they experience different depressive symptoms and perceive stress. Researchers indicate the negative impact of stigma on individuals diagnosed with mental illness (Lasalvia, 2015). This study contributes to the study of mental illness and perhaps normalizes this experience for students and decreases the stigma surrounding mental disorders so they may seek the necessary services.

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Appendix A: Permission to Use Perceived Stress Scale

**From:** Sheldon Cohen <XXX@cmu.edu>
**Date:** February 25, 2017 at 4:45:02 PM PST
**To:** "XXX@waldenu.edu" <XXX@waldenu.edu>
**Subject: RE: Perceived Stress Scale**
Claudia, You are welcome to use the PSS for your project. Best of luck. sc

-----Original Message-----
From: cXXX@waldenu.edu [mailto:XXX@waldenu.edu]
Sent: Tuesday, February 21, 2017 10:22 PM
To: Sheldon Cohen <XXX@cmu.edu>
Subject: Perceived Stress Scale

Hello,
My name is Claudia Cobos. I am currently a student at Walden University and I am in the process of writing my proposal. The topic of my study is depression in female, undergraduate, ethnic minority students. I believe that because the Perceived Stress Scale (PSS) is being used for academic and educational purposes and it is in the public domain, I do not need to obtain consent from the author. However, I would like to make absolutely sure that this is the case.

Also, I would like to notify you that I would like to use the survey for my research. Would you be able to assist me with this? Thank you in advance for your time with this matter.

Claudia Cobos

# Appendix B: Perceived Stress Scale

**The questions in this scale ask you about your feelings and thoughts during THE LAST YEAR. In each case, you will be asked to indicate your response by placing an "X" over the circle representing HOW OFTEN you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.**

| | Never | Almost Never | Sometimes | Fairly Often | Ver Oft |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **In the last month, how often have you been upset because of something that happened unexpectedly?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you felt that you were unable to control the important things in your life?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you felt nervous and "stressed"?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you dealt successfully with day to day problems and annoyances?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you felt confident about your ability to handle your personal problems?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you felt that things were going your way?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you found that you could not cope with all the things that you had to do?** | ○ | ○ | ○ | ○ | ○ |
| **In the last month, how often have you been able to control irritations in your life?** | ○ | ○ | ○ | ○ | ○ |

Appendix C: Permission to Use Center for Epidemiologic Studies Depression Scale

**From:** IRB <XXX@mail.waldenu.edu>
**Date:** March 6, 2017 at 6:25:28 AM PST
**To:** Claudia Cobos <XXX@waldenu.edu>, IRB <XXX@mail.waldenu.edu>
**Subject: RE: Permission for using CES-D**

Hi Claudia,
Yes, providing a weblink which states the assessment is part of the public domain is sufficient.
Best,

**Bryn Saunders**
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Email: XXX@mail.waldenu.edu
Information about the Walden University Institutional Review Board, including instructions for application, may be found at this link: http://academicguides.waldenu.edu/researchcenter/orec

**From:** Claudia Cobos mailto:XXXs@waldenu.edu]
**Sent:** Friday, March 03, 2017 12:47 PM
**To:** IRB <XXX@mail.waldenu.edu>
**Subject:** Re: Permission for using CES-D

Hello,
I am copying and pasting what I have found in regards to the CES-D. I just want to make certain that I am doing everything I need to be doing. "The CES-D is available in the public domain so check the end of this review to download the Stanford edition of the CES-D." from http://www.bmedreport.com/archives/7139 and "Document is in the public domain. Duplicating this material for personal or group use is permissible" from *www.bhevolution.org/public/document/ces-d.pdf*.
*Do you think this is sufficient?*
*Claudia Cobos*
XXX@waldenu.edu

# Appendix D: Center for Epidemiologic Studies Depression Scale

**Center for Epidemiologic Studies Depression Scale (CES-D), NIMH**

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

| | **During the Past Week** | | | |
|---|---|---|---|---|
| | Rarely or none of the time (less than 1 day ) | Some or a little of the time (1-2 days) | Occasionally or a moderate amount of time (3-4 days) | Most or all of the time (5-7 days) |
| 1. I was bothered by things that usually don't bother me. | ☐ | ☐ | ☐ | ☐ |
| 2. I did not feel like eating; my appetite was poor. | ☐ | ☐ | ☐ | ☐ |
| 3. I felt that I could not shake off the blues even with help from my family or friends. | ☐ | ☐ | ☐ | ☐ |
| 4. I felt I was just as good as other people. | ☐ | ☐ | ☐ | ☐ |
| 5. I had trouble keeping my mind on what I was doing. | ☐ | ☐ | ☐ | ☐ |
| 6. I felt depressed. | ☐ | ☐ | ☐ | ☐ |
| 7. I felt that everything I did was an effort. | ☐ | ☐ | ☐ | ☐ |
| 8. I felt hopeful about the future. | ☐ | ☐ | ☐ | ☐ |
| 9. I thought my life had been a failure. | ☐ | ☐ | ☐ | ☐ |
| 10. I felt fearful. | ☐ | ☐ | ☐ | ☐ |
| 11. My sleep was restless. | ☐ | ☐ | ☐ | ☐ |
| 12. I was happy. | ☐ | ☐ | ☐ | ☐ |
| 13. I talked less than usual. | ☐ | ☐ | ☐ | ☐ |
| 14. I felt lonely. | ☐ | ☐ | ☐ | ☐ |
| 15. People were unfriendly. | ☐ | ☐ | ☐ | ☐ |
| 16. I enjoyed life. | ☐ | ☐ | ☐ | ☐ |
| 17. I had crying spells. | ☐ | ☐ | ☐ | ☐ |
| 18. I felt sad. | ☐ | ☐ | ☐ | ☐ |
| 19. I felt that people dislike me. | ☐ | ☐ | ☐ | ☐ |
| 20. I could not get "going." | ☐ | ☐ | ☐ | ☐ |

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology.