

INVESTIGATING THE MODERATING EFFECTS OF OPTIMISM, HOPE, AND  
GRATITUDE ON THE RELATIONSHIP AMONG NEGATIVE LIFE EVENTS AND  
PSYCHOLOGICAL DISTRESS AND LIFE SATISFACTION

by

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## ABSTRACT

The literature has documented that negative life events such as divorce, financial issues, or relationship changes lead to various psychological concerns including depression, anxiety, or suicidal behaviors. However, several variables affect how people cope with negative life events. Among those variables, optimism, hope, and gratitude have been emphasized in the literature, and their relationships with several psychological outcomes have been studied. However, little is known about the effects of these variables on negative life events and their relationship to psychological distress and life satisfaction.

The purpose of this study was to investigate the relationship between negative life events and psychological distress and life satisfaction. This study also examined the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. This investigation tested the theoretical model that negative life events predicted psychological distress and life satisfaction in undergraduate students ( $N = 738$ ). In addition, this investigation tested three theoretical interaction models that optimism, hope and gratitude moderated the relationships between negative life events and psychological distress and life satisfaction.

The results revealed that negative life events predicted psychological distress and life satisfaction. Regarding moderating effects, optimism hope, and gratitude moderated negative life events' prediction of psychological distress, but not life satisfaction. These results are consistent with the existing literature on negative life events. The results and limitations are discussed along with suggestions for future research. Implications are presented for college counselors and counselor educators.

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## CHAPTER ONE: INTRODUCTION

The purpose of the study was to examine the relationships between negative life events and psychological distress and life satisfaction. This study also aimed to examine the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. The directional hypotheses of the study were determined to be; 1) that negative life events predict psychological distress and life satisfaction, and; 2) that optimism, hope, and gratitude moderate negative life events' prediction of psychological distress and life satisfaction. In short, it was expected that individuals with higher scores on optimism, hope, and gratitude were less affected by negative life events, experienced less psychological distress and more life satisfaction.

### Theoretical Overview

Psychological distress is one of the most common emotional issues among college students (Gallagher, 2014), and it is a quickly growing problem (Samuolis, Barcellos, LaFlam, Belson, & Berard, 2015). Even though there are different definitions for psychological distress, in this study, psychological distress is defined as a non-clinical, unpleasant emotional state that an individual experiences as a result of a stressor or demand (see Mirowsky & Ross, 2003; Ridner, 2004). The literature has documented that psychological distress is related to various negative emotional outcomes such as depression anxiety, sadness, and nervousness, (Drapeau, Marchand, & Beaulieu-Prévost, 2012; Jackson & Finney, 2002; Ohayashi & Yamada, 2012). In addition to its unpleasant experiences, psychologic distress can be a predictor of different health-related issues such as alcohol consumption, smoking, substance abuse, and suicidality (Campos,



Besser, Abreu, Parreira & Blatt, 2014; Deasy, Coughlan, Pironom, Jourdan, & Mcnamara, 2014; Nordfjærn, Hole, & Rundmo, 2010).

Psychological distress is also related to negative life events (Marum, Clench-Aas, Nes, & Raanaas, 2014). Negative life events refer to undesirable, generally uncontrollable stressful life happenings (Armstrong, Galligan, & Critchley, 2011; Jackson & Finney, 2002). Existing literature has established the relationship between negative life events and various unpleasant emotional experiences like depression, anxiety, mental health issues, decreased well-being, and distress (Tucker & Kelley, 2009; Paykel, 2003; Phillips, Carroll, & Der, 2015; Tennant, 2002). The literature has also shown that negative life events are risk factors for college students (Beasley, Thompson, & Davidson, 2003; Visser, Loess, Jeglic, & Hirsch, 2013).

In spite of the fact that negative life events can be a risk factor for psychological distress, there are various factors affecting the relationship between negative life events and psychological distress. For example, social support (Murberg & Bru, 2009), sense of mastery (Marum et al. 2014; Schieman & Turner, 1998), and cognitive hardiness (Beasley et al., 2003; Kobasa & Puccetti, 1983) reduced the strength of the relationship between negative life events and psychological distress. In other words, some positive traits appear to play a moderating role when dealing with negative life events since these variables have been shown to be inversely related to mental health issues including psychological distress, stress, negative mood or depressive symptoms (Aspinwall & Taylor, 1992; Lambert, Fincham, & Stillman, 2012; Nes & Segerstrom, 2006). Taken together, this literature suggesting the importance of strength has been called, positive psychology.

The roots of positive psychology originated from the research of Maslow. Maslow (1954) emphasized the need of focusing on positive emotions, strengths, and potential in psychology. Since Maslow first introduced positive psychology, there had been many studies and attempts to understand positive psychology until the early 2000s. At that point, Seligman and Csikszentmihalyi (2000) proposed a new approach to positive psychology that argues human strengths, potentials, or positive emotions should be focused in addition to negative sides of human nature (Gable, & Haidt, 2005; Granello, 2013).

The literature has identified various positive psychology variables such as hope, optimism, humor, gratitude, creativity, forgiveness, self-esteem, and others (Lopez & Snyder, 2011; Seligman & Csikszentmihalyi, 2000). The literature has also documented the effects of positive psychology on mental health, and the relationships between positive psychology variables and emotional outcomes. For example, Santos et al. (2013) reviewed positive psychology studies, and inferred that positive psychology interventions were possibly effective in the treatment and prevention of depressive symptoms. The studies have also shown that the positive cognitive triad (Mak, Ng, & Wong, 2011), positive emotions (Nezlek & Kuppens, 2008; Shankman et al., 2011), positive thinking (Lightsey, 1994), and positive coping strategies (Sawyer, Pfeiffer, & Spence, 2009) are effective in dealing with mental health issues, or can be protective factors.

In addition to the contributions of positive psychology to well-being and mental health, the term positive coping has emerged in the literature (Schwarzer & Knoll, 2003). The concept of positive coping comprises four distinct categories of coping: reactive, anticipatory, preventive, and proactive coping (Schwarzer & Knoll, 2003). Reactive coping occurs to deal with

difficulties that has already happened, such as an accident or the death of a loved one.

Alternatively, anticipatory coping refers to dealing with stressful events happening in the near future, such as having to take an exam (Schwarzer & Knoll, 2003). Preventive coping, however, refers to events occurring in the distant future, and contribute to the person's resistance to unknown possible difficulties such as illness or disaster. Finally, proactive coping refers to distant future events as well, but the stressful event is not considered a threat to the person, but rather an opportunity for growth or personal challenge. Positive coping is more interested in proactive coping because it promotes well-being and growth more than the other categories (Schwarzer & Knoll, 2003).

When talking about coping, Lazarus' coping model (Lazarus, 1999; Lazarus & Folkman, 1984) should be discussed because it has received significant attention in the coping literature. Lazarus and Folkman (1984) defined coping as behavioral and cognitive efforts to deal with internal or external difficulties or demands. In Lazarus' coping model, there are two main categories: (a) problem-focused coping, and (b) emotion-focused coping. In problem-focused coping, the individual seeks information and action to resolve the issue whereas in emotion-focused coping, the individual tries to adjust emotions, when generally he or she cannot change the situation (Lazarus, 1999).

According to Lazarus' coping model, an individual first evaluates the situation, and whether or not it is related to his or her life. This process is called the primary appraisal (Lazarus, 1999). As a result of the primary appraisal, one of three possible options (harm/loss, threat, or challenge) emerge. Harm/loss refers to events in the past; threat refers to events happening in present; and challenge is related to obstacles or difficulties from future situations (Lazarus,

1999). Then, second appraisal takes place in which the person evaluates the own internal and external sources, which are needed to deal with the situation (Lazarus, 1966; Lazarus, 1999). Primary and secondary appraisals shape how an individual copes with difficulty.

Even though Lazarus aimed to rebut the claims of positive psychology, prompting a debate among researchers in the field (Lazarus, 2003a; 2003b; Rand & Snyder, 2003) there have been many studies completed since his criticism, which expanded the knowledge in these fields. Rather than staying focused on the debate, it is theoretically possible to apply both concepts by incorporating the positive psychology framework into Lazarus' coping model. First, it makes theoretical sense to connect the first appraisal in Lazarus' coping with proactive coping in positive psychology. For example, positive psychology can enhance an individual's first appraisal, and generate solutions that are more valuable for the person. Second, positive psychology can favor emotion-focused coping. As mentioned, emotion-focused coping generally happens when no action can be done, but the person attempts to balance internal feelings generated by the situation (Lazarus & Folkman, 1984). Therefore, positive psychology interventions or variables can help produce more positive emotions in the process of emotion-focused coping.

As mentioned previously, various positive psychology variables have been identified and the literature has documented the effects of these variables on mental health. Consistent with the purpose of this study, three positive psychology variables were examined: optimism, hope and gratitude. In the sections below, each of these is described in terms of its contribution to mental health.

## Optimism

Optimism refers to one's expectations about the future (Carver & Scheier, 2003). Optimism is considered a human motivation in positive psychology that affects behaviors (Carver & Scheier, 2003). Positive psychology is also interested in whether optimism affects the coping process (Chang 1998a; Carver & Scheier, 2003; Carver, Scheier, Miller, & Fulford, 2011). In a meta-analysis, Nes and Segerstrom (2006) found that dispositional optimism is related to effective coping. The literature has also shown that optimism can contribute to the adjustment to major life changes (Aspinwall & Taylor, 1992; Brissette, Scheier, & Carver, 2002). Additionally, optimism is related to other mental health outcomes such as depressive symptoms and life-satisfaction (Puskar, Sereika, Lamb, Tusaie-Mumford, McGuinness, 1999; Stanojevic, Krstic, Jaredic, & Dimitrijevic, 2014). Thus, optimism was found to be potential positive contributor to coping, mental health, and emotional state.

## Hope

Hope is defined as a cognitive set that includes agency and pathways (Snyder et al., 1991). Pathways refers to developing different ways to handle issue, whereas agency is about motivation to pursue the different options for addressing problems. Positive psychology considers both the cognitive and emotional aspects of hope (Lopez, Snyder, & Pedrotti, 2003). There have been studies that identified the relationship between hope and different negative emotional outcomes. For example, hope was found to relate to depressive symptoms, anxiety, psychological distress and negative effect, (Michael & Snyder, 2005; Rustoen, Cooper, & Miaskowski, 2010; Visser et al., 2013). The researchers also showed that hope can contribute to adjustment and positive outcomes such as life satisfaction and self-care, (Canty-Mitchell, 2001;

Marques, Lopez, Fontaine, Coimbra, & Mitchell, 2015; Rustoen et al., 2010). As the literature documented, hope is an important variable contributing to positive emotions, and decreasing negative emotions. Hence, it was valuable to consider hope in dealing with negative life events.

### Gratitude

Gratitude is a feeling of thankfulness or appreciation about benefits received (Watkins, Gelder, & Frias, 2011), and it has been considered as a desirable human characteristic throughout history (Emmons, McCullough, & Tsang, 2003). As a positive psychology variable, gratitude is considered a human strength (Emmons et al., 2003). As similar to optimism and hope, gratitude has received attention in the literature and has been related to satisfaction, positive effectivity, dispositional empathy, and happiness (McCullough et al., 2002; Watkins, Woodward, Stone, & Kolts, 2003). Additionally, gratitude is negatively correlated with depressive symptoms (Lambert et al., 2012; Senf & Liao, 2013). Thus, because of the relationship between gratitude and various emotional outcomes, it was logical to consider the effects of gratitude on the relationship between negative life events and psychological distress.

All in all, psychological distress is related to various negative emotions and unhealthy behaviors. Psychological distress is also a common issue among college students. On the one hand, the literature has shown negative life events relate to various issues including psychological distress. On the other hand, how an individual responds to negative life events matters, and affects the outcomes from negative events. In this sense, coping and other variables play a role. Connecting coping with psychological variables such as optimism, hope, and gratitude has received much attention in extant research. The literature has documented the

effects of these variables on mental health, making it useful to consider optimism, hope, and gratitude in dealing with life events.

Thus, optimism, hope, and gratitude were chosen to be examined in this study. As the literature showed, these variables have potentials to moderate the effects of negative life events on psychological distress and life satisfaction. Related to this potential, optimism, hope, and gratitude have greatest chance to contribute to coping with negative life events.

### Statement of the Problem

Psychological distress is a common problem among college students, and it is related to various physical and mental health issues such as alcohol consumption, unhealthy diet, physical inactivity, smoking, stress, substance abuse, suicidality, and self-injury (Campos et al., 2014; Deasy et al., 2014; Martin, Thomas, Andrews, Hasking, & Scott, 2015; Nordfjærn et al., 2010; Samuolis et al., 2015). Negative life events have been found to be predictors of psychological distress among college students (Beasley et al., 2003; Li, Zhang, Liu, & Cao, 2013; Visser et al., 2013). On the other hand, there are multiple variables (i.e., social support, sense of mastery, cognitive hardiness) that affect how people respond to and cope with negative life events (Beasley et al., 2003; Marum et al., 2014; Murberg & Bru, 2009).

Positive psychology is a relatively new approach that can enhance positive emotions and lessen negative emotions. In addition, positive psychology variables, specifically optimism, hope, and gratitude, have been identified throughout the literature. As documented by previous studies examining the influence of optimism (Aspinwall & Taylor, 1992; Chang, 1998a; 1998b; Hirsch, Wolford, LaLonde, Brunk, & Morris, 2007; Puskar et al., 1999), hope (Marques et al., 2015; Michael & Snyder, 2005; Peleg, Barak, Harel, Rochberg, & Hoofien, 2009; Visser et al.,

2013), and gratitude (Lambert et al., 2012; Watkins et al., 2003; Wood, Maltby, Gillett, Linlet, & Joseph, 2008) on depressive symptoms, psychological distress, stress, negative mood or other emotional outcomes, it has been confirmed that there is a strong relationship between optimism, hope and gratitude and mental health issues. However, in spite of the prevalence of psychological distress and its negative effects on physical and mental health related issues among college students, little is known about the effects of optimism, hope, and gratitude on the relationship between negative life events and psychological distress.

#### Significance of the Study

The significance of this study is that the results provide information for counselors who are helping college students deal with negative life events. The results of this study provided insight about the relationships between negative life events and psychological and life satisfaction. The results also provide insight into students who can use positive variables to cope with negative events. As reviewed above, the literature has showed that negative life events are risk factors for increasing psychological distress among college students. At the same time, how individuals respond to negative events matters. The literature has documented the effects of positive psychology variables, specifically optimism, hope, and gratitude, on mental health and well-being. However, the moderating effects of optimism, hope, and gratitude on the relationship between negative life events and psychological distress has not been previously studied. Therefore, it was useful to examine this moderating effect, because as the literature has shown, positive psychology variables are related to an increase in positive emotions. Thus, the results of this study provided insight into optimism, hope, and gratitude can reduce negative life events' effects, and enhance positive emotions. In addition, according to data from the National Survey



of College Counseling Centers, 11% of students participating in the survey sought counseling services (Gallagher, 2014). Thus, the results of the study were helpful to provide insight for improving counselors' ability to assist college students seeking professional help to resolve negative life issues.

### Purpose and Potential Implications of the Study

The primary purpose of this study was to examine the relationships between negative life events and psychological distress and life satisfaction. This also aimed to investigate the moderating effects of optimism, hope, and gratitude on the negative life events' prediction of psychological distress and life satisfaction. The results of the current study contributed to understanding the nature of, and coping with, psychological distress. Because counselors help clients who are dealing with various life issues, and psychological distress as a result of life issues, the results of the study were helpful for counselors to provide effective coping strategies to clients. Similarly, the results further increased the understanding of the potential contribution of positive psychology to coping. Furthermore, the results of the study produced more questions for future research that can focus on positive strategies and interventions to deal with negative life events and enhance positive variables.

### Research Questions and Hypotheses

The following research questions and hypotheses guided this study (see Table 1 for a list of variables, measurement instruments, and sources):

Research Questions One: How well do negative life events predict psychological distress?

Research Question Two: How well do negative life events predict life satisfaction?

Research Question Three: To what degree does optimism moderate negative life events' prediction on psychological distress?

Research Question Four: To what degree does optimism moderate negative life events' prediction on life satisfaction?

Research Question Five: To what degree does hope moderate negative life events' prediction on psychological distress?

Research Question Six: To what degree does hope moderate negative life events' prediction on life satisfaction?

Research Question Seven: To what degree does gratitude moderate negative life events' prediction on psychological distress?

Research Question Eight: To what degree does gratitude moderate negative life events' prediction on life satisfaction?

Table 1: Research Question Variables, Measurement Tools, and Sources

Variables	Measurement Tool	Source
Negative life events	The Life Experiences Survey	Sarason, Johnson, & Siegel, 1978
Psychological distress	Kessler Psychological Distress Scale (K10)	Kessler et al., 2002
Life satisfaction	Satisfaction with Life Scale (SWLS)	Diener, Emmons, Larsen, & Griffin, 1985
Optimism	Life Orientation Test-Revised (LOT-R)	Scheier, Carver, & Bridges, 1994
Hope	Adult Dispositional Hope Scale (ADHS)	Snyder et al., 1991
Gratitude	Gratitude Questionnaire-6 (GQ-6)	McCullough et al., 2002

The corresponding null hypotheses for each question will be:

Null Hypothesis One: Negative life events do not predict psychological distress.

Null Hypothesis Two: Negative life events do not predict life satisfaction.

Null Hypothesis Three: Optimism does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Four: Optimism does not moderate negative life events' prediction on life satisfaction.

Null Hypothesis Five: Hope does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Six: Hope does not moderate negative life events' prediction on life satisfaction.

Null Hypothesis Seven: Gratitude does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Eight: Gratitude does not moderate negative life events' prediction on life satisfaction.

### Research Model

The purpose of this study was to investigate the relationships between negative life events and psychological distress and life satisfaction. A model corresponding to the purpose of this study was developed to assist the researcher (See figure 1). This study also aimed to examine the moderating effects of optimism, hope, and gratitude on the negative life events' prediction of psychological distress and life satisfaction. Thus, interaction conceptual models were developed for optimism (see Figure 2), hope (see Figure 3), and gratitude (see Figure 4).

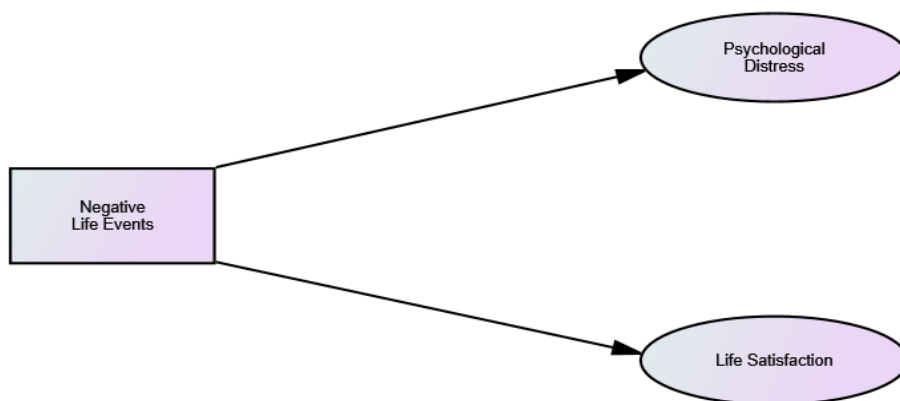


Figure 1: Main effects theoretical model of predictor variable

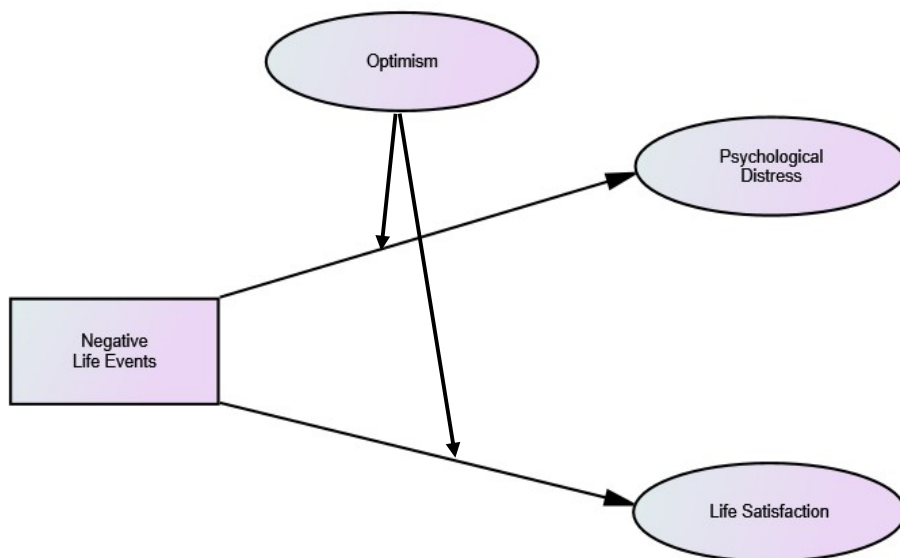


Figure 2: Optimism theoretical interaction conceptual model

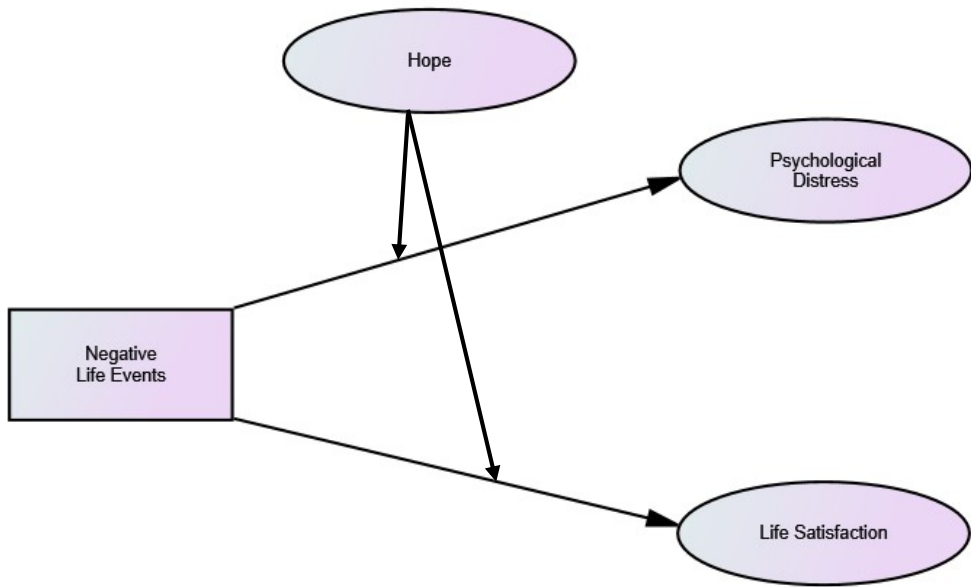


Figure 3: Hope theoretical interaction conceptual model

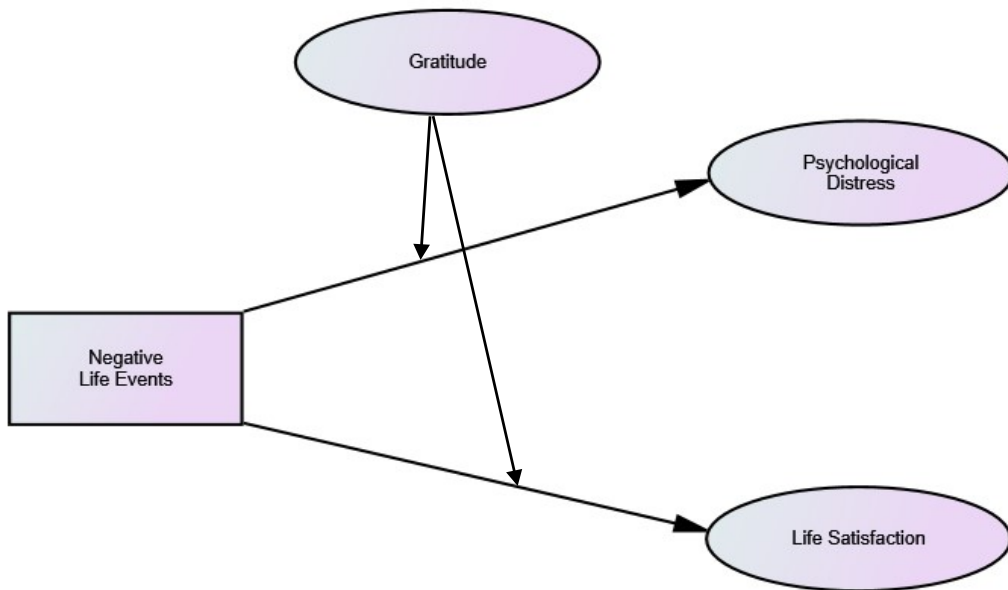


Figure 4: Gratitude theoretical interaction conceptual model

## Research Design

This study was nonexperimental research using a correlational research design. “The basic design in correlational research is very simple, involving nothing more than collecting data in two or more variables for each individual in a sample and computing a correlation coefficient” (Gall, Gall, & Borg, 2007, p. 323). Correlational studies enables the researcher to examine multiple variables in a study, either singly or in combination. Another advantage of correlational studies is that the results provide information about the degree of the relationships between the constructs examined (Gall et al., 2007). Although correlational studies provide information about cause-and-effect relationship between the constructs examined, it is generally hard to make strong conclusions about causality (Gall et al., 2007).

In this study, the independent variable was negative life events, and the dependent variables were psychological distress and life satisfaction. The moderating variables were determined to be optimism, hope, and gratitude. Participants were asked to complete six surveys: (a) the Life Experiences Survey (LES; Sarason et al. 1978), (b) the Kessler Psychological Distress Scale (K10; Kessler et al., 2002), (c) the Satisfaction with Life Scale (SWLS; Diener et al., 1985), (d) the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), (e) the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991), and (f) the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002).

This study implemented structural equation modeling (SEM) to test the model that claims negative life events predicts psychological distress and life satisfaction. SEM was also implemented to test the interaction models that show the moderating of optimism, hope, and gratitude on negative life events’ prediction of psychological distress and life satisfaction. SEM

is a sophisticated statistical model that can be used to analyze the hypothesized causal relationship between variables (Gall et al., 2007). “Structural equation modeling (SEM) uses various types of models to depict relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model hypothesized by the researcher” (Schumacker & Lomax, 2010, p. 2). Because SEM enables variables to be measured with more reliability and validity, it can test the causal relationships more powerfully (Gall et al., 2007).

Schumacker and Lomax (2010) listed four reasons why SEM is popular and useful. First, even though basic statistics are not able to analyze multiple variables, SEM can. Thus, a researcher can test more complex theories. Second, a measurement’s validity and reliability are important factors, and SEM takes measurement error into account in the analysis. Third, SEM was developed over the last few decades, and has become better able to test advanced theories. For example, SEM can analyze group differences in theoretical models and analyze the main and interaction effects among variables. And finally, SEM software programs have become widely available (Schumacker & Lomax, 2010).

### Population and Sampling

The target population for this study was college students in the U.S. The literature has documented that college students face various negative life events, and negative life events predict several psychological issues among college students (Beasley et al., 2003; Hirsch et al., Leong & Vaux, 1991; Marum et al., 2014; Rowe, Walker, Britton, & Hirsch., 2013; Visser et al., 2013). Because the literature has shown a relationship between negative life events and various aspects of psychological distress among college students, it makes theoretical sense to target this population. However, given that there are more than 20,550,000 individuals enrolled to

undergraduate programs in US (US Census, 2012), it was not logistically probable to include all undergraduate college students as a population for this study. Thus, an accessible population was identified to include college students in a large Southeastern university in the U.S. Due to the size of the student populations at this university, a sampling procedure was implemented to collect study data.

### Sampling

Criterion sampling was utilized in this study. In this sampling method, the researcher tries to reach participants who met the criteria for a study (Gall et al., 2007). The criteria for this study were to be an undergraduate student, and to be 18 years or older. Thus, for this study, the college students at a large Southeastern university were contacted and asked to participate in person. Regarding the number of participants, it is usual to garner the largest sample size possible in this kind of quantitative study (Gall et al., 2007). However, there are several mathematical procedures which guide sample size. The right sample size is necessary in order to be able to reject null hypotheses “when in fact it is false, and to determine that likely value of population parameters (typically, the population mean and standard deviation)” (Gall et al., 2007, p. 176). Thus, a G power analyses was conducted to determine needed sample size with the possibility of a small effect size. As Schumaker and Lomax (2010) recommended, the [www.danielsoper.com](http://www.danielsoper.com) website was used to determine a priori sample size for SEM. According to the website, in order to be able to reject the null hypotheses at a small effect size (.1), and high power (.8) with six latent variables and 108 observed variables at the probability level of  $p < .05$ , a minimum sample of 526 was needed.



### Data Collection Procedure

The researcher obtained the approval from the University of Central Florida's Institutional Review Board (IRB) before starting the data collection procedures, and followed all ethical research practices. Before collecting any data, the researcher also obtained the permission from each original authors to use each instrument. The authors of instruments were also asked for permission to transfer the instruments into Qualtrics®, which is an internet-based survey program that was used to collect data from respondents via online.

Data collection were performed at a large university located in Southeastern U.S. in two ways: face-to-face and online. After obtaining IRB permissions, the researcher contacted 28 undergraduate instructors from several departments for permission to access potential participants in class setting. Sixteen of these instructors gave permission to access students. Thus, the researcher collected data from 23 classes. In addition, the researcher collected data face-to-face at the university library on one occasion. Finally, the researcher reached 938 students, and 775 of them participated the study, yielding an 82.6% response rate. After the data screening analyses, the final suable data was 738, yielding a 78.6% response rate.

### Instrumentation

In order to measure negative life events (independent variable), optimism, hope, and gratitude (moderating variables), psychological distress and life satisfaction (dependent variables), six instruments were utilized and they are described in the paragraphs below.

The Demographic Questionnaire was created by the researcher to gather participants' demographic information. The Demographic Questionnaire was a self-administered instrument,

which sought information about participants' basic demographic characteristics (e.g. gender, age, ethnicity, major etc.).

The Life Experiences Survey (LES; Sarason et al. 1978) was used to measure negative life events that participants experienced within the last 12 months. The LES has totally 60 specific events, including 10 events specifically for undergraduate students, and three blank spaces for participants to indicate other events. Participants rated the events that they experienced within the last 12 months, by indicating the effects of the event from extremely negative (-3) to extremely positive (+3). The LES provides a total score of negative life events by summing the negative effects of the events, and negative life event events total score is presented as a negative values. A total score of positive life events is calculated by summing the positive effects of the events, and positive life events total score provides a positive values. For this study, only negative life events scores were used.

For the purposes of this study, the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) was used to measure optimism. The LOT-R is a brief research instrument which measures dispositional optimism. LOT-R includes 10 items consisting of three positively worded items (e.g., "In uncertain times, I usually expect the best"), three negatively worded items (e.g., "If something can go wrong for me, it will"), and four filler items (e.g., "It's easy for me to relax"). LOT-R uses a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). Negatively worded items are reversed when scoring, and filler items are not included to the total score. LOT-R provides a total score that is the sum of positively worded items and reversed negatively worded items.

To measure the trait hope, the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991) was used. ADHS includes 12 items, four items on the agency subscale (e.g., “I’ve been pretty successful in life”), four items on the pathways subscale (e.g., “I can think of many ways to get out of a jam”), and four fillers (e.g., “I feel tired most of the time”). Participants are asked to rate each item using the following 4-point scale: 1 (*definitely false*), 2 (*mostly false*), 3 (*mostly true*), and 4 (*definitely true*). ADHS provides a total score that is the sum of eight items measuring hope; the scores range from eight to 32. Furthermore, ADHS can provide scores for the agency and the pathways subscales separately. In this study, only the ADHS total score was used (Snyder et al., 1991).

The Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002) was used to measure gratitude. GQ-6 was initially developed as 39 positively and negatively worded items. Based on a preliminary study by McCullough et al. (2002), six items were retained that strongly loaded one factor and assessed gratitude. GQ-6 assesses individuals’ experiences and expression of appreciation and gratefulness in daily life. GQ-6 includes six items assessing gratitude intensity, frequency, span, and density facets. Examples of questionnaire items are “I feel thankful for what I have received in life”, “I sometimes feel grateful for the smallest things”, or “I am grateful to a wide variety of people.” Participants responded to items on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). After reversing the values on negatively worded items, all items are summed up, and a total score can be reached; higher scores indicating higher levels of gratitude (McCullough et al., 2002).

The Kessler Psychological Distress Scale (K-10; Kessler et al., 2002) was implemented to measure psychological distress. The K-10 measures non-specified psychological distress. The K-

K-10 has 10 items assessing symptoms experienced within the previous 28 days (4 weeks). Items are scored using a 5-point Likert scale ranging from 1 (*none of the time*) to 5 (*all of the time*). Examples of items include “Did you feel tired out for no good reasons?”, “Did you feel that everything was an effort?”, or “Did you feel so sad that nothing could cheer you up?”. The K-10 provides a total score that is the sum of all items. The scores range from 10 to 50, where higher scores indicate a higher level of psychological distress (Kessler et al., 2002).

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) was used to measure participants’ levels of life satisfaction. SWLS has five positively worded items, which are scored from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS provides a total score ranging from five to 35, where higher scores indicate more satisfaction with one’s life (Diener et al., 1985).

### Data Analyses

The collected data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 21.0 to calculate descriptive statistics, correlations, and reliabilities. Confirmatory factor analyses was conducted using Statistical Analysis System (SAS) version 94 in order to evaluate the factor loading between observed and latent variables. After these analyses, Mplus Version 7 was used to test theoretical models to explore the relationship between latent variables.

### Definitions of Terms

In this section, conceptual and operation definitions of the major terms in this study are presented. The definitions of terms are following:

## Psychological Distress

In this study, psychological distress is considered as a non-clinical unpleasant experience, which is caused by a stressor. Even though, psychological distress is closely related to depression and anxiety, this study accepts Ridner's (2004) definition: "Psychological distress: the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person" (p. 539).

## Negative Life Events

Negative life events refer to a set of life changes that cause negative outcomes (Armstrong et al., 2011), and unpleasant, uncontrollable and generally stressful experiences (Jackson & Finney, 2002).

## Coping

Schwarzer and Knoll (2003) defined coping as "a response to an event or in anticipation of upcoming demands, but it also can involve a proactive approach to self-imposed goals and challenges" (p. 393).

## Positive Psychology

"The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present)" (Seligman & Csikszentmihalyi, 2000, p. 5).

## Optimism

Optimism is about generalized expectations of positive vs negative outcomes (Scheier & Carver, 1985), and refers to “expecting good things to occur in one’s life” (Carver et al., 2011, p. 303).

## Hope

“Hope is defined as the perceived ability to produce pathways to achieve desired goals and to motivate oneself to use those pathways” (Rand & Cheavens, 2011).

## Gratitude

“Subjectively, gratitude is a felt sense of wonder, thankfulness, and appreciation for benefits received” (Emmons et al., 2003).

## Ethical Consideration

The following ethical steps were implemented:

1. Before data collection, an approval from the University of Central Florida’s Institutional Review Board (IRB) was obtained.
2. Permission to use instruments were obtained from developers of each instrument.
3. Before data collection, the researcher contacted to undergraduate classroom instructors to obtain permission to access undergraduate students in their classes.
4. During the data collection process, all UCF IRB ethical regulations were followed (i.e., informing participants about their rights).
5. All data were collected anonymously to ensure the confidentiality of participant responses.

6. Data were collected from only volunteer participants.
7. The study were conducted with the permissions of dissertation chairs and committee members.

### Potential Contributions

The results of this study provided potential implications and contributions to counseling and counselor education literature. First, the results of the study expanded the knowledge and insight about the relationships between negative life events and psychological distress and life satisfaction. The results showed that higher level of negative life events predicted more psychological distress, and less life satisfaction. Therefore, this result provided knowledge for counselors who help clients concerning psychological distress. The results also provided insight about coping with negative life events. Because counselors help clients deal with negative events, the results contributed to counselors' understanding of the effects of optimism, hope, and gratitude on the relationship between negative life events and psychological distress, and life satisfaction. Therefore, the results can be helpful for counselors who incorporate positive psychology in their practice. In addition, the results of the study contributed to the literature of coping by showing the potential influences of optimism, hope, and gratitude.

Regarding future research, the results can guide future research priorities related to negative life events, psychological distress, coping, or positive psychology. Future research could investigate the contributions of positive psychology interventions on coping with negative events. Because this study aimed to examine the effects of trait variables, future research could investigate the factors influencing key positive psychology trait variables.

### Limitations

One of the limitation of the study was research design. This study is designed as non-experimental, correlational research. Although correlational statistics help to understand cause and effect relationship, it is not possible to make a strong conclusion about causality (Gall et al., 2007). Another limitation was related to the data collection process. There might be some biases in the participants' responses to questionnaire items. Participants responded to all questionnaires in a single session, so there might be other factors affecting their responses such respondents' mood or disposition resulting from events in their lives outside of the study. Generalizability of the results may be limited to college and university populations with similar geographic characteristics. In addition, related to instrumentation, because each item of the LES can measure both positive and negative events, the internal reliability of the negative life event score was not calculated. Thus, the limitation includes the lack of reliability and validity of the LES.

### Summary

In this chapter, a review of the study was presented. First, the purpose of the study and theoretical background were explained. Then, the statement of the problem was presented. This chapter also covered the methodology of the study including the research design, population and sampling, instrumentations, data collection, and data analyses. In addition, the terms specific to this study were defined. Finally, the potential contributions and limitations of the study were discussed.



## CHAPTER TWO: REVIEW OF THE LITERATURE

### Psychological Distress

The term, “psychological distress” generally refers to psychological symptoms such as depression, anxiety, or behavioral dysfunctionality in a normal population (Drapeau et al., 2012). Even though psychological distress has been closely used with other terms such as stress, or biological distress, those terms have somewhat different meanings (Ridner, 2004). Although, psychological distress is related to anxiety or depression (e.g. Jackson & Finney, 2002; Leong & Vaux, 1991; Marum et al., 2014; Nordfjærn et al., 2010), it also involves a reaction to a clear-cut event. For example, Ridner (2004) defined psychological distress as “the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person” (p. 539).

The literature has also considered psychological distress as a combination of depression and anxiety symptoms. For example, Ohayashi and Yamada (2012) referred to psychological distress as a set of symptoms involving depression, anxiety, and perceived stress. Similarly, Mirowsky and Ross (2003) defined distress as “an unpleasant subjective state” (p. 23), which is formed by two major categories: depression and anxiety. Mirowsky and Ross also stated that the symptoms can be seen as both mood and malaise. Mood refers to feelings of depression, sadness, anxiety, or nervousness while malaise refers to somatic symptoms such as headaches or dizziness (Mirowsky & Ross, 2003).

Even though there are different views on the criteria, Drapeau et al. (2012) stated:

Nevertheless, when restricting the review of the scientific literature on studies based on scales that assess psychological distress defined as a state of emotional suffering

characterized by symptoms of depression and anxiety sometimes accompanied by somatic symptoms, several characteristic features emerge.... (p. 123)

Thus, psychological distress is widely accepted as an emotional normal reaction, and non-clinical (Drapeau et al., 2012). Mirowsky and Ross (2003) stated that psychological distress is different than mental disorders because most researches consider psychological distress as an emotional state whereas mental disorders mostly involve behavioral and cognitive impairment.

### Psychological Distress among College Students

Psychological distress is one of the fastest growing problems among college students and young adults (Samuolis et al., 2015). The American College Health Association (ACHA; 2014) reported that 13.5% of college students had depression and 21.8% of college students had anxiety problems. In addition, according to the survey, within the last 12 months, college students reported hopelessness (20.8%), psychological exhaustion (15.8%), feeling overwhelmed (18.4%), lonely (21.7%), sad (23.7%), overwhelming anxiety (19.8%), and seriously considered suicide (5.2%) (ACHA; 2014).

According to data from the National Survey of College Counseling Centers (Gallagher, 2014), 44% of the college students reported severe distress such as depression, anxiety, panic attacks, or suicidal ideation ( $N = 275$ ). In addition, 11% of the students who completed the survey sought individual or group counseling during the year. As these statistics shows, the mental health issues among college students are significant and have been documented in the literature (e.g. Bernhardsdóttir & Vilhjálmsón, 2013; Deasy et al., 2014; Kuo, Arnold, & Rodriquez-Rubio, 2014).

## Lifestyle and Psychological Distress in College Students

Psychological distress is related to other health-related risk behaviors such as alcohol consumption, unhealthy diet, physical inactivity, tobacco smoking, or stress (Deasy et al., 2014). Additionally, psychological distress can be a predictor of other problems such as substance abuse and self-efficacy (Nordfjærn et al., 2010), suicidality (Campos et al., 2014), or self-injury (Martin et al., 2015).

Deasy et al. (2014) examined lifestyle, and its relation to psychological distress and coping among 1,577 nursing/midwifery and teacher education undergraduate students. Participants reported risk behaviors such as alcohol consumption (93.2%), tobacco smoking (17.3%), unhealthy diet (26.3%), and physical inactivity (26.0%). In addition, 41.9% of the participants reported high levels of psychological distress, more frequently among females than males. Deasy et al. (2014) also found correlation between psychological distress and poor diet ( $OR = 1.03$ ), increased consumption of convenience food ( $OR = 1.04$ ), physical inactivity ( $OR = 1.05$ ), and smoking ( $OR = 1.04$ ). Overall, participants fell into two groups: students with risk behaviors ( $n = 733$ ), and students with positive health behaviors ( $n = 379$ ). The results showed that the participants with risk behaviors reported more psychological distress and passive coping (Deasy et al., 2014).

Samuolis et al. (2015) investigated the relationship between identity distress and mental health. The study's results revealed that identity distress was significantly related to anxiety ( $p = .004$ ), depression ( $p = .000$ ), substance abuse ( $p = .027$ ), and other mental health problems ( $p = .007$ ) (p. 69). Additionally, the results also showed that being diagnosed with mental health

problems predicted identity distress related to long-term goals and friendship (Samuolis et al., 2015).

As these studies showed, psychological distress is related to mental health, physical health, or overall well-being (e.g. Deasy et al., 2014; Samuolis et al., 2015). Additionally, the authors identify various predictors of psychological distress such as physical health, substance use, life style, or stress (Deasy et al., 2014; Nordfjærn et al., 2010). Therefore, psychological distress should be a major concern in higher education and college counseling services because it is related to other mental health concerns. Because psychological distress is a major concern for college students and counseling services need to deal with this, more information about the nature of psychological distress and its relation to other factors would be helpful.

### Negative Life Events

Negative life events generally refers to unpleasant, uncontrollable and generally stressful experiences (Jackson & Finney, 2002). Armstrong et al. (2011) defined negative life events as life changes that causes negative changes in the set of living. Armstrong et al. (2011) added that life transition changes cause some important difficulties that challenge people to deal with clinical distress, symptoms of depression, or anxiety. Negative life events can include divorce, financial issues, relationship changes, physical diseases, or loss of loved ones (Marum et al., 2014).

Negative life events have been identified as risk factors for depression, other mental health issues, or decreased well-being (Luhmann, Hofmann, Eid, & Lucas, 2012; Paykel, 2003; Tennant, 2002). It is important to note that subjective perceptions of life events as negative by the individual is a better predictor of distress than rating by an outside evaluators (Jackson &

Finney, 2002). Empirical research with different populations has shown negative life events to be related to various psychological difficulties. In a study with 198 adolescents, negative life events were found to be significantly ( $r = .58$ ) related to depressive symptoms (Murberg & Bru, 2009). Subsequent research with adolescents ( $N = 78$ ) living in the United States examined the relationships between life events and mental health symptoms (Rubens et al., 2013). Results showed that negative life events were a significant predictor of anxiety ( $B = .20$ ) and delinquency ( $B = .45$ ; Rubens et al., 2013).

A longitudinal study with 106 participants (mean age = 25.7,  $SD = 12.7$ ) revealed similar significant correlations between negative life events and depression scores ( $r = 0.24$ ; Moberly & Watkins, 2008). A longitudinal study conducted with 2,252 adults, found negative life events occurrence to be related to increased general distress, anxious arousal, and different levels of anhedonic depression (Wardenaar, Van Veen, Giltay, Zitman, & Penninx, 2014).

Phillips et al. (2015) conducted a five-year longitudinal study to investigate the relationship between negative life events and depression or anxiety. Consistent with previous findings, the results revealed that negative life events significantly predicted depression ( $p = .01$ ) and anxiety ( $p = .01$ ) five years in the future (Phillips et al., 2015). In another longitudinal study, Hochwalder (2013) examined mental ill-health and negative life events of 1,012 women at two points, one year apart. Participants completed questionnaires at the beginning and end of the study. Participants who reported significant negative life events at the beginning of the study (Time 1), were excluded from the overall findings to more clearly identify the effect of negative life events occurring during the study, on participants' mental health. Results indicated that negative life events were significantly related to somatic symptoms ( $p < .001$ ), anxiety and

insomnia ( $p < .001$ ), and marginally related to social dysfunction ( $p < .10$ ) and severe depression ( $p < .10$ ; Hochwalder, 2013).

Rather, there is not difference in being exposed to negative life events for males and females. In a study with 50 single mothers serving in the Tucker and Kelley (2009) found that negative life events had a statistically significant positive relationship with depressive symptoms ( $p < .001$ ) and anxiety ( $p < .001$ ). Therefore, negative life events were a risk factors for women. However, considering the effects of negative life events on individuals by gender, Dalgard et al. (2006) conducted a research to examine if differences in negative life events, vulnerability, and social support can explain gender differences in depression. Dalgard et al. (2006) found a statistically significant relationship ( $p < 0.001$ ) between negative life events and depression for both male and female participants (4,143 men and 4,688 women). Thus, this result showed that women and men are both vulnerable to negative life events, so negative life events do not explain the gender differences in depression.

#### Negative Life Events among College Students

The literature indicated that negative life events are predictor of psychological issues among college students. Beasley et al. (2003) investigated the effects of negative life events on general health, somatization, depression, and anxiety for males and females. Among the 187 university students studied, Beasley et al. (2003) found that negative life events significantly predicted general health for females ( $\beta = .043$ ,  $p < 0.01$ ) and males ( $\beta = .041$ ,  $p < 0.01$ ); depression for females ( $\beta = .046$ ,  $p < 0.01$ ) and males ( $\beta = .039$ ,  $p < 0.01$ ); anxiety for females ( $\beta = .037$ ,  $p < 0.01$ ) and males ( $\beta = .025$ ,  $p < 0.05$ ); and somatization for females ( $\beta = .021$ ,  $p < 0.05$ ) and males ( $\beta = .047$ ,  $p < 0.01$ ). Overall, the results demonstrated a significant relationship

between negative life events and aspects of psychological health (Beasley et al., 2003). More recently, a study conducted with 210 Chinese college students, found that negative life events significantly predicted depression (14.3%), loneliness (22.8%), and social avoidance (8.8%; Li et al., 2013). To wit, negative life events are important factors related to mental health for college student populations.

Regarding cultural differences, Visser et al. (2013) investigated the effects of negative life events on depressive symptoms in a diverse sample of college students ( $n = 386$ ). Consistent with other results, a significant ( $r = .39, p < .001$ ) correlation was found between negative life events and depressive symptoms. Results showed no statistically significant differences on negative life events and depressive symptoms by ethnic groups (Black, Hispanic, White, Asian) or age groups, but female participants were more likely to report depressive symptoms than males ( $t = -5.85, p < 0.001$ ; Visser et al., 2013).

#### Suicide, Violence and Life Events in College Students

Suicidality and suicidal ideations are another problem in the society and more specifically among college students. Hirsch et al. (2007) studied 138 college students and found negative life events positively and significantly ( $r = .29$ ) correlated with suicidal ideation, and negatively correlated ( $r = -.10$ ) with feelings of optimism. Related to suicidal ideation, another study among college students ( $N = 439$ ) showed a significant positive correlation ( $r = .27, p = .01$ ) between negative life events and suicidal behaviors (Rowe et al., 2013). As such, negative life events can predict suicidality.

In addition to suicidality, violence is another problem identified within the literature as being related to negative life events. In a cross-sectional study, with 1294 male college students

in Ethiopia, participants who experienced more negative life events reported significantly ( $p < 0.001$ ) more violent behaviors than participants who reported fewer negative life events (Gelaye et al., 2008). Overall, the aforementioned studies have shown that negative life events are closely related to various mental health problems. The relationship between negative life events and psychological issues is particularly strong for college students.

### Negative Life Events and Psychological Distress

Marum et al. (2014) investigated the relationship between negative life events and psychological distress as an indicator of mental health ( $N = 4,832$ ; mean age = 49.3, SD 17.4). The researchers measured negative life events under seven categories, including self-suffered illness, close relative suffered illness, bereavement, divorce, conflict with friend, neighborhood, loss of employment, or financial difficulties. Results showed that negative life events, with the exception of bereavement, were significantly ( $p < 0.001$ ) related to psychological distress, and explained 22.3% of the variance. Among negative life events, financial strains and conflict with friends, neighbors or family were more strongly associated with psychological distress. The number of negative life events were also associated with psychological distress. Marum et al. (2014) found that all negative life events studied were negatively associated with life satisfaction, with an 11.4% effect size. A similar result was found that negative life events significantly ( $p = .05$ ) predicted psychological distress when demographic and past distress were controlled (Kidwai, Mancha, Brown, & Eaton, 2014). Similar to psychological distress, the number of negative life events were negatively associate with life satisfaction as well (Marum et al., 2014).



Considering the college student population, Leong and Vaux (1991) examined the relationship between life events and distress among 171 students. Leong and Vaux defined distress as the combination of depression, anxiety, and hostility. Results revealed that total ( $r = .21$ ), personal ( $r = .21$ ) and interpersonal ( $r = .24$ ) life event scores were significantly correlated with anxiety, whereas school and illness life event scores were not correlated. In addition, the results showed that total ( $r = .16$ ) and personal ( $r = .22$ ) life event scores were significantly correlated with depression (Leong & Vaux, 1991).

Negative life events have been found to be strong predictors of mental health problems and psychological distress. The literature has shown that for college students, negative life events are still predictor of psychological problems. On the other hand, how individuals cope with negative life events matter regarding the emotional results of such events. That is to say, coping and individual difference are important factors to consider.

#### Individual Differences that Affect the Response to Negative Life Events

Individual differences may affect the impact of negative life events (Dalgard et al., 2006) including how individuals deal with negative life events (Moberly & Watkins, 2008). In studying responses to daily negative life events, Genet and Siemer (2012) found that in 157 psychology students, ruminating thought patterns increased the effect of unpleasant daily events on the level of negative moods. Interestingly, on the days when rumination was low, participants reported less negative mood events even when higher unpleasant daily events were reported (Genet & Siemer, 2012). In addition to the effects of negative life events, individual responses to the negative events mattered for emotional outcomes.

Social support may also be a factor affecting the relationship between negative events and emotions. For example, teacher support for adolescents was found as a buffering factor against negative events that lead to depressive symptoms (Murbereg & Bru, 2009). Similarly, Trask-Tate, Cunningham, and Lang-DeGrange (2010) found that support from mothers moderated the effect of negative life events on symptoms of psychological distress among female African American adolescents ( $n = 136$ ).

There has also been some research on mastery. Sense of mastery generally refers to be able to control over own life and environment (Jang, Borenstein-Graves, Haley, Small, & Mortimer, 2003; Pearlin & Schooler, 1978). The concept of sense of mastery has been recognized in coping process (Schieman & Turner, 1998), and it is generally considered as the moderator between stress and well-being (Skaff, Pearlin, & Mullan, 1996). Marum et al. (2014) found a significant relationship between negative life events and psychological distress, and they found that sense of mastery moderated this relationship. In another study, cognitive hardiness was examined. Cognitive hardiness is an important personality variable, which lessen negative effects of stressful encounters (Beasley et al., 2003; Kobasa & Puccetti, 1983). Cognitive hardiness both include both cognitive and behavioral aspects (Beasley et al., 2003) found to be a moderating factor for females in reducing the effect of negative life events (Beasley et al., 2003).

Further, Kidwai et al. (2014) studied individuals who attended religious services or considered themselves spiritual and found a significant relationship between negative events and distress regardless of participants' religious practices. Kidwai et al. (2014) also found a negative relationship between religious attendance and distress, and spirituality did not predict distress.

However, negative life events had small and significant effects on distress in the low spiritual group whereas had no significant effect on distress in high spirituality group (Kidwai et al., 2014). Therefore, religious attendance might be related decreased levels of distress even if it were a small moderating variable for the relationship between negative events and distress. Thus, religious can be preventive for distress, and can contribute dealing with distress. On the other hand, Rowe et al. (2013) found that overall basic psychological needs significantly moderated the relationship between negative life events and suicidal behaviors.

Because a number of factors affect an individual's reaction to negative life events, it is important to investigate other possible factors that have not yet been studied (Genet & Simer, 2012). On the other hand, positive psychology, as a respectively new approach, has emerged in recent decades. The literature has shown the effectiveness of positive psychology in dealing with life difficulties or mental health issues, and the contributions of positive psychology on well-being (e.g. Dolphin, Steinhardt, & Cance, 2015; Mak et al., 2011; Santos et al., 2013; Wood et al., 2008). The literature has documented the negative relationships between positive psychology variables such as optimism, hope, or gratitude and negative emotional outcomes such as psychological distress, stress, negative mood, depressive symptoms, or anxiety symptoms (i.e., Aspinwall & Taylor, 1992; Lambert et al., 2012; Nes & Segerstrom, 2006; Puskar et al., 1999; Visser et al. 2013). On the other hand, these positive psychology variables are positively related with positive outcomes such as social support, life satisfaction, happiness, or positive coping (Aspinwall and Taylor, 1992; Senf & Liau, 2013; Warren, Eck, Townley, & Kloos, 2015).

In this respect, positive psychology can be valuable to consider how it may take a role to moderate the effects of negative life events. In other words, it is important to consider positive

psychology argument in coping with negative life events. Thus, positive psychology comes up as an approach to deal with negative life issues or contribute to emotional state. In the following parts, brief history of positive psychology, its relation to coping process, and various positive psychology variables are explained.

### Positive Psychology

#### A Brief History of Positive Psychology

Maslow (1954) first introduced the term “positive psychology.” Maslow argued that psychology had been successfully paying attention to the negatives side of life but little on potentials and strengths. Maslow pointed out that positive emotions, such as happiness, calmness, serenity, peace of mind, contentment, and acceptance, had not been seriously studied. Even such universal concepts such as fun, enjoyment, games, and sport had not been researched. “The organizing effects and other good and desirable effects of emotion have been less studied than its disorganizing effects” (Maslow, 1954, p.283).

Since Maslow’s writing, many social psychologists have begun to study positive human traits such as human strengths, effective coping, health, helping and volunteerism, and flow and creativity. However, the efforts were not organized and connected (Diener, 2011), and as Maslow noted, the efforts were different from a traditional approach. Eventually, 40 years after Maslow, Seligman concluded that psychology was “half-baked” and more attention should be given to positive qualities in human nature (Lopez & Gallagher, 2011). The new trend toward positive psychology used new technique and tools to focus on the positive sides of human nature.

## Current Thinking on Positive Psychology

Seligman and Csikszentmihalyi (2000) explained positive psychology on two levels: (a) the subjective level, with three layers: “well-being, contentment (gratitude), and satisfaction in the past; hope and optimism for the future; and flow and happiness in the present.” (p.5), and (b) the group level: making individuals better citizens: responsibility, nurturing, altruism, civility, moderation, tolerance and work ethic. Seligman and Csikszentmihalyi’s message to psychology was to encourage the study of strength and virtue in addition to pathology. To wit, treatment is not only fixing what is broken, but also nurturing strengths (Seligman & Csikszentmihalyi, 2000)

Granello (2013) identified three central points of positive psychology: positive emotions, positive individual traits, and positive institutions. Further, positive psychology aims to help people correct imbalance by focusing on strengths, elements that work best in individuals’ lives. Therefore, positive psychology can be considered as complementary to psychology that is focused on pathology. Lopez and Gallagher (2011) posited that positive psychology served to create a more complete picture of human functioning.

The complementary function of positive psychology is also supported by Seligman who believed that psychology should also focus on human strength and complete the traditional emphasis on healing (Positive Psychology Institute, 2012). Regarding the function of positive psychology, Gable and Haidt (2005) defined positive psychology as “the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups, and institutions” (p. 103). In this definition, the function of positive psychology is described as contributing to optimal functioning.

Throughout the literature, various positive psychology variables have been defined, which may contribute to positive emotions such as well-being, optimism, hope, gratitude, social support, humor, creativity, forgiveness, self-esteem, and others (Lopez & Snyder, 2011; Seligman & Csikszentmihalyi, 2000). Additionally, the literature has documented the function of positive psychology in dealing with life difficulties and the contributions of positive psychology on mental health.

#### Positive Psychology as a way of Coping with Negative Life Events

Coping generally refers to how individuals deal with issues, difficulties, or changes in their lives. There have been several coping models and theories developed; and coping has been examined from different perspectives. Folkman and Moskowitz (2004) defined coping as “the thoughts and behaviors used to manage the internal and external demands of situations that are appraised as stressful” (p. 745) whereas Schwarzer and Knoll (2003) defined coping as “a response to an event or in anticipation of upcoming demands, but it also can involve a proactive approach to self-imposed goals and challenges” (p. 393). In another definition, coping strategies are defined as “responses that are effective in reducing an undesirable ‘load’ (i.e., the psychological burden)” (Snyder, 1999, p. 5)

Coping was explained from the positive psychology perspective leading to the development of the term positive coping (Schwarzer & Knoll, 2003). This new coping approach broadened the understanding of coping (Chen & Cooper, 2014; Folkman & Moskowitz, 2004; Schwarzer & Knoll, 2003). In positive coping, as a new coping perspective, Schwarzer and Knoll (2003) differentiated reactive, anticipatory, preventive, and proactive coping, and explained how each of these coping methods help individuals deal with past, present and future issues.

Reactive coping refers to an effort to deal with stressful situations that occurred in the past or the present (Schwarzer & Knoll, 2003). Reactive coping can occur as either problem-focused, emotions-focused, or social-relation-focused. Dealing with harm or loss, the death of loved ones, or an accident are examples of reactive coping (Schwarzer & Knoll, 2003). Conversely, anticipatory coping is related to a threat, or probable threat, in the near future. Examples of anticipatory coping include dentist appointment, or giving a public speech (Schwarzer & Knoll, 2003).

Preventive coping is a preparation for an uncertain event in the distant future (Schwarzer & Knoll, 2003). The function of preventive coping is to increase resistance for possible, but not certain, stressful encounters that may arise in the future to reduce the negative effect of the event. Job loss, illness, crime, or disaster are examples of events that may precipitate preventive coping (Schwarzer & Knoll, 2003). Lastly, proactive coping relates to “upcoming challenges that are potentially self-promoting” (Schwarzer & Knoll, 2003, p. 394).

In proactive coping, the stressful events occurs in the distant future and the individual does not consider the events as a threat, harm or potential loss. Rather, a negative event is perceived as a personal challenge or an opportunity for growth (Schwarzer & Knoll, 2003). Positive psychology primarily deals with proactive coping (Schwarzer & Knoll, 2003). The benefit of coping is not limited to reducing immediate stress, but also include promoting long-term psychological well-being (Snyder, 1999). Schwarzer and Knoll (2003) discussed the rationale for proactive coping: “coping becomes goal management instead of risk management” (p. 396). The distinctions between these four coping methods provide a new perspective on

coping and expand the view of coping toward goal management and the creation of opportunities and positive experiences from stress (Schwarzer & Knoll, 2003; Chen & Cooper, 2014).

The trends in positive psychology research focus on understanding the nature of coping (Chen & Cooper, 2014). Those themes are explained: (a) the shift from negative words “stress” to more positive and negative emotions, (b) more focus on appraisals in which stress process and emotions flow, (c) “the acceptance of positive emotions” and their effects on the coping process, (d) a focus on proactive coping more than reactive coping, and (e) a better understanding of coping effectiveness (Chen & Cooper, 2014, p. 66). Positive coping and how positive psychology contribute to the coping process have been investigated throughout the literature (e.g., Mak et al., 2011; Santos et al., 2013; Wood et al., 2008).

Santos et al. (2013) reviewed the literature regarding the effects of positive psychology on the treatment of depression and depressive symptoms. The authors reviewed 3400 studies, and only included 28 articles in their review. Results from those studies indicated a relationship between humor and positive emotions. Also, the use of different positive strategies contributed to the treatment of depressive signs and symptoms (Santos et al., 2013). Another finding of the review related to the preventative function of positive psychology was that positive psychology interventions increased well-being, and contributed to resilience and coping that reduced the relapse in depression treatment. Santos et al. (2013) concluded that positive psychology strategies and interventions are potentially effective for the treatment of depression. In addition, Santos et al. (2013) mentioned that positive psychology authors and researchers do not claim that positive psychology is a treatment approach separate from clinical view options, but rather that it should be considered as an integrated approach.



Wood et al. (2008) investigated the direction of the relationship between trait gratitude, perceived social support, stress and depression in two longitudinal studies. Gratitude is identified as an important trait in the positive psychology literature (Lopez & Snyder, 2003; 2011). In the first study, Wood et al. (2008) found that the gratitude trait led to higher levels of both belonging social support ( $r = .10, p < .05$ ) and appraisal social support ( $r = .16, p < .01$ ); with lower levels of stress ( $r = -.21, p < .01$ ) and depression ( $r = -.21, p < .01$ ) among 156 first-year undergraduate students. In the second study, Wood et al. (2008) examined the possible effect of the Big Five Personality traits on the relationship between gratitude, social support, and well-being among 87 first-year undergraduate students. Results showed that gratitude led to higher levels of tangible social support ( $r = .21, p < .05$ ) and appraisal social support ( $r = .28, p < .01$ ); with lower levels of stress ( $r = -.21, p < .01$ ) and depression ( $r = -.24, p < .01$ ; Wood et al., 2008, p. 867). Thus, the results demonstrated that gratitude, which is highly focused in positive psychology, might play an important role in dealing with depression and stress.

Subsequently, Mak et al. (2011) tested the mediating effects of positive views toward self, the world, and the future (positive cognitive triad) on the relationships among resilience, life satisfaction, and depression among 1,419 Chinese college students in Hong Kong. The results showed that trait resilience was significantly and positively correlated with positive views toward self ( $R^2 = .54$ ), the world ( $R^2 = .36$ ), and the future ( $R^2 = .59$ ). In addition, positive views toward self, the world, and the future all significantly ( $p < .001$ ) mediated the relationship among resilience, life satisfaction, and depression (Mak et al., 2011). As results showed, the positive cognitive triad can contribute to resilience and life satisfaction while reducing depression.

Regarding preventive functions of positive emotions, Shankman et al., (2011) examined whether “having high negative emotionality (NE; sadness, fear, anger) and low positive emotionality (PE; anhedonia, listlessness, and lack of enthusiasm)” indicate a risk for depressive symptoms among 329 preschoolers (p. 551). The authors measured positive and negative emotionality in laboratory setting through 12 episodes, and measured biological indicators for depression through asymmetric EEG activities in the frontal and posterior regions of the brain. Shankman et al. (2011) found that at least for girls, high negative emotionality and low positive emotionality had interactive effects on the risk of depression.

Similarly, Lightsey (1994) conducted a longitudinal study with 152 undergraduate students over the course of six weeks to investigate the effects of positive thinking on future depression. Lightsey also investigated the interaction effects of positive automatic thoughts and negative life events. Results revealed that positive thoughts predicted future happiness ( $R = 0.14$ ), and higher positive automatic thoughts buffered the depressive effects of negative life events. Further, negative automatic thoughts ( $R = 0.50$ ) and negative life events predicted future depression ( $R = 0.48$ ; Lightsey, 1994).

Positive emotions might also be related to daily experiences of emotions. Nezlek and Kuppens (2008) collected data from 153 undergraduate students related to emotional regulation (reappraisal or suppression of positive and negative emotions), emotional experience, self-esteem, and psychological adjustment each day for approximately three weeks. Also these outcomes were considered for both active and deactive aspects. Positive active affect was related to feelings of enthusiastic, happy, or active whereas negative positive deactive affect referred to emotions such as calm, satisfied, and relaxed. In addition, negative active effect referred to

emotions such as guilty, nervous, afraid, or angry; and negative deactive affect referred to feelings of sluggish, sad, tired, or bored. Nezlek and Kuppens found that positive reappraisal was associated with higher self-esteem, better adjustment, and more positive emotions; both active and deactive. Conversely, suppression of positive emotions was related to lower self-esteem, less psychological adjustment, less active and deactive positive emotions, and higher active and deactive negative emotions (Nezlek & Kuppens, 2008). Hence, experiencing daily positive emotional regulations can help have more positive emotions, better psychological adjustment and self-esteem.

Sawyer et al. (2009) investigated the relationship between depressive symptoms and negative life events, positive and negative coping strategies, and optimistic thinking style among 5643 adolescents, prospectively over a period of one year. Results showed that depressive symptoms had a positive, statistically significant relationship with negative life events ( $OR = 1.59$ ) and negative coping strategies ( $OR = 1.18$ ); and had a negative and statistically significant relationship to optimistic thinking styles ( $OR = 0.84$ ) and positive coping strategies ( $OR = 0.94$ ). Also, results showed that using negative coping strategies mediated the relationship between depressive symptoms and negative life events (Sawyer et al., 2009). This result showed the effects of positive psychology on coping with negative life events.

Positive psychology expands the view of the coping process by adding a new perspective. More specifically, positive psychology proposes a new way to deal with issues: focusing on positive aspects and strengths, rather than only dealing with negative emotions. As literature has shown, focusing on positive emotions or strengths can reduce negative outcomes and enhance more positive emotions. In addition, a number of empirical studies have shown that positive

psychology contributes to the coping process in various ways. As relevant to coping literature, it is also valuable to consider the Lazarus coping model and positive psychology together. Although controversial, these two concepts can be reviewed again in relation to the new perspectives on positive psychology and the coping process. In the next section, I discuss one of the most important contributions to stress and coping, the work of Richard Lazarus and colleagues.

### Lazarus's Emotion-Focused Coping Style

The concept of coping became popular in the late 1970's, but without a consensus on theory, research, and understanding (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) categorized traditional psychology literature as being derived from animal experimentation or from psychoanalytic ego psychology. Animal models have roots in Darwinism, where coping happens when survival depends on a nervous system response to avoid or escape harm. On the other hand, psychoanalytic ego psychology models define coping as realistic and flexible thoughts and acts to solve problems (Lazarus & Folkman, 1984). However, Lazarus and Folkman (1984) objected to the two traditional views of coping in the literature and proposed their own coping theory.

Lazarus and Folkman (1984) objected to traditional coping models in four ways, "the treatment of coping as a structural trait or style; the failure to distinguish coping from automatized adaptive behavior; the confounding of coping with outcome; and the equation of coping with mastery" (p. 128). In their definition, Lazarus and Folkman aimed to complete the shortcoming of the traditional views of coping. Lazarus and Folkman (1984) defined coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal

demands that are appraised as taxing or exceeding the resources of the person” (p. 141).

According to Lazarus and Folkman, this definition complements the lacks of traditional approaches of coping.

In addition, the coping process is defined as “what the person actually thinks and does in a particular encounter and to changes in these efforts as the encounter unfolds” (Folkman & Lazarus, 1980, p. 224) in stressful situations. As such, coping includes cognitive and behavioral acts to meet, reduce or overcome internal or external demands (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984).

In Lazarus’ coping model, the process begins by evaluating the conditions and sources. First, primary appraisal occurs, which refers to evaluating if what is happening is related to one’s “values, goal commitments, beliefs about self and world, and situation intentions” (Lazarus, 1999, p.75). The first appraisal is made on the situation of stress, and three alternatives, harm/loss, threat, or challenge, emerge. Harm/loss refers to damage that has already occurred, threat is the possibility of damage happening in the future, and challenge is the feeling of struggling with obstacles (Lazarus, 1999). After first appraisal, secondary appraisal occurs, in which one cognitively evaluates own sources to deal with situation (Lazarus, 1999). Secondary appraisal is closely related to primary appraisal. That is to say, when a harm/loss, threat, or challenge is identified during the primary appraisal, the individual then cognitively evaluates the internal and external sources to alleviate the situation (Lazarus, 1966; Lazarus, 1999).

Regardless of the various functions of coping, two common categories exist: (a) problem-focused coping, referring to managing or altering the problem, and (b) emotion-focused coping, referring to adjusting the emotional response (Folkman & Lazarus, 1980; Lazarus & Folkman,

1984). In problem-focused coping, a person gathers information about the situation and initiates actions in order to make changes to the situation (Folkman & Lazarus, 1985; Lazarus, 1999). In emotion-focused coping, an individual tries to regulate emotional responses related to stressful situation, especially when no actions can be taken (Lazarus, 1999). In order to demonstrate problem and emotion-focused coping, Lazarus offered the following examples:

Someone who has cancer must seek the options of different medical specialists about what treatment to select and which surgeon is the best available. This approach seems to illustrate the problem-focused coping function.... Patients, may approach their illness vigilantly or with avoidance. However, after the decision has been made about treatment, say, top opt for surgery, and there is nothing further they can do, an effort may then be made to distance themselves emotionally from the potential dangers that lie ahead.... These patterns of thought and action seem to illustrate the emotion-focused coping function. (p. 114-116)

Emotion-focused coping generally occurs when the person believes that there is nothing to modify to make the challenging, threatening or harmful situation better whereas problem-focused coping generally occurs when it is possible to change the situation (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). However, problem-focused coping and emotion-focused copings may happen together. Folkman and Lazarus (1985) investigated 108 undergraduate students' midterm stress and the students' coping attitudes and styles during the midterm exam at three points such as before the exam, after the exam and before the grades announced. Results showed that 95% of students after the exam, and 94% of students before the grade announcement used both problem-focused and emotion-focused coping together. In another study among 100

adults, male and female participants used both problem-focused and emotions-focused coping in more than 98% of 1,332 stressful situations (Folkman & Lazarus, 1980).

Coping is also associated with emotions. Traditional approaches have considered the relationship between coping and emotions unidirectional; emotions motivate or interfere the coping (Folkman & Lazarus, 1988). Animal models of coping suggest that coping occurs as a response to emotions (Folkman & Lazarus, 1985; Folkman & Lazarus, 1988). However, this relationship might be more complicated, whereby emotions and coping affect each other.

Folkman and Lazarus (1988) found that coping in stressful situations was related to a change of emotions. In addition, the relationship between emotions and coping was available for both problem-focused and emotions-focused coping. However, the effect of coping on emotions was positive for some forms of coping such as planful problem solving, whereas it was negative for other forms of coping, such as confrontive coping (e.g., “stood my ground and fought for what I wanted”) or distancing (e.g., “didn't let it get to me—refused to think about it too much”) (Folkman & Lazarus, 1988, p. 468).

### Emotion-focused coping

People use emotion-focused coping strategies to preserve hope and optimism, to refuse facts, or to protect themselves from the worst case (Lazarus & Folkman, 1984). Emotion-focused coping does not aim to change actual situations or events, rather its goal is to reduce negative emotions. Lazarus and Folkman (1984) mentioned that cognitive coping strategies serve as reappraisal. Lazarus and Folkman also added that reappraisals are not all negative; rather some are positive such as positive comparisons or wresting value from negative situations.

In the literature, many, but not all, emotion-focused coping strategies include cognitive processes (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) shared some cognitive strategies such as “avoidance, minimization, distancing, selective attention, positive compassions, and wresting positive value from negative events” (p. 150).

Overall, coping is important to deal with stressful encounters including negative life happenings. Many negative life happenings cause unpleasant emotions such as psychological distress. As explained in Lazarus’ coping model, coping may occur as problem-focused or emotion-focused, but the goal of coping is to make the situation better or reduce unpleasant emotions. Especially in situations in which change is not probable, reducing negative emotions is pivotal, which is the purpose of emotion-focused coping.

Therefore, it is important to investigate the possible factors, which may affect the relationship between life events, emotion and the coping process (Genet & Simer, 2012). In this respect, positive psychology can be valuable to consider. Positive psychology traits might be important factors to reduce the effects of negative life events. Positive psychology comes up as an approach to deal with negative life issues or contribute to one’s emotional state. Positive psychology components such as hope (Visser et al., 2013), optimism (Hirsch et al., 2007), gratitude, social support, humor, or others might be moderating factors in this sense.

#### Reconsidering Positive Psychology in Lazarus’s Emotion-Focused Coping

As previously mentioned, the literature has shown that positive psychology can contribute to the coping process in different ways (see Santos et al., 2013; Sawyer et al., 2009). In addition to the contributions of positive psychology variables to coping process, a term of positive coping was offered as a new model to coping literature, within which proactive coping



was emphasized (Snyder, 1999). Regarding coping, Lazarus' coping model (Lazarus & Folkman, 1984) is prominent in coping literature, so it is valuable to consider when studying coping.

The utility of each model has been the subject of much discussion in the literature (Lazarus, 2003a; 2003b; Rand & Snyder, 2003). Lazarus (2003b) claimed that positive psychology did not contribute anything new to the field of psychology. He believed positive psychology to be "in danger of being just another one of the many fads that come and go in our field" (p. 93). Lazarus identified four weaknesses of positive psychology (2003a; 2003b). First, Lazarus challenged the use of cross-sectional research methodology, instead of longitudinal research, used in positive psychology studies. Second, Lazarus believed that positive psychology's binary categorization of emotions, as positive or negative, was an inappropriate and limiting. Third, Lazarus stated that positive psychology inappropriately emphasized cohort differences, while largely ignoring individual differences. Finally, Lazarus expressed concerns related to emotion measurement problems within positive psychology. Overall, Lazarus discredited positive psychology by identifying weaknesses within the literature that limited the utility of positive psychology, and provided some arguments against positive psychology (Lazarus, 2003a, 2003b).

Rand and Snyder (2003) responded to Lazarus' claims against positive psychology. Rand and Snyder considered Lazarus' arguments under two themes, "constructive" and "an obloquy at a person or group" (p. 148). The authors stated that positive psychology was not a new approach, rather it had emerged after years of work in the field of psychology. "There really is nothing new under the sun; however, the theories that reside within the rubric of positive psychology are innovative ways of looking at human characteristics" (Rand & Snyder, 2003, p. 150). Rand and

Snyder conceded some of Lazarus' criticisms related to methodological issues; but added that longitudinal studies were being conducted, and the need of more studies had already been discussed (see Rand & Snyder, 2003).

Since the debate between Lazarus (2003a, 2003b) and Rand and Snyder (2003), various studies have examined positive psychology and its effects on coping process (Dolphin et al., 2015; Mak et al., 2011; Santos et al., 2013; Shankman et al., 2011). Thus, we can consider the aforementioned debate as a new perspective to better understand coping and positive psychology. Rather than continuing the debate, it may be more valuable to reconsider positive psychology in Lazarus' coping model as a means of integrating positive psychology into the coping process.

According to Lazarus' model (Lazarus, 1999), the coping process begins with first appraisal, in which an individual evaluates a situation and decides whether it involves harm/loss, threat or challenge. Then, the individual evaluates own internal or external sources to deal with the stress, which refers to second appraisal (Lazarus, 1999). During both appraisals, positive psychology variables can be used to enrich the process in favor of the person.

There might be a theoretical connection between the challenge in the first appraisal of Lazarus' coping model (Lazarus, 1999), and proactive coping of positive coping (Schwarzer & Knall, 2003). In both coping models, the event has not happened yet, but proactive coping focuses more on accepting the obstacles as opportunities for growth. In this sense, let's say, as a trait or state, a person can appraise or re-appraise the situation from a proactive coping perspective in the first stage of Lazarus coping to enhance the coping process. Therefore, the

evaluation of the process from the first appraisal may provide results that are more favorable for the individual.

Another point to make connecting positive coping and Lazarus coping relates to emotions. As a part of coping, emotions-focused coping refers to situations in which people are not able to make changes, but still strive to regulate emotions by maintaining hope and optimism, or refusing the situation (Lazarus & Folkman, 1984). As emotions emphasized in Lazarus' coping model, the literature has also documented the importance of positive emotions in the coping process (e.g., Nezlek & Kuppens, 2008; Mauss et al., 2011; Santos et al., 2013; Shankman et al. 2011).

Therefore, it is possible that positive psychology is important in both problem-focused coping and emotion-focused coping. In problem-focused coping, positive psychology variables can help during appraisal. "Positive reappraisal, for example, involves a reinterpretation of the event in terms of benefits to one's values, beliefs, and goals" (Folkman & Moskowitz, 2004, p. 766). Similarly, the role of positive emotions has been emphasized in coping and emotion-focused coping (Chen & Cooper, 2014; Folkman & Moskowitz, 2004; Stanton, Sullivan, & Austenfeld, 2011).

All in all, the literature has emphasized different positive psychology variables that can contribute to coping process. Even though various positive psychology variables have been studied in the literature, optimism, hope, and gratitude have received the most attention (Lopez & Snyder, 2003; 2011). As such, this study aims to investigate the effects of these positive psychology variables on the relationship between negative life events, psychological distress, and life satisfaction.

## Positive Psychology Variables

The relationship between negative life events and various psychological issues, including psychological distress, has been explained so far. On the other hand, as documented within the literature, how an individual deals with negative life events affects the relationship between life events and psychological outcomes. Various factors affect this coping process. In this sense, considering positive psychology variables can be useful. Therefore, in this section, three positive psychology variables, optimism, hope, and gratitude, will be examined due to their importance in the literature.

### Optimism

The definitions of optimism is related to one's expectations for the future (Carver & Scheier, 2003). Therefore, because the spectrum of optimism and pessimism rest on expectations, theory and research on this topic over the decades have been based on "human motives and how motives become expressed in behavior" (Carver & Scheier, 2003, p. 75). Differences in levels of optimism or pessimism affect how individuals cope with adversity (Carver et al., 2011). While optimistic people expect good things to happen when they face difficulty, pessimistic people expect bad things (Carver et al., 2011), affecting how they deal with life issues. Regarding emotional outcomes, optimistic people generate more positive feelings when they face difficult situations, resulting in more well-being for optimistic people (Carver et al., 2011). Conversely, difficulty generates more negative feelings for pessimistic people (Carver et al., 2011) and may reduce sense of well-being.

Throughout the literature, optimism has been related to different psychological variables. Optimism was significantly and negatively correlated with depressive symptoms among 624

adolescents ( $r = -.545, p < .001$ ; Puskar et al., 1999). Stanojevic et al. (2014) found that optimism was significantly ( $p < .01$ ) correlated with self-efficacy ( $r = .34$ ), social support ( $r = .17$ ), proactive coping ( $r = .43$ ), depression ( $r = -.39$ ), and life satisfaction ( $r = .20$ ) among 495 high school graduates. In an earlier study, Chang (1998b) found that optimism significantly ( $p < .001$ ) affected both depressive symptoms ( $R^2 = .03$ ) and life satisfaction ( $R^2 = .08$ ). In addition, the interaction of optimism and stress significantly affected both depressive symptoms ( $R^2 = .02, p < .001$ ) and life satisfaction ( $R^2 = .01, p < .05$ ; Chang, 1998b).

Optimism has been identified as another important concept related to coping. In a meta-analysis, Nes and Segerstrom (2006) reviewed 50 articles ( $k = 26$  for cross-sectional and  $k = 24$  for prospective studies) in order to assess the effect of dispositional optimism on coping. The total sample of these studies included 11,629 ( $n = 6,372$  for students). The results of this meta-analysis revealed that dispositional optimism was correlated with “approach coping ( $r = .17$ ) and problem-focused coping ( $r = .13$ ) and negatively correlated with avoidance coping ( $r = -.21$ ) and emotion-focused coping ( $r = -.08$ )” (Nes & Segerstrom, 2006, p. 244).

Aspinwall and Taylor (1992) examined the effects of dispositional optimism on adjustment to college and coping among 672 (394 women, 277 men, and 1 unreported) freshman college students in a longitudinal study. The results showed that dispositional optimism had a positive direct effect on adjustment to college ( $R^2 = .32, p < .001$ ). Additionally, dispositional optimism predicted more use of active coping ( $R^2 = .19, p < .01$ ) and less use of avoidant coping ( $R^2 = -.13, p < .01$ ). Aspinwall and Taylor (1992) also found that dispositional optimism predicted greater positive mood ( $R^2 = .33, p < .001$ ), and less negative mood ( $R^2 = -.26, p < .001$ ). A similar longitudinal study by Brissette et al. (2002) examined the relationship between

optimism and social support and adjustment among 89 first year college students (46 women and 43 men). The results revealed that optimism was related to both perceived support ( $r = .28, p < .01$ ) and friendship network size ( $r = .24, p < .01$ ), and was a significant predictor of changes in perceived support ( $\beta = .30, t(87) = 3.03, p < .01$ ). Findings also showed a negative association between optimism and stress ( $\beta = -.22, t(87) = 2.08, p < .05$ ) and depression ( $\beta = -.29, t(87) = 2.86, p < .01$ ).

As explained previously, Lazarus model takes an important place in coping literature. Regarding the relationship between optimism and Lazarus coping model, Chang (1998a) investigated the relationship between optimism, and primary and secondary appraisal in Lazarus' coping among 726 college students. In the study, Chang found that optimism was not related to primary appraisal, but was significantly associated with secondary appraisal ( $r = .21, p < .001$ ). Regarding coping, optimistic participants experienced significantly more ( $p < .00008$ ) cognitive restructuring and significantly less ( $p < .00008$ ) wishful thinking, self-criticism, and social withdrawal. Additionally, optimists had significantly more ( $p < .00008$ ) life adjustment, and significantly less ( $p < .00008$ ) depressive and physical symptoms (Chang, 1998a).

Considering psychological distress, Warren et al. (2015) investigated the relationship between optimism, religious coping, subjective well-being, and perceived psychological distress among 533 individuals with psychiatric disabilities. The results showed that optimism was positively and significantly correlated with positive religious coping ( $r = .20, p < .01$ ) and life satisfaction ( $r = .39, p < .01$ ). Further, optimism was negatively and significantly correlated with negative religious coping ( $r = -.26, p < .01$ ) and perceived psychological distress ( $r = .42, p < .01$ ). Optimism partially mediated the relationship between positive and negative religious

coping and life satisfaction. Optimism also mediated the relationship between positive and negative religious coping and perceived psychological distress (Warren et al., 2015).

In addition to the relationships between optimism and different psychological variables and coping, optimism can also play a mediating role in the coping process. Hirsch et al. (2007) investigated the moderating effects of optimism on the history of negative life events and suicidal ideation. Hirsch et al. (2007) found significant correlations ( $p < .001$ ) between optimism and hopelessness ( $r = -.70$ ) and depressive symptoms ( $r = -.59$ ). The results also revealed that optimism moderated the relationships between history of negative life events and suicidal ideations and attempts (Hirsch et al., 2007).

### Hope

The concept of hope is generally grouped in two categories: emotion-based and cognition-based (Lopez et al., 2003). Even though there are overlaps between emotion-based and cognition-based hope definitions, cognition-based hope refers more to the thoughts or beliefs that motivate the person for the future (Lopez et al., 2003). Snyder et al. (1991) proposed a new, more inclusive model including both cognitive and emotions aspects of hope. Snyder's et al. theory has received considerable attention over the last decade (Lopez et al., 2003). This theory defines hope as "a cognitive set that is based on a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals)" (Snyder et al., 1991, p. 571).

Lopez et al. (2003) also mentioned that according to this model, a goal may be short-term or long-term, but more important is how much the individual values the goal. In this model, two constructs emerge: pathways and agency. Pathways relates to generating alternative routes to

deal with difficulties or future whereas agency refers the motivation to move through these routes. “Pathways thinking entails the perceived ability to generate routes connecting the present to this imagined future.... Agency is the motivational component in hope theory, and it is the perceived ability to use pathways to reach desired goals” (Rand & Cheavens, 2011, p. 324).

The literature has shown that hope is related to various psychological outcomes. In one such study, Michael and Snyder (2005) examined the relationship between hope, cognitive processing (rumination), and adjustment to bereavement among 158 college students. The results showed that hope was not correlated with rumination ( $r = -.048, p = .547$ ), post traumatic growth ( $r = .11, p = .17$ ), or benefit item ( $r = .09, p = .28$ ). However, hope was significantly correlated with depression ( $r = -.22, p = .006$ ), anxiety ( $r = -.30, p < .001$ ), negative effect ( $r = -.25, p = .002$ ), and positive effect ( $r = .45, p = < .001$ ; Michael & Snyder, 2005). Similarly, Peleg et al. (2009) found that dispositional hope was significantly and negatively correlated with depression ( $r = -0.59, p < 0.000$ ); and that both hope agency ( $r = -0.49, p < 0.000$ ) and pathways ( $r = -0.57, p < 0.000$ ) sub-scales were significantly and negatively correlated with depression. In addition, the interaction of hope and the positive psychology variable, optimism, together explained the 40.6% accounted variance in depression identified by the study (Peleg et al., 2009).

In one aforementioned study with college students ( $N = 368$ ), Visser et al. (2013) found that trait hope was significantly and negatively correlated with depressive symptoms ( $r = -0.52, p < 0.001$ ) and negative life events ( $r = -0.23, p < 0.001$ ). In addition, trait hope played a moderating role, as high trait hope weakened the relationship between negative life events and depressive symptoms (Visser et al., 2013). Hope can also be a helpful variable for patients who have physical illness. Rawdin, Evans, and Rabow (2013) investigated the relationship between



hope, depression, anxiety, well-being and pain among 78 patients who were receiving oncological treatment. The results revealed that hope was negatively and significantly ( $p < .001$ ) related with depression ( $r = -0.56$ ) and anxiety ( $r = -0.48$ ) while positively related to well-being ( $r = 0.52$ ). Rawdin et al. (2013) also found that there was a negative relationship between hope and pain. As these studies showed, there is a negative relationship between hope and undesirable psychological outcomes.

At the same time, the researchers documented that hope can be helpful during the adjustment process and generate desirable outcomes. Marques et al. (2015) investigated the relationship between level of hope and psychological and school functioning among 682 middle school students. Marques et al. identified participants as high hope group (mean hope score top 10%), low hope group (mean hope score bottom 10%), and average hope group (mean hope score middle). Extremely high hope group had significantly ( $p < .001$ ) differed from average hope and low hope groups on school engagement, life-satisfaction, self-worth, and mental health (Marques, et al., 2015). In an earlier study with 194 cancer patients (Rustoen et al., 2010), hope was found to be significantly and positively correlated with life satisfaction ( $r = 0.55, p < .001$ ), and significantly and negatively correlated with psychological distress ( $r = -0.30, p < .001$ ). Hope also mediated the relationship between health status and psychological distress (Rustoen et al., 2010).

Canty-Mitchell (2001) investigated the relationship between hope, life change events and self-care among 202 adolescents. Results from the study found no correlation between hope and life change events. However, a positive and significant correlation was identified between hope and self-care ( $r = .40, p < .001$ ). In addition, multiple regressions showed that hope significantly

predicted higher self-care ( $\beta = .3642, p < .001$ ), and accounted for 20.3% variance of change in self-care (Canty-Mitchell, 2001). Even though various studies documented the positive relationship between hope and desirable outcomes, and negative relationship between hope and undesirable outcomes, there is still a need to explore the effects of hope on the coping process.

### Gratitude

Gratitude is a feeling of “sense of wonder, thankfulness, and appreciation” about a received benefit, and it can be interpersonal or transpersonal such as toward God or nature (Watkins et al., 2011). Historically, across cultures, the experience of gratitude has been considered as a desirable human characteristic; contributing to well-being for individuals and societies (Emmons et al., 2003). Fitzgerald (1998) considered gratitude as an emotion and explained three components of this feeling: “(1) a warm sense of appreciation for somebody or something, (2) a sense of goodwill toward that individual or thing, and (3) a disposition to act which flows from appreciation and goodwill” (p.120).

Gratitude has been identified as an important variable of positive psychology (Snyder et al., 2003; Watkins et al., 2011; Wood et al., 2008). Positive psychology considers gratitude as a human strength (Emmons et al., 2003). Watkins et al. (2011) defined state gratitude as “an individual experiences the emotion gratitude (i.e., state gratitude) when they affirm that something good has happened to them and they recognize that someone else is largely responsible for this benefit” (p. 438). Conversely, trait gratitude refers to gratitude as a characteristic of an individual. If a person has high trait gratitude, he or she experiences gratitude more easily and more frequently than others (Watkins et al., 2011).

The literature has documented that gratitude is negatively related with negative emotional outcomes such as depression, stress, negative affectivity (i.e., McCullough et al. 2002; Watkins et al., 2003; Wood et al., 2008). Additionally, the literature has shown the positive relationship between gratitude and positive emotions such as life satisfaction, positive affectivity, dispositional empathy, hope, optimism, social support, and happiness (i.e., McCullough et al., 2002; Watkins et al., 2003). Further, Lambert et al. (2012) examined the direct and indirect relationships between gratitude and depressive symptoms in a series of eight studies. Four of the studies identified a significant direct relationship between gratitude and depressive symptoms ( $\beta = -0.10, p < .01$  for  $n = 746$ ;  $\beta = -0.08, p < .01$  for  $n = 739$ ;  $\beta = -0.13, p < .01$  for  $n = 753$ ;  $\beta = -0.18, p < .01$  for  $n = 261$ ).

In addition, gratitude-related activities and interventions can possibly enhance positive emotions and decrease negative emotions. In an experimental study, Senf and Liao (2013) examined the effects of positive interventions on happiness and depressive symptoms ( $n = 122$ ). Regarding gratitude intervention, the experimental group was given instructions to complete two tasks for one week: (1) writing a letter of thanks to someone to whom they felt grateful, and (2) writing at least three items that went well during the day. Results revealed that at the post-intervention assessment, gratitude intervention group ( $\beta = 0.15, t(110) = 2.26, p = 0.03$ ) had higher level of happiness than control group, but at the follow-up assessment in one month, there was no significant difference between control and gratitude experiment group on a measure of happiness. In addition, regarding the effects of gratitude on depressive symptoms, the experimental group was not significantly different from the control group at the post-intervention assessment, but differed significantly ( $\beta = -0.24, t(112) = -2.62, p = 0.01$ ) at the follow-up

intervention assessment. Overall results showed that the gratitude intervention partially affected happiness and depressive symptoms (Senf & Liao, 2013). As the literature has demonstrated, gratitude is a potential variable in order to deal with life difficulties, but there is still a lack of research on gratitude and coping.

### Summary

Chapter Two provides the theoretical frameworks that are constructs of interest for this study. The chapter reviews the theoretical background of psychological distress, its relation to negative life events, coping with negative events, positive psychology and variables. The chapter also reviews the empirical studies that are related to each constructs.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

This chapter describes the methodology of the study. The purpose of the study was to examine the relationships between negative life events and psychological distress and life satisfaction. This study also aimed to examine the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. This chapter will explain methodology including: (a) the research questions and the hypotheses, (b) the research model, (c) the research design, (d) the population, (e) the sampling, (f) the instrumentation, (g) the data collection, and (h) the data analyses.

### Research Questions and Hypotheses

The study addressed the following research questions:

Research Questions One: How well do negative life events, as measured by the Life Experiences Survey (LES; Sarason et al. 1978), predict psychological distress, as measured by the Kessler Psychological Distress Scale (K10; Kessler et al., 2002)?

Research Question Two: How well do negative life events, as measured by the Life Experiences Survey (LES; Sarason et al. 1978), predict life satisfaction, as measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985)?

Research Question Three: To what degree does optimism, as measured by the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on psychological distress, as measured by the Kessler Psychological Distress Scale (K10; Kessler et al., 2002)?

Research Question Four: To what degree does optimism, as measured by the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on life satisfaction, as measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985)?

Research Question Five: To what degree does hope, as measured by the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on psychological distress, as measured by the Kessler Psychological Distress Scale (K10; Kessler et al., 2002)?

Research Question Six: To what degree does hope, as measured by the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on life satisfaction, as measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985)?

Research Question Seven: To what degree does gratitude, as measured the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on psychological distress, as measured by the Kessler Psychological Distress Scale (K10; Kessler et al., 2002)?

Research Question Eight: To what degree does gratitude, as measured the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002), moderate negative life events', as measured by the Life Experiences Survey (LES; Sarason et al. 1978), prediction on life satisfaction, as measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985)?

The corresponding null hypotheses for each questions will be:

Null Hypothesis One: Negative life events do not predict psychological distress.

Null Hypothesis Two: Negative life events do not predict life satisfaction.

Null Hypothesis Three: Optimism does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Four: Optimism does not moderate negative life events' prediction on life satisfaction.

Null Hypothesis Five: Hope does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Six: Hope does not moderate negative life events' prediction on life satisfaction.

Null Hypothesis Seven: Gratitude does not moderate negative life events' prediction on psychological distress.

Null Hypothesis Eight: Gratitude does not moderate negative life events' prediction on life satisfaction.

### Research Model

The study aimed to examine the relationships between negative life events and psychological distress and life satisfaction. A model corresponding to this purpose of this study was developed to assist the researcher (see Figure 1 in Chapter One). This study also aimed to examine the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. Three conceptual models corresponding to these purposes were developed as well (see Figure 2 - 4 in Chapter One)

## Research Design

The current study was nonexperimental research using a correlational research design. “The basic design in correlational research is very simple, involving nothing more than collecting data in two or more variables for each individual in a sample and computing a correlation coefficient” (Gall et al., 2007, p. 323). Many important research in education have been conducted in correlational design, and recent studies have included more advance correlational techniques to explain relationships between several variables (Gall et al., 2007).

In the current study, the relationships between the constructs were examined in correlational aspects. The quality of a correlational study are related to the complexity of design and analytic techniques, and if the design is led by theoretical guidelines (Gall et al., 2007). The current study tested constructs through conceptual models, which were theoretically justified.

Correlational studies enables to examine multiple variables in a study, either singly or in combination. Another advantage of correlational studies is that the results provide information about the degree of the relationships between the constructs examined (Gall et al., 2007). However, although correlational studies provide information about cause-and-effect relationship between the constructs examined, it is generally hard to make strong conclusion about causality (Gall et al., 2007).

In this study, the independent variable was negative life events, and the dependent variables were psychological distress and life satisfaction. The moderating variables were determined as optimism, hope, and gratitude. The study examined the relationship between the independent variable (negative life events) and the dependent variables (psychological distress and life satisfaction). The study also examined the effects of moderating variables (optimism,



hope, and gratitude) on the relationship between the independent and the dependent variables. Participants were asked to complete six surveys : (a) the Life Experiences Survey (LES; Sarason et al. 1978), (b) the Kessler Psychological Distress Scale (K10; Kessler et al., 2002), (c) the Satisfaction with Life Scale (SWLS; Diener et al., 1985), (d) the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), (e) the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991), and (f) the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002).

The study implemented structural equation model (SEM) to analyze the models that claimed negative life events prediction of psychological distress and life satisfaction, and the moderating effects of optimism, hope, and gratitude on the relationship between negative life events, psychological distress, and life satisfaction. SEM is a sophisticated statistical model that can be used to analyze the hypothesized causal relationship between variables (Gall et al., 2007). “Structural equation modeling (SEM) uses various types of models to depict relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model hypothesized by the researcher” (Schumacker & Lomax, 2010, p. 2). Because SEM enables variables to be measured with more reliability and validity, it can test the causal relationships more powerfully (Gall et al., 2007).

Schumacker and Lomax (2010) listed four reason why SEM is popular and useful. First, even though basic statistics are not able to analyze multiple variables, SEM can. Thus, a researcher can test more complex theories. Second, a measurement’s validity and reliability are important factors, and SEM takes measurement error into account in the analysis. Third, SEM was developed over the last few decades, and has become better able to test advanced theories. For example, SEM can analyze group differences in theoretical models and analyze the main and

interaction effects among variables. Finally, SEM software programs have become widely available to use (Schumacker & Lomax, 2010).

### Population

Gall et al. (2007) defined two types of populations in quantitative research: target and accessible populations. Target population refers to “all the members of a real or hypothetical set of people, events, or objects to which researchers wish to generalize the results of their research” (p. 166) whereas “accessible population” refers to all individuals or objects which realistically can be reached for sampling (Gall et al., 2007). The target population for this study was college students in the U.S. As explained in Chapter 2, the literature documented that college students face various negative life events, and negative life events predict several psychological issues among college students (Beasley et al., 2003; Hirsch et al., 2007; Leong & Vaux, 1991; Marum et al., 2014; Rowe et al., 2013; Visser et al., 2013). Because the literature has shown a relationship between negative life events and various aspects of psychological distress among college students, it makes theoretical sense to target this population. However, given that there are more than 20,550,000 individuals enrolled to undergraduate programs in US (US Census, 2012), it was not logistically probable to include all undergraduate college students as a population for this study. Thus, an accessible population was identified to include college students in a university located in Southeastern U.S. In particular, the students from a large Southeastern university formed the accessible population for this study. Due to the size of the student populations at this university, a sampling procedure was implemented to collect study data.

## Sampling

Criterion sampling was utilized in this study. In this sampling method, the research reaches participants who met the criteria set for a study (Gall et al., 2007). The following criteria was set for this study: (a) to be undergraduate students, (b) to be older than 18 years or older. Thus, for this study, the college students at a Southeastern university who were eligible for the study were contacted and asked to participate. Regarding the number of participants, it is usual to garner the largest sample size possible in this kind of quantitative study (Gall et al., 2007). However, there are several mathematical procedures which guide sample size. The right sample size is necessary in order to be able to reject null hypotheses “when in fact it is false, and to determine that likely value of population parameters (typically, the population mean and standard deviation)” (Gall et al., 2007, p. 176). Thus, a G power analyses was conducted to determine needed sample size with the possibility of a small effect size. Before data collection procedure, the researcher used [www.danielsoper.com](http://www.danielsoper.com) website, which is recommended by Schumaker and Lomax (2010) for determining minimum required sample size. According to this investigation, a minimum sample of 526 participants was needed in order to be able to reject null hypotheses at a small effect size (.1), and high power (.8) with six latent variables and 108 observed variables at the probability level of  $p < .05$  (Free Statistics Calculators, 2006).

## Data Collection

The researcher obtained the permission from the University of Central Florida’s Institutional Review Board (IRB) to conduct the study before the data collection. The IRB approval letter, protocol # SBE-16-11936, is included in Appendix A. The researcher collected the data by distributing a pack of surveys including the Demographic Questionnaire, the Life

Experiences Survey (LES; Sarason et al. 1978) the Kessler Psychological Distress Scale (K10; Kessler et al., 2002), the Satisfaction with Life Scale (SWLS; Diener et al., 1985), the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991), and the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002). The researcher distributed the pack of surveys via in-person and online. After obtaining IRB approval, the researcher contacted 28 undergraduate instructors from several departments for permission to access potential participants in class setting. Sixteen of the instructors allowed visiting 23 classes and introducing the study in class time in-person. The researcher collected data at the beginning or at the end of the class time in 17 classes. In the remaining six classes, because of the time restriction, the researcher distributed the surveys first, and collected one week later. One instructor taught semi-online class, in which the researcher distributed the surveys to the students present in the classroom. For the rest of the students in that particular class, the class instructor shared the Qualtrics link with them online. In addition, the researcher collected data face-to-face at the university library on one occasion. Totally 938 students were invited to participate to the study. Overall, out of 938 invited, 775 undergraduate students participated in the study, yielding an 82.6% response rate. However, after statistical screening process, the final usable data was 738, yielding a 78.6% response rate.

### Instrumentation

In this study, six instruments were utilized. Those instruments measured negative life events (independent variable), optimism, hope, and gratitude (moderating variables), psychological distress and life satisfaction (dependent variables). In addition, a Demographic Questionnaire was utilized in order to gather information about participants' gender, age,

ethnicity, department and major, year in college, relationship status, and socio economic status. Each participant was given a complete packet which includes all instruments for a single collection of data.

### Demographic Questionnaire

The Demographic Questionnaire was created by the researcher to gather participants' demographic information. The Demographic Questionnaire was a self-administered instrument, which sought information about participants' basic demographic characteristics (e.g. gender, age, ethnicity, major etc.)

### Negative Life Events

To measure negative life events, the Life Experiences Survey (LES; Sarason et al. 1978). The LES is a self-reporting instrument that includes a list of totally 60 specific events, including 10 events specifically for undergraduate students, and three blank spaces for participants to indicate other events. When a participant has experienced an event within the last 12 months, he or she indicated the effects of the event from extremely negative (-3) to extremely positive (+3). The LES provides a total score of negative life events by summing the negative effects of the events, and negative life event events total score is presented as a negative value. A total score of positive life events is calculated by summing the positive effects of the events, and positive life events total score provides a positive value. The researcher received the permission from the original author via email to use the LES in this study.

Sarason et al. (1978) examined the test-retest reliability of the LES with a five ( $N = 34$ ) to six ( $N = 58$ ) week interval. Test-retest reliability coefficients for positive life events score were

.19 and .53 ( $p < .001$ ). Coefficients for negative life events score were .56 and .88 ( $p < .001$ ).

Even though reliability coefficients were relatively low due to sample sizes, they showed that the LES was moderately reliable. In addition, test-retest reliability coefficient may underestimate the instruments like the LES because participants' life events experiences may change over five or six-week time frame (Sarason et al. 1978).

Sarason et al. (1978) investigated the relationships between the LES and several psychological variables. Sarason et al found negative life events score significantly correlated to trait anxiety ( $r = .29, p < .01$ ) and state anxiety ( $r = .46, p < .001$ ) whereas positive life events score was not correlated to trait or state anxiety ( $N = 100$ ). Similarly, among 82 college students, negative life events score was found significantly ( $r = .24, p < .05$ ) correlated to anxiety.

Regarding depression, the LES negative score was significantly correlated to depression scores of college student participants ( $N = 64$ ; Sarason et al., 1978). In addition, relationships between the LES positive, negative, and total scores and social desirability nonsignificant. Thus, this results indicated that the LES was free from the influence of social desirability (Sarason et al., 1978).

### Optimism

For the purposes of this study, the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) was used to measure optimism. The LOT-R is a brief research instrument which measures dispositional optimism. LOT-R includes 10 items consisting of three positively worded items (e.g., "In uncertain times, I usually expect the best"), three negatively worded items (e.g., "If something can go wrong for me, it will"), and four filler items (e.g., "It's easy for me to relax"). LOT-R uses a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*).

Negatively worded items are reversed when scoring, and filler items are not included to the total score. LOT-R provides a total score that is the sum of positively worded items and reversed negatively worded items. The researcher received the permission from the original author via email to use the LOT-R in this study

The Life Orientation Test (LOT) was initially developed by Scheier and Carver (1985), then revised by Scheier et al. (1994). The initial assessment included four positively worded, four negatively worded, and four filler items. Scheier et al. (1994) removed two items from the original LOT. Scheier et al. (1994) reported that the LOT-R was significantly and positively correlated with the original LOT ( $r = .95$ ). A preliminary study of the LOT-R that included 2,055 undergraduate college students (622 women, 1,394 men, and 39 who did not indicate their gender), found a Chronbach's alpha of .78, suggesting an acceptable level of internal consistency (Scheier et al., 1994).

Regarding stability of the LOT-R, Scheier et al. (1994) examined the test-retest reliability with another sample of undergraduate students. Scheier et al. found .68 for four months ( $N = 96$ ), .60 for 12 months ( $N = 96$ ), .56 for 24 months ( $N = 52$ ), and .79 for 28 months ( $N = 21$ ). Thus, these results indicated that "LOT-R is fairly stable across time" (Scheier et al., 1994, p. 1075). In addition, regarding convergent and discriminant validity, the LOT-R was not found to be significantly correlated with self-master, trait anxiety, self-esteem, or neuroticism for men or women (Scheier et al., 1994).

## Hope

To measure the trait hope, the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991) was used. The ADHS was developed based on the definition of hope "as a cognitive set

that is composed of a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals)” (Snyder et al., 1991, p. 1991). Consistent with the definition, the ADHS has two subscales, agency and pathways.

The ADHS includes 12 items, four items on the agency subscale (e.g., “I’ve been pretty successful in life”), four items on the pathways subscale (e.g., “I can think of many ways to get out of a jam”), and four fillers (e.g., “I feel tired most of the time”). Participants are asked to rate each item using the following 4-point scale: 1 (*definitely false*), 2 (*mostly false*), 3 (*mostly true*), and 4 (*definitely true*). The ADHS provides a total score that is the sum of eight items measuring hope; the scores range from eight to 32. Furthermore, the ADHS can provide scores for the agency and the pathways subscales separately (Snyder et al., 1991). In this study, the ADHS total score was used. ADHS is freely available to use for research purposes, so there was no need to seek for author permission.

Snyder et al. (1991) reported Cronbach’s alphas ranging from .74 to .84 for the total score, from .71 to .76 for the agency subscale, and from .63 to .80 for the pathways subscales. Therefore, the ADHS has an acceptable level of the internal consistency, overall. Additionally, Snyder et al. (1991) reported that the ADHS was administered to undergraduate students and people in psychological treatment. The results expectedly showed that the average hope score of the clinical sample was lower than the average hope score of undergraduate students (Snyder et al., 1991).

### Gratitude

The Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002) was used to measure gratitude. GQ-6 was initially developed as 39 positively and negatively worded items. Based on



a preliminary study by McCullough et al. (2002), six items were retained that strongly loaded one factor and assessed gratitude. GQ-6 assesses individuals' experiences and expression of appreciation and gratefulness in daily life. GQ-6 includes six items assessing gratitude intensity, frequency, span, and density facets. Examples of questionnaire items are "I feel thankful for what I have received in life", "I sometimes feel grateful for the smallest things", or "I am grateful to a wide variety of people." Participants responded to items on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). After reversing the values on negatively worded items, all items were summed up, and a total score could be reached; higher scores indicated higher levels of gratitude (McCullough et al., 2002). The researcher received the permission from the original author via email to use the GQ-6 in this study

McCullough et al. (2002) reported the internal consistency of GQ-6 as an alpha of .82. McCullough et al. (2002) also found that GQ-6 was positively correlated ( $p < .05$ ) with life satisfaction ( $r = .53$ ), vitality ( $r = .46$ ), happiness ( $r = .50$ ), optimism ( $r = .51$ ), hope agency ( $r = .67$ ), and hope pathways ( $r = .42$ ). Furthermore, GQ-6 was negatively correlated ( $p < .01$ ) with negative effect ( $r = -.43$ ), and envy ( $r = -.39$ ; McCullough et al., 2002).

### Psychological Distress

The Kessler Psychological Distress Scale (K10; Kessler et al., 2002) was implemented to measure psychological distress. The K10 measures non-specified psychological distress. Kessler et al. (2002) developed an initial pool of 612 items. After systematic reviews and expert feedback, the authors reduced the instrument to 45 items that reflect the Diagnostic and Statistical Manual of Mental Disorders, 3<sup>rd</sup> Edition, revised criteria of diagnosis of major depression, generalized anxiety disorder and positive affect domain. The 45 items were

administered in a mail pilot survey with 1,403 participants who were 18 years of age or older. After the pilot study, 28 items remained, and four additional questions were added. The new pool of 32 items were administered in a telephone pilot study with 1,574 participants who were older than 25 years old. Finally, 10 items were retained that loaded one factor (Kessler et al., 2002).

The K-10 has 10 items assessing symptoms experienced within the previous 28 days (4 weeks). Items are scored using a 5-point Likert scale ranging from 1 (*none of the time*) to 5 (*all of the time*). Examples of items include “Did you feel tired out for no good reasons?”, “Did you feel that everything was an effort?”, or “Did you feel so sad that nothing could cheer you up?” (Cite with page number). The K-10 provides a total score that is the sum of all items. The scores range from 10 to 50, where higher scores indicate a higher level of psychological distress (Kessler et al., 2002). The researcher received the permission from the original author via email to use the K-10 in this study

Kessler et al. (2002) reported a strong internal consistency for K-10 ( $\alpha = 0.93$ ). As a result, K-10 has been used in the World Health Organization’s (WHO) World Mental Health surveys in 30 countries, and the K-10 interview form has been translated into more than 35 languages (National Comorbidity Survey, 2005). In addition, K-10 has been used in numerous studies that sampled college student populations (e.g., Abdulghani, AlKanhal, Mahmoud, Ponnampuruma, & Alfaris, 2011; Leahy et al., 2010; Stallman, 2010).

### Life Satisfaction

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) was used to measure participants’ levels of life satisfaction. “Among the various components of subjective well-being, the SWLS is narrowly focused to assess global life satisfaction and does not tap related

constructs such as positive affect or loneliness” (Diener et al., 1985, p. 71). The SWLS has five positively worded items, which are scored from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS provides a total score ranging from five to 35, where higher scores indicate more satisfaction with one’s life (Diener et al., 1985). SWSL is freely available to use for research purposes, so there was no need to seek for author permission.

In the initial phase, Diener et al. (1985) developed 48 self-report items, which were positively and negatively worded questions assessing one’s life satisfaction. The 48 items were administered to 176 undergraduate students. The results revealed three factors: positive affect, negative affect, and satisfaction. The positive and negative affect items were removed leaving 10 items loading one factor, satisfaction. Due to the semantic similarities of some items, only five items were retained. After the first implementation, the retained five items were re-administered to 76 undergraduate students from the first sample. Diener et al. (1985) reported that the coefficient alpha was 0.87, and test-retest correlation coefficient was 0.82.

After the first study and having desirable psychometrics of the SWLS, Diener et al. (1985) conducted another study with 163 undergraduate students to investigate the relationship between SWLS and other measures of subjective well-being, and personality. The results revealed a moderately strong correlation between SWLS and other subjective well-being measures, with the exception of Affect Intensity Measure (AIM), which measures of the intensity of emotional experiences. From the study, SWLS were correlated with self-esteem ( $r = .54$ ), symptom checklist ( $r = -.41$ ), neuroticism ( $r = -.48$ ), emotionality ( $r = -.25$ ), activity ( $r = .08$ ), sociability ( $r = .20$ ), and impulsivity ( $r = -.03$ ).

## Data Analysis

The collected data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 21.0 to calculate descriptive statistics, correlations, and reliabilities.

Confirmatory factor analyses was conducted using Statistical Analysis System (SAS) version 94 in order to evaluate the factor loading between observed and latent variables. After these analyses, Mplus Version 7 was used to test theoretical models to explore the relationship between latent variables.

In the first theoretical model (see Figure 1 in Chapter 1) proposed in this study, negative life events was exogenous variable and psychological distress and life satisfaction were endogenous variables. In the conceptual interaction conceptual models (see Figure 2 - 4 in Chapter 1), negative life events was exogenous variable, and psychological distress and life satisfaction were endogenous variables whereas optimism, hope, and gratitude were moderating variables, respectively.

## Limitations

One of the limitation of the study was research design. This study was designed as non-experimental correlational research. Even though correlational studies can enable the researcher make initial exploratory investigation, the researcher cannot make a strong conclusion about the cause and effect (Gall et al., 2007). Another limitation of the study was the self-reporting data collection procedure. There could be some biases of the participants' responses to questionnaires. Another limitation was that participants responded to all questionnaires in a single session, so there could be other factors affecting their responses such as having an extraordinary day in which data collection took place. Thus, it could not be totally possible to

examine the relationship between variables. The population of the study was another limitation. The study aimed to collect data from undergraduate students from a large Southeastern university. Therefore, generalizability of the results may be limited to college and university populations with similar geographic characteristics. In addition, even if there are strong psychometric properties of one instrument, there are always errors in measurement that is also be a limitation to this study.

### Summary

In this chapter, the research methodology of the study was explained. The purpose of the study was to examine the negative life events' prediction of psychological distress and life satisfaction. The study also aimed to examine moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. As related to the purposes of the study, one main effect model, and three interaction models were developed. The design of the study was a non-experimental, correlational research. The population of the study was identified as undergraduate students in the U.S. whereas the sample was recruited from a large Southeastern university in Florida using a criteria sampling method. In order to measure latent variables, six instruments were implemented, and SEM was used to analyze data.

## **CHAPTER FOUR: RESULTS**

This chapter presents the results of analysis of the research. The purpose of the study was to investigate the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfactions.

Research questions:

1. How well do negative life events predict psychological distress?
2. How well do negative life events predict life satisfaction?
3. To what degree does optimism moderate negative life events' prediction on psychological distress?
4. To what degree does optimism moderate negative life events' prediction on life satisfaction?
5. To what degree does hope moderate negative life events' prediction on psychological distress?
6. To what degree does hope moderate negative life events' prediction on life satisfaction?
7. To what degree does gratitude moderate negative life events' prediction on psychological distress?
8. To what degree does gratitude moderate negative life events' prediction on life satisfaction?

Null hypotheses:

1. Negative life events do not predict psychological distress.
2. Negative life events do not predict life satisfaction.

3. Optimism does not moderate negative life events' prediction on psychological distress.
4. Optimism does not moderate negative life events' prediction on life satisfaction.
5. Hope does not moderate negative life events' prediction on psychological distress.
6. Hope does not moderate negative life events' prediction on life satisfaction.
7. Gratitude does not moderate negative life events' prediction on psychological distress.
8. Gratitude does not moderate negative life events' prediction on life satisfaction.

The research analysis tested four theoretical models. Model one was the main effects model of the predictor variable that negative life events predict psychological distress and life satisfaction (see Figure 5). Model one aimed to answer research questions one and two. Model two was the optimism interaction model that optimism moderates negative life events' prediction of psychological distress and life satisfaction (see Figure 6). Model two aimed to answer questions three and four. Model three was the hope interaction model that hope moderates negative life events' prediction of psychological distress and life satisfaction (see Figure 7). Model three aimed to answer questions five and six. Model four was the optimism interaction model that gratitude moderates negative life events' prediction of psychological distress and life satisfaction (see Figure 8). Model four aimed to answer questions seven and eight.

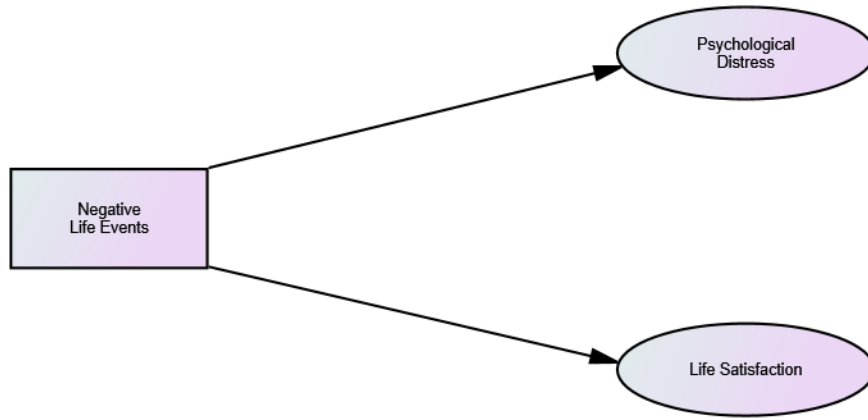


Figure 5: Main effects model of predictor variable

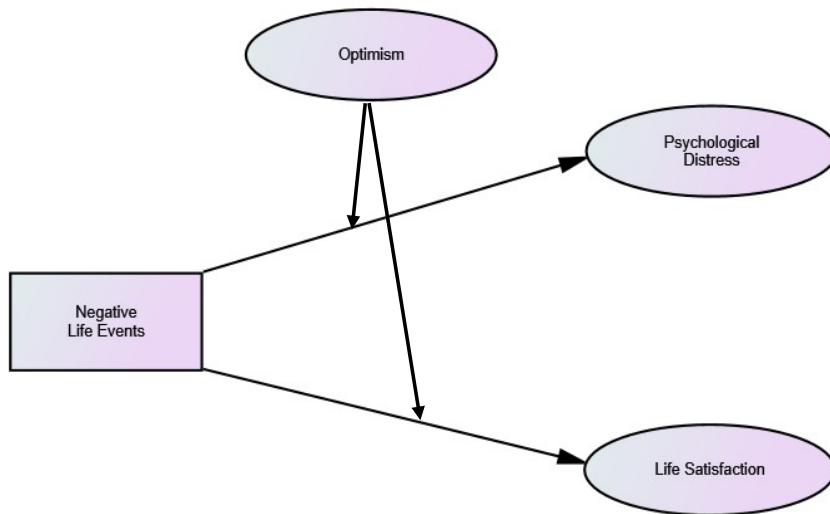


Figure 6: Optimism interaction conceptual model



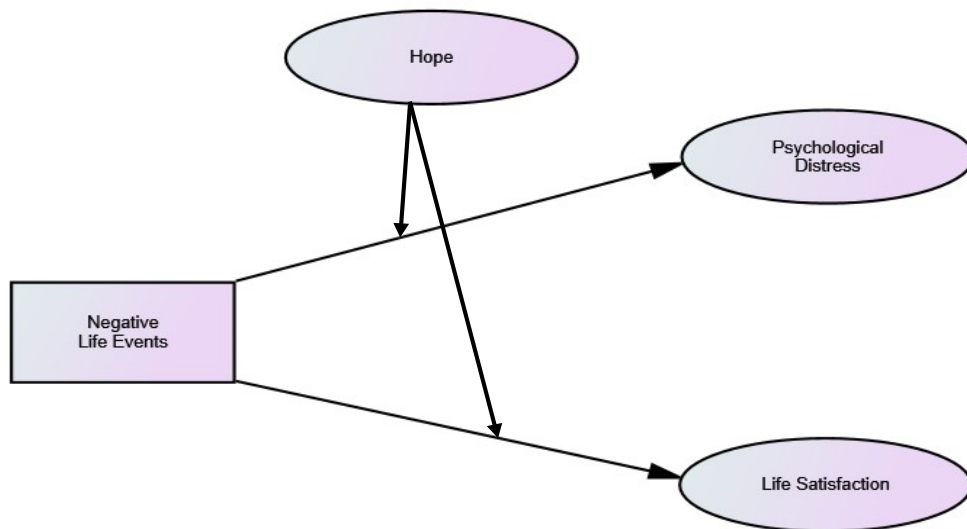


Figure 7: Hope interaction conceptual model

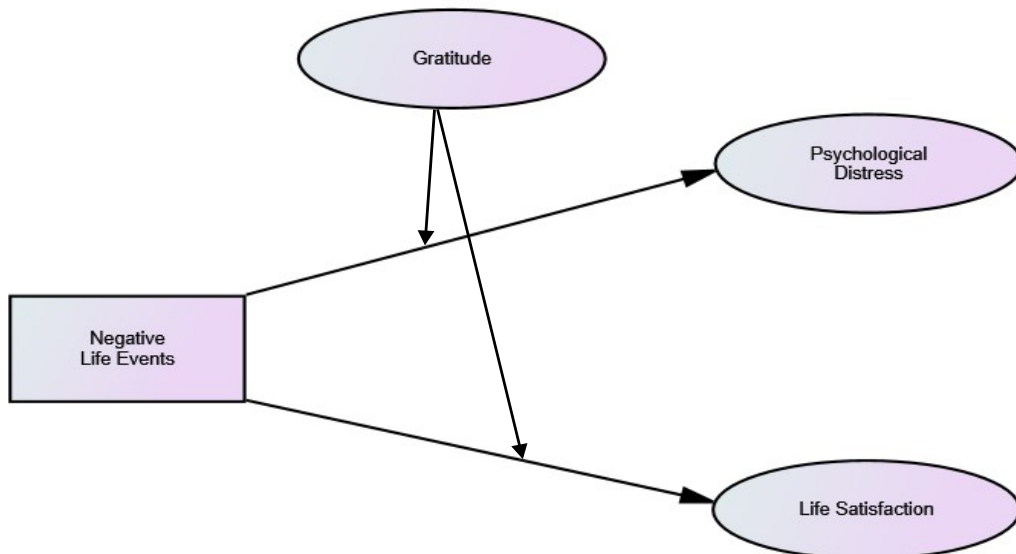


Figure 8: Gratitude interaction conceptual model

The research questions were analyzed using structural equation modeling (SEM), which examines the relationship between various observed variables and tests a theoretical model hypothesized by the researcher (Schumacker & Lomax, 2010). This chapter presents the following results: (a) sampling and data collection, (b) descriptive statistics, and (c) the research questions data analyses.

### Sampling and Data Collection

The target population of this study included undergraduate students in the United States. The literature has documented that college students experience various negative life events (Beasley et al., 2003; Hirsch et al., 2007; Visser et al., 2013). The literature has also documented that negative life events predict various psychological issues, such as depression, other mental health issues, or decreased well-being (Luhmann et al., 2012; Paykel, 2003; Tennant, 2002). Therefore, it theoretically makes sense to investigate negative life events among undergraduate students.

There are more the 20,550,000 individuals enrolled to undergraduate programs in the U.S. (US Census, 2012). Because it is not practically possible to target all undergraduate students in the U.S., the identified accessible population included undergraduate students enrolled at a large Southern university in the U.S. A criteria sampling procedure was implemented to reach participants. “Criterion sampling involves the selection of cases that satisfy an important criterion” (p. 184), and this method of sampling is practical in educational studies (Gall et al., 2007). The inclusion criteria for participants in this study were to be enrolled an undergraduate class and be older than 18 years old. It is generally suggested to garner larger sample size possible in social sciences (Gall et al., 2007). However, before data collection procedure, the

researcher used [www.danielsoper.com](http://www.danielsoper.com) website, which is recommended by Schumaker and Lomax (2010) for determining minimum required sample size. According to this investigation, a minimum sample of 526 participants was needed in order to be able to reject null hypotheses at a small effect size (.1), and high power (.8) with six latent variables and 108 observed variables at the probability level of  $p < .05$  (Free Statistics Calculators, 2006).

The researcher collected the data by distributing a pack of surveys including the Demographic Questionnaire and six instruments via in-person and online. After obtaining IRB approval, the researcher contacted 28 undergraduate instructors from several departments for permission to access potential participants in class setting. Sixteen of the instructors allowed to visit 23 classes and introduce the study in class time in-person. The researcher collected data at the beginning or at the end of the class time in 17 classes. In the remaining six classes, because of the time restriction, the researcher distributed the surveys first, and collected one week later. One instructor taught semi-online class, in which the researcher distributed the surveys to the students present in the classroom. For the rest of the students in that particular class, the class instructor shared the Qualtrics link with them online. In addition, the researcher collected data face-to-face at the university library on one occasion.

#### Response Rate

The total number of students from the classes visited was 925. Of them, 890 (96.2%) students were invited in person to participate in the study; 739 (83%) of these students completed the data collection instruments. In one semi-online class, 35 students were invited online, and 23 (65.7%) of them participated in the study. Thus, out of 890 students invited to participate, 762 (85.6%) students participated the study. In addition, the researcher asked 13 undergraduate

students to participate the study in the university library and all of these students completed the instruments. Overall, out of 938 invited, 775 undergraduate students participated in the study, yielding an 82.6% response rate. However, after removing the cases having more than 50% missing information and outliers, the final usable data was 738, yielding a 78.6% response rate.

### Descriptive Data Results

#### Demographic Information

The following demographic data analyses were presented based on the total number of participants ( $N = 738$ ; see Table 2). The number of female ( $n = 364$ , 49.3%) and male ( $n = 371$ , 50.3%) participants are similar. Two (.3%) participants reported gender as other than male, female, and transgender. On the other hand, only one participant (.1%) did not indicate gender information.

The majority of participants were between the ages of 18 – 25 ( $n = 664$ , 90%), followed by those between the ages of 26 – 33 ( $n = 48$ , 6.5%), those between the ages of 34 – 41 ( $n = 12$ , 1.6%), those between the ages of 42 – 49 ( $n = 5$ , .7%), those between the ages of 50 – 57 ( $n = 1$ , .1%), and those between the ages of 58 – 65 ( $n = 1$ , .1%). Only seven participants (1%) did not provide any age information. The ethnicity of participants was 406 (55%) White, 177 (24%) Hispanic/Latino(a), 56 (7.6%) African American, 56 (7.6%) Asian, 3 (.4%) American Indian/Alaska Native, 3 (.3%) Hawaiian Native/Pacific Islander, and 36 (4.9%) other. Only one participant did not provide the ethnicity information. Regarding the year in college, the majority of participants were juniors ( $n = 311$ , 42.1%), followed by seniors ( $n = 221$ , 29.9%), sophomores ( $n = 151$ , 20.5%), freshmen ( $n = 33$ , 4.5%), and other ( $n = 20$ , .3%). Only two (.3%) participants did not provide their year in college. Reported relationship status of the participants were 381

(51.6%) single, 292 (39.6%) in a relationship, 34 (4.6%) married/partnered, 23 (3.1%) engaged, 4 (.6%) divorced, 1 (.1%) separated, and 2 other (.3%). Only one participants (.1%) did not provide the relationship status.

Table 2: Demographic Variables

Variables	Total ( <i>n</i> )	Percentage
<b>Gender</b>		
Female	364	49.3%
Male	371	50.3%
Transgender	0	0%
Self-identity	2	.3%
Missing	1	.1%
<b>Age</b>		
18 - 25	664	90.0%
26 – 33	48	6.5%
34 – 41	12	1.6%
42 – 49	5	.7%
50 – 57	1	.1%
58 – 65	1	.1%
Missing	7	1%
<b>Ethnicity</b>		
White, Non-Hispanic	406	55%
Asian	56	7.6%
Hispanic/Latino(a)	177	24%
African American	56	7.6%
American Indian/Alaska Native	3	.4%
Hawaiian Native/Pacific Islander	3	.4%
Other	36	4.9%
Missing	1	.1%
<b>Year in college</b>		
First Year	33	4.5%
Sophomore	151	20.5%
Junior	311	42.1%
Senior	221	29.9%
Other	20	2.7%
Missing	2	.3%
<b>Relationship</b>		
Single	381	51.6%
In a relationship	292	39.6%
Engaged	23	3.1%
Married/Partnered	34	4.6%
Divorced	4	.6%
Separated	1	.1%
Other	2	.3%
Missing	1	.1%

### Self-Reported Social Economic Status

Participants were asked to indicate their perceived socio economic status by answering the question, “How would you rate your socio economic status?” on a scale ranging from one (*very bad*) to five (*very good*). The measure of central tendency for the participants’ responses to this item was:  $M = \dots$ ;  $SD = \dots$ ; range 1-5. Frequencies results of this item are presented in table 3.

Table 3: Self-Reported Socio Economic Status

Scale	Total ( <i>n</i> )	Percentage
1 (Very bad)	10	1.4%
2	59	8%
3	328	44.4%
4	271	36.7%
5 ( <i>Very good</i> )	67	9.1%
Missing	3	.4%

### Negative Life Events

The Life Experience Survey (LES; Sarason et al., 1978) was used to measure undergraduate students’ negative life events. The LES is a self-reporting instrument that includes a list of totally 60 specific events, including 10 events specifically for undergraduate students, and three blank spaces for participants to indicate other events. When a participant has experienced an event within the last 12 months, he or she indicated the effects of the event from extremely negative (-3) to extremely positive (+3). The LES provides a total score of negative

life events by summing the negative effects of the events, and a total score of positive life events by summing the positive effects of the events. Negative life events total score is presented as a negative value. In this study, only negative life events total score was used. To avoid any confusion, the researcher transformed negative values of negative life events total scores to positive values, so a higher score indicate more negative events within the last 12 months. Because an item of the LES can be used for the negative life event total score or the positive life event total score, the Cronbach's alpha was not calculated. The measures of central tendency for enrolled undergraduate students' negative life events as measured by LES are presented in Table 4.

Table 4: The Life Experiences Survey Negative Life Events Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
Life Experiences Survey	8.48	8.41	0 - 66	6.0	3.0

### Optimism

For the purposes of this study, the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) was used to measure optimism. The LOT-R consisted of 10 items; three positively worded (e.g., “In uncertain times, I usually expect the best”), three negatively worded (e.g., “If something can go wrong for me, it will”), and four fillers (e.g., “It's easy for me to relax”). The LOT-R used a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). For the purposes of calculating respondents' LOT-R total scores, response values for negatively worded items were reversed while the filler items were not omitted. The LOT-R provided a total score that was the sum of positively worded items and reversed negatively worded items.



Chronbach’s alpha ( $\alpha$ ), assessing the internal consistency for LOT-R, was .805, which indicated an ideal level of reliability (Pallant, 2010). The measures of central tendency for enrolled undergraduate students’ optimism, as measured by the LOT-R, are presented in Table 5.

Table 5: The Life Orientation Test-Revised Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
Life Orientation Test-Revised	15.32	4.23	2 – 24	16.0	16.0

Hope

The Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991) was used to measure hope. The ADHS included 12 items; four using the agency subscale (e.g., “I’ve been pretty successful in life”), four using the pathways subscale (e.g., “I can think of many ways to get out of a jam”), and four fillers (e.g., “I feel tired most of the time”). Participants were asked to rate each item using the following 4-point scale: 1 (*definitely false*), 2 (*mostly false*), 3 (*mostly true*), and 4 (*definitely true*). The ADHS provided a total score that was the sum of the eight items measuring hope; the scores ranged from eight to 32. Furthermore, the ADHS provided scores for the agency and the pathways subscales separately (Snyder et al., 1991). Cronbach’s alpha ( $\alpha$ ), assessing the internal consistency for ADHS total score, was .779, which was an acceptable level of internal consistency. Cronbach’s alpha ( $\alpha$ ) was .694 for the agency subscale and .674 for the pathway subscale. Even though Cronbach’s alpha levels for the subscales were poor, it is common to have lower Cronbach values for the instruments having fewer than 10 items (Pallant, 2010). In addition, only the ADHS total score was used in this study. The measures of central tendency for enrolled undergraduate students’ hope as measured by the ADHS are presented in Table 6.

Table 6: The Adult Dispositional Hope Scale Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
Adult Dispositional Hope Scale	25.6	2.95	16 – 32	25.0	24.0

### Gratitude

The Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002) was used to measure gratitude. The GQ-6 included six items assessing facets of gratitude: intensity, frequency, span, and density. Participants responded to items on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). After reversing the values on negatively worded items, all items are summed, and a total score was reached in which higher scores indicated higher levels of gratitude (McCullough et al., 2002). Cronbach’s alpha, assessing the internal consistency for the GQ-6, was .777 in this study, which indicated an acceptable level of internal consistency (Pallant, 2010). The measures of central tendency for enrolled undergraduate students’ gratitude as measured by the GQ-6 are presented in Table 7.

Table 7: The Gratitude Questionnaire-6 Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
Gratitude Questionnaire-6	36.24	4.74	21 – 42	37.0	42.0

### Psychological Distress

In order to measure psychological distress, the Kessler Psychological Distress Scale (K-10; Kessler et al., 2002) was used. The K-10 measured non-specified psychological distress. The K-10 had 10 items assessing symptoms experienced within the previous 28 days (4 weeks). Items were scored using a 5-point Likert scale ranging from 1 (*none of the time*) to 5 (*all of the time*). The K-10 provided a total score that was the sum of all items. The scores range from 10 to 50, where a higher score indicated a higher level of psychological distress (Kessler et al., 2002). Cronbach's alpha, assessing the internal consistency for the K-10, was .890 in this study, indicating an acceptable level of internal consistency (Pallant, 2010). The measures of central tendency for enrolled undergraduate students' psychological distress as measured by K-10 are presented in Table 8.

Table 8: The Kessler Psychological Distress Scale Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
Kessler Psychological Distress Scale	20.19	7.05	10 – 44	18.0	17.0

### Life Satisfaction

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) was used to measure participants' levels of life satisfaction. SWLS had five positively worded items, which were scored from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS provided a total score ranging from five to 35, where a higher score indicated higher levels of life satisfaction (Diener et al., 1985). Cronbach's alpha, assessing the internal consistency for SWLS, was .853 in this study, indicating a good level of internal consistency (Pallant, 2010). The measures of central

tendency for enrolled undergraduate students' life satisfaction as measured by the SWLS are presented in Table 9.

Table 9: The Satisfaction with Life Scale Measure of Central Tendency

Instrument	<i>M</i>	<i>SD</i>	Range	<i>Mdn</i>	Mode
The Satisfaction with Life Scale	24.93	6.03	6 – 35	26.0	30.0

### Data Analyses for the Primary and the Exploratory Research Questions

The following section presents the results of the data analyses for the research questions. All data were analyzed using *Statistical Package for Social Sciences* (SPSS, Version 22), Statistical Analysis System (SAS, Version 94) for confirmatory factor analyses of latent variables and the overall measurement model, and Mplus (Version 7) for the main effects model and the interaction models. An alpha level of .05 was set to ensure a 95% confidence level that the variance of the actual relationship between the variables was not due to sampling error.

### Data Screening

A data screening procedure was conducted to check the accuracy, missing values, and potential outliers to determine if the data were proper to analyze. First, a missing value analyses was conducted using SPSS to determine the pattern of missing values. Tabachnick and Fidell (2013) explained three missing data patterns: (a) missing completely at random (MCAR), (b) missing at random (MAR), or (c) missing not at random (MNAR). Based on the missing data analyses, Little's MCAR test ( $\chi^2 = 9.28$ ,  $df = 6$ ,  $p = .158$ ) showed that the missing values in the data set were completely random. However, since it was uncommon in social sciences that

missing data was completely random (Osborne, 2013), the researcher removed eight cases having more than 50% missing information of the overall instruments and demographic information. The original sample size was 775, and after exclusion of eight cases, the reduction of sample size was only 1%. In addition, missing data analyses revealed that all of the variables had less than 5% missing values. Because less than 5% of data points were missing with a large sample size (over 200), the issue of missing values was less problematic (Tabachnick & Fidell, 2013). Thus, the researcher decided that there were no reasons to replace or transform any variables.

Potential outliers were determined by examining standardized scores ( $z$  scores) of the total score of the LES negative life event score, the K-10 (psychological distress), the SWSL (life satisfaction), the LOT-R (optimism), the ADHS (hope), and the GQ-6 (gratitude). Among continuous variables, cases with standardized  $z$  scores exceeding 3.29 ( $p < .001$ , two-tailed test) were potential outliers (Tabachnick & Fidell, 2013). Based on the examination, a total of 29 (24 outliers for LES, one for LOT-R, three for GQ, and one for K-10) outliers were identified and removed from the analyses. Therefore, a total of 36 (4.6%) cases, out of 775, (eight cases missing more than 50% information and 29 outlier cases) were removed from the analyses. Ultimately, total reduction of sample size was less than 5%, and the final sample consisted of 738 cases.

### Statistical Assumptions

The normality and linearity of the data, and multicollinearity between latent variables were examined to meet the assumptions of SEM. To test normality, skewness and kurtosis of the measured variables were examined (see Table 10). All absolute values of skewness were less

than 2.58, which indicated a symmetrical distribution of the data. Regarding the kurtosis values, with the exception of three of the measured variables, all values of kurtosis were less than 2.58 as well. Even though kurtosis of negative life events total score, item GQ-5, and KES-10 were more than 2.58, because the sample size was large (more than 200), it was considered to be inconsequential. Regarding the effects of the sample size on the normality, Hair, Black, Babin, and Anderson (2010) mentioned that as non-normal variables become less concern for the studies with large sample size.

Table 10: Normality of the data

Item	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Negative Life Event (LES)				
Negative life events total	8.48	8.41	2.12	7.14
Optimism (LOT-R)				
LOTR-1	2.31	1.10	-0.29	-0.74
LOTR-2	2.36	0.98	-0.41	-0.24
LOTR-3	2.82	0.93	-0.60	-0.02
LOTR-4	2.48	1.02	-0.42	-0.39
LOTR-5	2.56	1.02	-0.38	-0.44
LOTR-6	2.81	0.88	-0.42	-0.27
Hope (ADHS)				
AHS-1	3.17	0.56	-0.15	0.83
AHS-2	3.27	0.62	-0.40	0.05
AHS-3	3.22	0.58	-0.16	0.02
AHS-4	3.16	0.61	-0.24	0.24
AHS-5	3.15	0.55	0.02	0.32
AHS-6	3.33	0.65	-0.69	0.55
AHS-7	3.20	0.57	-0.10	0.19
AHS-8	3.08	0.57	-0.43	1.77
Gratitude (GQ-6)				
GQ-1	6.58	0.70	-2.03	5.60
GQ-2	6.32	0.93	-1.56	2.27
GQ-3	6.01	1.27	-1.63	2.58
GQ-4	5.94	1.13	-1.26	1.62
GQ-5	6.31	0.92	-1.63	3.15
GQ-6	5.07	1.68	-0.61	-0.66
Psychological Distress (K10)				
KES-1	2.72	1.08	0.28	-0.44
KES-2	2.82	0.96	0.19	-0.16
KES-3	1.73	0.97	1.20	0.72
KES-4	1.69	0.93	1.36	1.41
KES-5	2.39	1.05	0.37	-0.56
KES-6	1.76	0.99	1.24	0.84
KES-7	1.79	1.04	1.17	0.51
KES-8	2.35	1.15	0.50	-0.59
KES-9	1.50	0.86	1.81	2.79
KES-10	1.44	0.88	2.16	4.22
Life Satisfaction (SWLS)				
SWL-1	4.77	1.50	-0.70	-0.25
SWL-2	5.24	1.35	-0.84	0.36
SWL-3	5.31	1.41	-0.90	0.27
SWL-4	5.17	1.42	-0.79	0.11
SWL-5	4.44	1.86	-0.24	-1.17

Multicollinearity was tested by examining the correlations between the six latent variables (see Table 11). Correlations ranged between .053 and -.492. Because no correlation was high ( $> .90$ ), there were no problems with multicollinearity among the variables, so the data met the assumption of multicollinearity (Tabachnick & Fidell, 2013).

Table 11: Correlation Matrix of Latent Variables

	LESNeg	LOT-R	ADHS	GQ-6	K10	SWLS
LESNeg	1					
LOT-R	-.176**	1				
ADHS	-.053	.455**	1			
GQ-6	-.064	.423**	.432**	1		
K10	.352**	-.492**	-.289**	-.294**	1	
SWLS	-.266**	.442**	.461**	.454**	-.428**	1

Note: LESNeg: Negative life events total score; LOT-R: Optimism; ADHS: Hope; GQ-6: Gratitude; K10: Psychological distress; SWLS: Life satisfaction

\*\*  $p < .01$

### Analyses of Research Questions

The purpose of this study was to investigate the relationship between negative life events, psychological distress and life satisfaction (research questions 1-2). This study also aimed to investigate the moderating effects of optimism (research questions 3-4), hope (research questions 5-6), and gratitude (research questions 7-8) on negative life events' prediction of psychological distress and life satisfaction. More specifically, the relationship between negative life events,



psychological distress, and life satisfaction were analyzed by testing the main effects model (see Figure 5). Moderating effects of optimism, hope, and gratitude were analyzed by testing the interaction models separately (see Figure 6 for optimism; see Figure 7 for hope; see Figure 8 for gratitude). Research questions were analyzed using SEM.

SEM is generally referred to as a directional model in which latent variables are directional (O'Rourke, Psych, & Hatcher, 2013). SEM explains the relationships between multiple variables, and provides a quantitative test of a theoretical model (Schumacker & Lomax, 2010). O'Rourke et al. (2013) identified two steps for SEM. The first step involved the development of a measurement model using confirmatory factor analysis (CFA), which identified latent variables and which observed variables measure the latent variables. However, a measurement model does not indicate any directional relationship between latent variables; rather the latent variables are covaried with the other latent constructs. The second step was developing and testing theoretical models, which identified theoretical relationships between latent or observed variables (O'Rourke et al., 2013). To determine the overall goodness of fit for CFA models for each latent variable and theoretical SEM models, the following fit indices were used: (a) Standardized Root Mean Square Residual (SRMR) as one absolute index, (b) Comparative Fit Index (CFI) as an incremental index, and (c) Root Mean Square Error of Approximation (RMSEA) as a parsimony index (O'Rourke et al., 2013).

Overall, for an ideal fit model, a SRMR value less than .09 suggested an adequate fit, whereas a SRMR value less than .055 suggested a good fit. CFI should be more than .94 for a good fit model. In addition, for RMSEA, a values less than .09 suggests an adequate fit, while values less than .06 suggested a good fit (Hu & Bentler, 1999; O'Rourke et al., 2013). As

explained, the first step was to test CFAs for each latent variable, and overall measurement model. In the next section, CFAs for optimism, hope, gratitude, psychological distress, and life satisfaction are presented. For negative life events, because any item of the Life Experience Survey (LES) can be used for the negative or the positive life event total scores, it is not possible to test CFA model for this variable. Rather, negative life event total score was considered as a manifest variable in all theoretical SEM models.

#### Confirmatory Factor Analysis: Optimism

Optimism was measured by the Life Orientation Test-Revised (LOT-R). The CFA of the LOT-R was conducted based on the exploratory factor analysis (EFA) and the CFA conducted by Scheier et al. (1994). The LOT-R measured optimism with six items, and provided a total score. Theoretically, six items loads one factor. In the current study, so the CFA of LOT-R was conducted based on one factor structure. The results of CFA of the LOT-R provided a poor fit for the model (SRMR = .058, CFI = .905, RMSEA = .134). Although SRMR < .09 and met the standards for an adequate model, CFI and RMSEA values did not meet the criteria. Therefore, the theoretical measurement model of LOT-R needed to be revised.

Because all indicators in the theoretical model loads to the factor significantly, there were no items to be deleted. However, based on the modification indices, errors between 1 and 3, 2 and 6, 3 and 4, and 4 and 6 were freed and theoretically justified. The modified measurement model (see Figure 9) provided a good fit for the LOT-R with this data set (Chi-square = 15.233;  $df = 5$ ; SRMR = .022, CFI = .991, RMSEA = .056). The changes between theoretical and modified CFA models of the LOT-R are shown in Table 12. Six of the factor loadings of modified model were between .46 to .83 (see Table 13).

Table 12: Model Fit Indices of CFA of the Life Orientation Test-Revised

	Chi-square	<i>DF</i>	SRMR	CFI	RMSEA
Theoretical Model	118.908	9	.058	.905	.134
$\Delta$ Model	- 103.675	- 4	- .036	+ .086	.078
Modified Model	15.233	5	.022	.991	.056

Table 13: Standardized Loading of Indicators for Modified Model

Items	Standardized loading
LOTR-1	.46
LOTR-2	.71
LOTR-3	.50
LOTR-4	.83
LOTR-5	.62
LOTR-6	.83

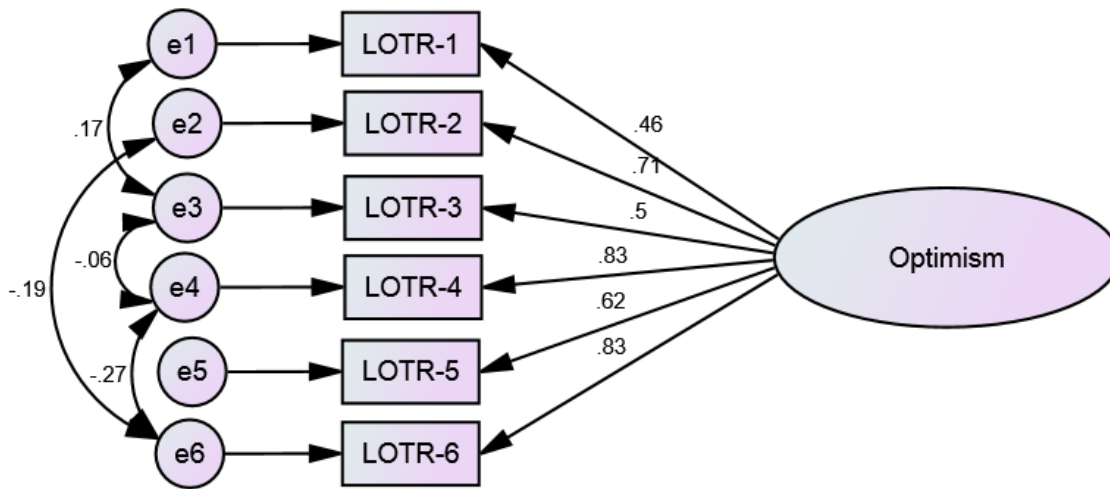


Figure 9: Confirmatory Factor Analysis LOT-R

#### Confirmatory Factor Analysis: Hope

Hope was measured by the Adult Dispositional Hope Scale (ADHS; Snyder et al., 1991). Snyder et al., (1991) conducted CFA for ADHS and constructed two factors solution, which were loaded by four items each. However, ADHS also provided a total score of hope. Because only the total score was used for the current study, the CFA of ADHS was conducted based on a one factor structure. The CFA of ADHS theoretical measurement model revealed the following fit indices: SRMR = .063, CFI = .877, RMSEA = .102. Thus, the standards were not met, so a modification was needed.

All indicators significantly loaded the factor, so no items were deleted. To improve the model, errors between 1 and 2, and 1 and 4 were freed based on the modification indices and were theoretically justified (see Figure 10). The modified model met the standards (Chi-square = 79.613;  $df = 18$ ; SRMR = .042, CFI = .947, RMSEA = .070). Even though RMSEA was higher

than .06, it still suggests an adequate for the model. The changes between theoretical and modified model are presented in Table 14. Eight of the factor loadings of modified model were between .38 and .66 (see Table 15).

Table 14: Model Fit Indices of CFA of the Adult Dispositional Hope Scale

	Chi-square	<i>DF</i>	SRMR	CFI	RMSEA
Theoretical Model	162.091	20	.063	.877	.102
$\Delta$ Model	- 82.478	- 2	- .021	+ .07	- .032
Modified Model	79.613	18	.042	.947	.070

Table 15: Standardized Loading of Indicators for Modified Model

Items	Standardized loading
AHS-1	.38
AHS-2	.38
AHS-3	.66
AHS-4	.55
AHS-5	.61
AHS-6	.60
AHS-7	.60
AHS-8	.54

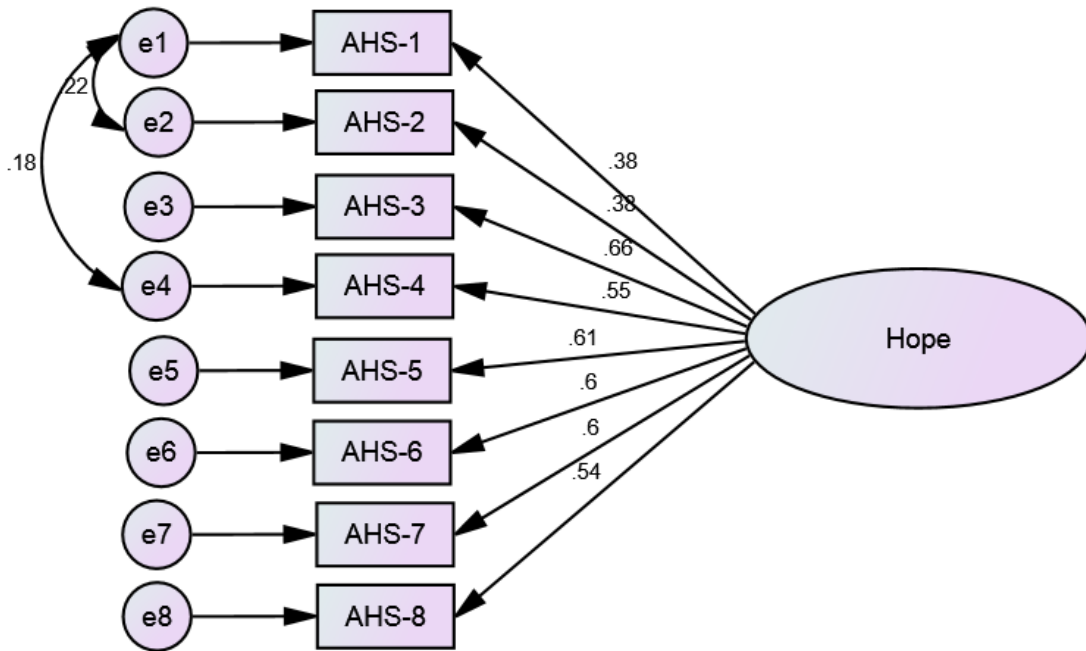


Figure 10: Confirmatory Factor Analysis ADHS

#### Confirmatory Factor Analysis: Gratitude

The Gratitude Questionnaire-6 (GQ-6) was used to measure gratitude. McCullough et al. (2002) conducted EFA and CFA, and found one factor loaded by six items. In the current study, the theoretical measurement model CFA was tested based on McCullough et al.'s (2002) study. The results revealed that the theoretical measurement model of GQ-6 did not fit with the data set (SRMR = .075, CFI = .877, RMSEA = .167). Therefore, a modified model was developed based on modification indices and theoretically justified. However, all items loaded the factor significantly, so no items were deleted.

In the modified model, errors between 1 and 2, and 3 and 6 were freed. The modified measurement model (see Figure 11) provided a good fit for the GQ-6 with this data set (Chi-

square = 15.549;  $df = 7$ ; SRMR = .021, CFI = .994, RMSEA = .042). The changes between the theoretical and the measurement models CFA of the GQ are presented in Table 16. Six of the factor loadings of the modified model were between .42 and .73 (see table 17).

Table 16: Model Fit Indices of CFA of the Gratitude Questionnaire-6

	Chi-square	<i>DF</i>	SRMR	CFI	RMSEA
Theoretical Model	181.622	9	.075	.877	.167
$\Delta$ Model	- 166.073	- 2	- .054	+ .117	- .125
Modified Model	15.549	7	.021	.994	.042

Table 17: Standardized Loading of Indicators for Modified Model

Items	Standardized loading
GQ-1	.62
GQ-2	.69
GQ-3	.56
GQ-4	.73
GQ-5	.70
GQ-6	.42

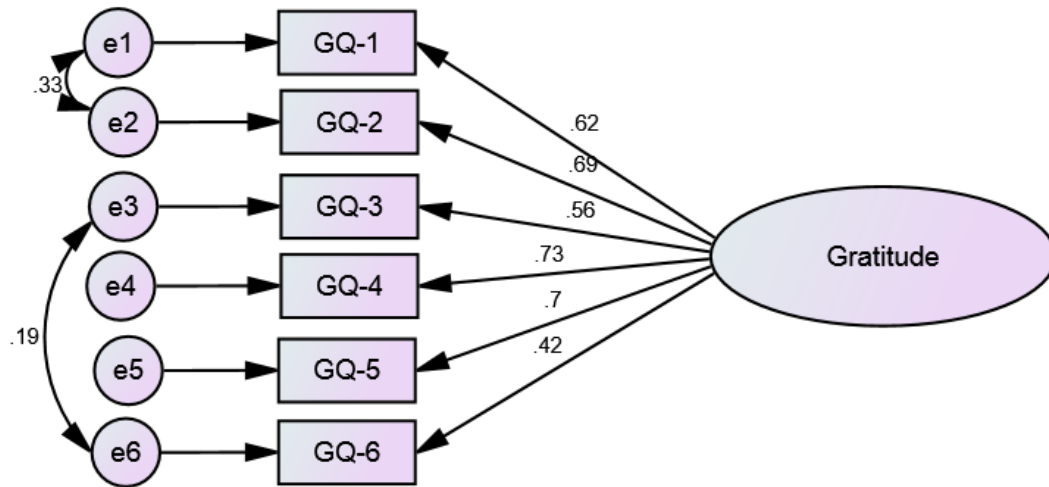


Figure 11: Confirmatory Factor Analysis GQ-6

Confirmatory Factor Analysis: Psychological Distress

The Kessler Psychological Distress Scale (K-10) was used to measure psychological distress. The CFA of K-10 was conducted based on the EFA conducted by Kessler et al. (2002). The K-10 measured non-specific psychological distress with 10 items loading one factor. The CFA of the K-10 theoretical measurement model provided a poor fit (SRMR = .087, CFI = .811, RMSEA = .167). Therefore, the K-10 was modified based on modification indices and theoretically justified. Since all indicators loaded to the factor significantly, no items were deleted.

For modification, errors between 1 and 2, 2 and 3, 5 and 6, 7 and 9, 7 and 10, and 9 and 10 were freed. The modified model (see Figure 12) provided the following fit results: Chi-square = 132.167;  $df = 29$ ; SRMR = .039, CFI = .971, RMSEA = .072. SRMR and CFI values met the standards for a good model. However, the RMSEA value was more than .06, but less than .09, suggesting an adequate model fit. Overall, the modification improved the measurement model



for K-10 (see Table 18), and 10 of the factor loadings of the modified model were between .53 and .77 (see Table 19).

Table 18: Model Fit Indices of CFA of the Kessler Psychological Distress Scale

	Chi-square	<i>DF</i>	SRMR	CFI	RMSEA
Theoretical Model	706.030	35	.087	.811	.167
$\Delta$ Model	- 573.863	- 6	- .048	+ .16	- .095
Modified Model	132.167	29	.039	.971	.072

Table 19: Standardized Loading of Indicators for Modified Model

Items	Standardized loading
KES-1	.56
KES-2	.56
KES-3	.67
KES-4	.78
KES-5	.55
KES-6	.53
KES-7	.78
KES-8	.65
KES-9	.77
KES-10	.69

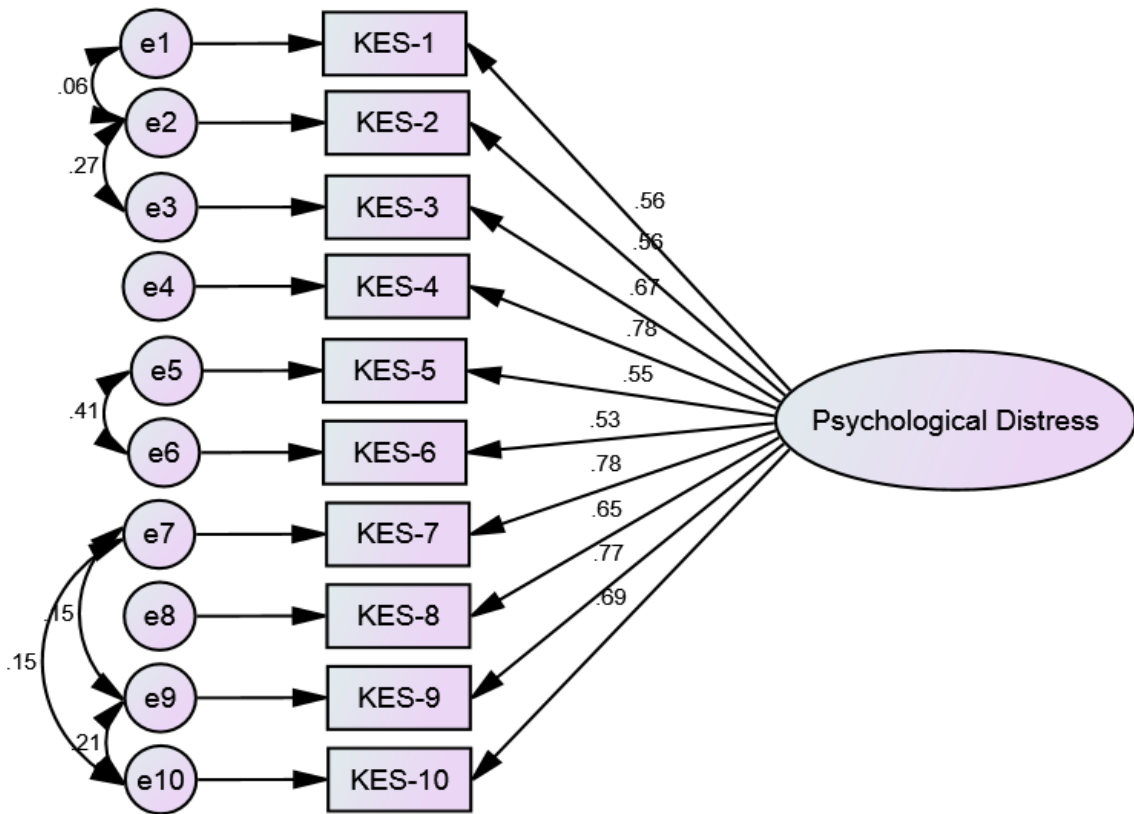


Figure 12: Confirmatory Factor Analysis K10

### Confirmatory Factor Analysis: Life Satisfaction

Life satisfaction was measured using the Satisfaction with Life Scale (SWLS). According to Diener et al. (1985), SWSL had five items loading one factor. The CFA of SWLS for the current study was conducted based on the theoretical model developed by Diener et al. (1985). The results of the CFA of SWSL provided the following fit indices: SRMR = .027, CFI = .980, RMSEA = .093. Even though SRMR and CFI values suggested a good fit, the RMSEA value was greater than .09. Therefore, a modification was done based on the modification indices and theoretically justified.

Only the error between 1 and 2 were freed for the modified model (see Figure 13). The results of the CFA of the modified model provided a fit model for this data set (Chi-square = 8.716;  $df = 4$ ; SRMR = .013; CFI = .997, RMSEA = .041). Therefore, the modification indices improved the model (see Table 20). Five of the factor loadings of the modified model were between .46 and .83 (see Table 21).

Table 20: Model Fit Indices of CFA of the Satisfaction with Life Scale

	Chi-square	<i>DF</i>	SRMR	CFI	RMSEA
Theoretical Model	34.354	5	.027	.980	.093
$\Delta$ Model	- 25.638	- 1	- .014	+ .017	- .052
Modified Model	8.716	4	.013	.997	.041

Table 21: Standardized Loading of Indicators for Modified Model

Items	Standardized loading
SWL-1	.75
SWL-2	.68
SWL-3	.87
SWL-4	.76
SWL-5	.61

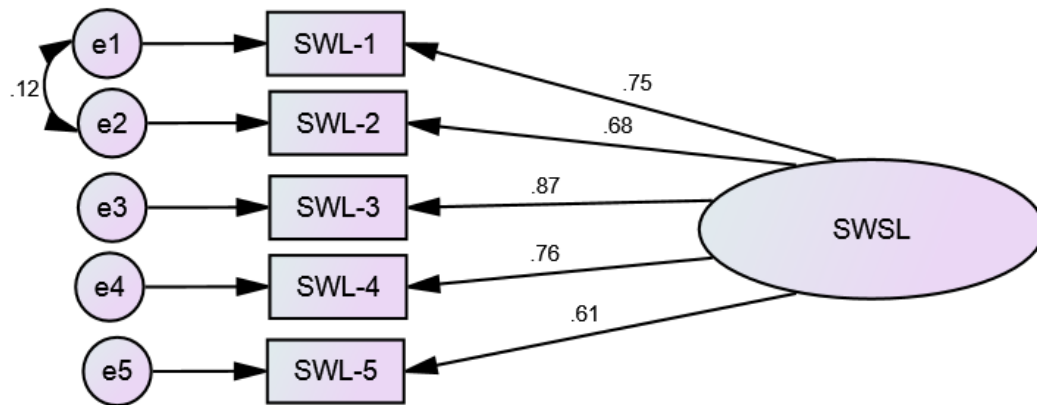


Figure 13: Confirmatory Factor Analysis SWSL

Testing Research Questions 1 - 2

The researcher used Mplus in order to analyze research questions one through eight. A hypothesized model was developed based on the measurement model to analyze research questions one and two. Question one tests negative life events' prediction of psychological distress whereas question two tests negative life events' prediction of life satisfaction. The conceptual model was shown in Figure 1. However, the estimated structural model, which was developed based on the measurement model, was shown in Figure 10. In the structural model, the negative life events total score was defined as an exogenous (independent) manifest variable, measured by the sum of the negative life events of the Life Experience Survey. The psychological distress, measured by a one factor structure of the Kessler Psychological Distress Scale and life satisfaction, measured by a one factor structure of the Satisfaction with Life Scale were defined as the endogenous (dependent) latent variables (see Figure 14).

Examination of the fit indices indicated a good fit for this data (Chi-square = 5915.466;  $df$  = 120; SRMR = .039, CFI = .966, RMSEA = .053). Therefore, no modifications were needed.

According to the structural model, the paths between negative life events, psychological distress, and life satisfaction were all statistically significant ( $p = .00$  for both). In addition, all covariances were found to be statistically significant ( $p < .001$ ). The participants' negative life events scores accounted for 14% of the variance in their psychological distress (standardized coefficient = -0.38). In addition, the participants' negative life events scores accounted for 8% of their life satisfaction scores (standardized coefficient = -0.29).

The relationship identified between negative life events and psychological distress was positive, suggesting that higher levels of negative life events contributed to higher levels of psychological distress. On the other hand, a negative relationship was identified between negative life events and life satisfaction, suggesting higher level of negative life events contributed to lower levels of life satisfaction. According to the results of the structural model, null hypotheses one and two were rejected.

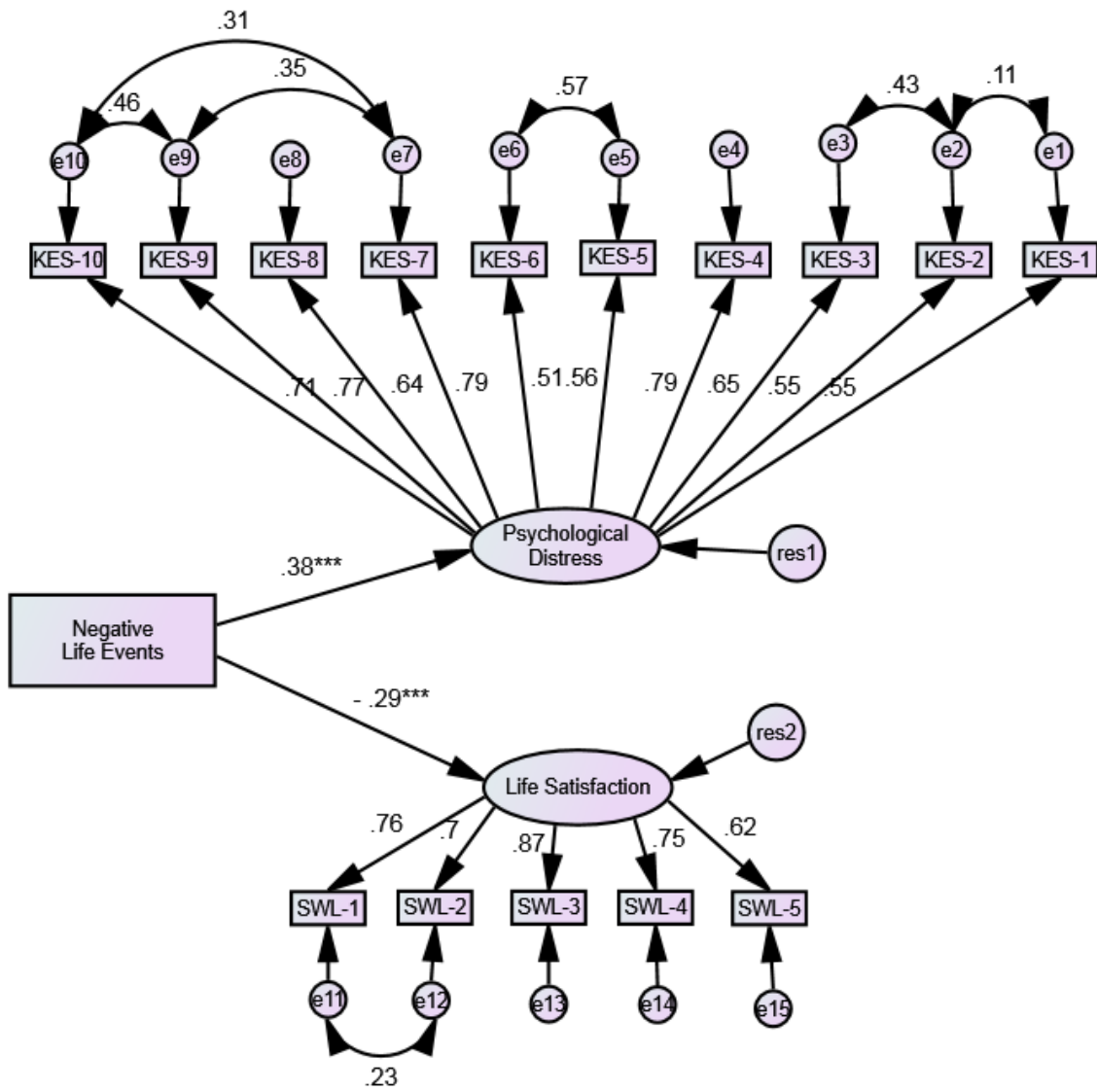


Figure 14: Structural Model of Predictor Variable

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Testing Research Questions 3 -4

Question four tested the degree of the moderation effect of optimism on negative life events' prediction of psychological distress; whereas questions five tested the degree of the

moderation effect of optimism on negative life events' prediction of psychological distress (see Figure 6 for the optimism moderation conceptual model). In order to test a moderation effect in SEM, two models needed to be estimated: first, a main effect structural model and second, an interaction model. The difference between the interaction and main effect models explain the effects of moderation (Maslowsky, Jager, & Hemken, 2014).

First, based on the measurement models, the optimism main effect model was estimated (see Figure 15). In this model, negative life events total score (manifest), measured by the sum of the negative life events of the Life Experience Survey, and optimism (latent), measured by the one factor structure of the Life Orientation Test-Revised, were defined as exogenous (independent) variables. Psychological distress, measured by a one factor structure of the Kessler Psychological Distress Scale and life satisfaction, measured by a one factor structure of the Satisfaction with Life Scale, were defined as the endogenous (dependent) latent variables. The optimism main effect model provided a good fit with this data (SRMR = .052, CFI = .956, RMSEA = .048). Since Mplus does not provide a standardized beta coefficient for the interaction model (Maslowsky et al., 2014; Muthén & Muthén, 2010), to be consistent in reporting results of the main effect and interaction models, the unstandardized beta coefficients of the main effect model are shown in Figure 15. In the main effect model, negative life events (standardized coefficient = .29,  $p < .001$ ) and optimism (standardized coefficient = -.53,  $p < .001$ ) significantly predicted psychological distress. Similarly, negative life events (standardized coefficient = -.22,  $p < .001$ ) and optimism (standardized coefficient = .45,  $p < .001$ ) significantly predicted life satisfaction. The optimism main effect model explained 37% of the variance in psychological distress and 25% of the variance in life satisfaction.

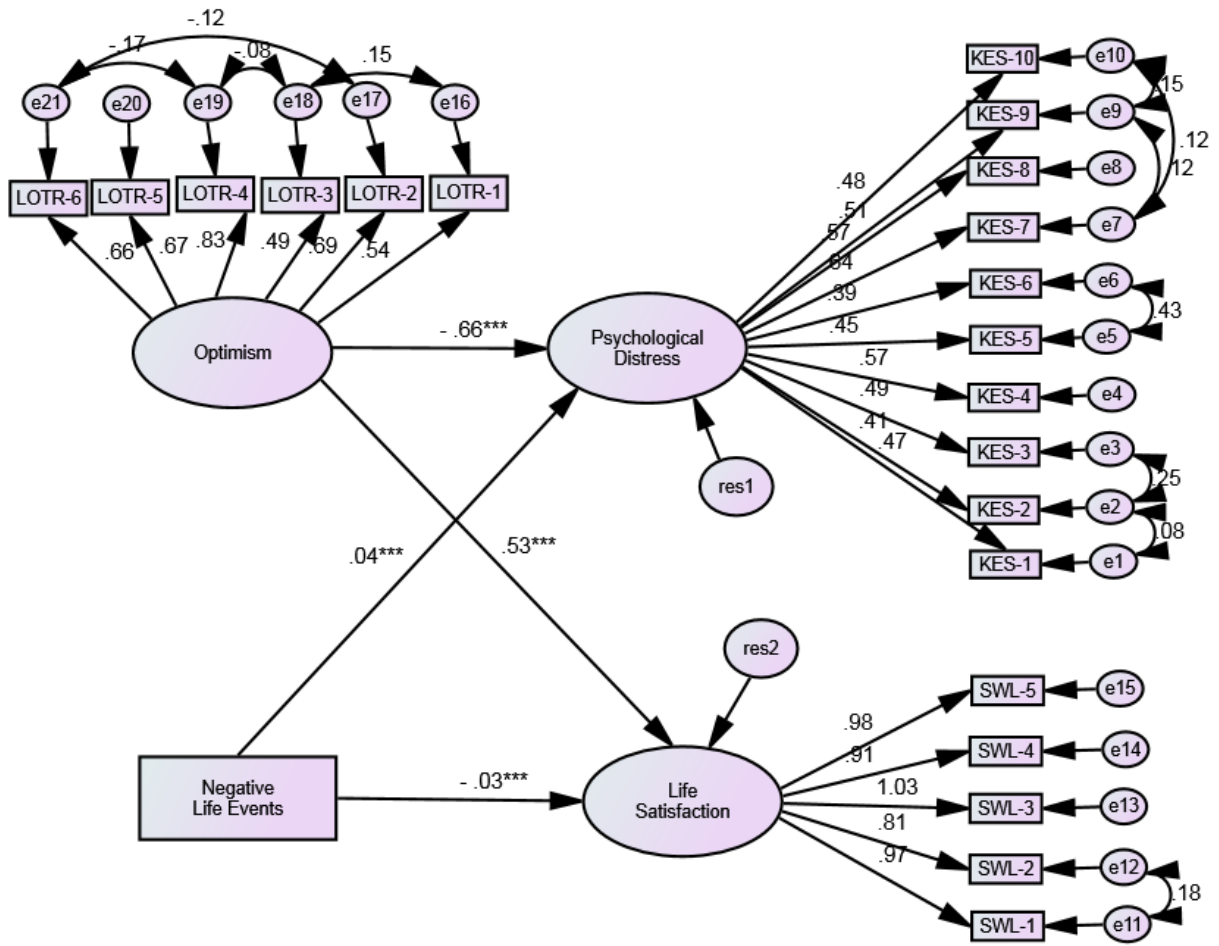


Figure 15: Optimism Main Effect Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Next, the optimism interaction model was estimated (see Figure 16). In addition to the optimism main effect model, the interaction between optimism and negative life events was added to the interaction model. In order to determine the relative fit of the interaction model to the main effect model, the following formula (Maslowsky et al., 2014) was implemented:

$$D = -2[(\log\text{-likelihood for Model 0}) - (\log\text{-likelihood for Model 1})].$$



Log-likelihood ratio test comparing the log-likelihood values of the main and the interaction models:

$$D = -2 [(-19644.512) - (-19638.889)] = 11.246$$

Based on the difference between the two models, the free parameters of the main effect model was 79, the free parameters of the interaction model was 81, so the differences in free parameters was 2, which indicated the *df* to use log-likelihood ratio test. According to the Chi-square distribution table (Wonnacott & Wonnacott, 1982), this result log-likelihood ratio test provided a significant ( $p < .005$ ) improvement. The results showed that the optimism main effect model represented a significant loss in fit relative to the optimism interaction model.

In the optimism interaction model, the interaction between optimism and negative life events significantly predicted psychological distress (unstandardized coefficient =  $-.02$ ,  $p < .05$ ). However, the interaction between optimism and negative life events did not significantly predict life satisfaction (unstandardized coefficient =  $.004$ ,  $p > .05$ ). Thus, the results revealed that null hypothesis three was rejected, whereas null hypothesis four was not rejected.

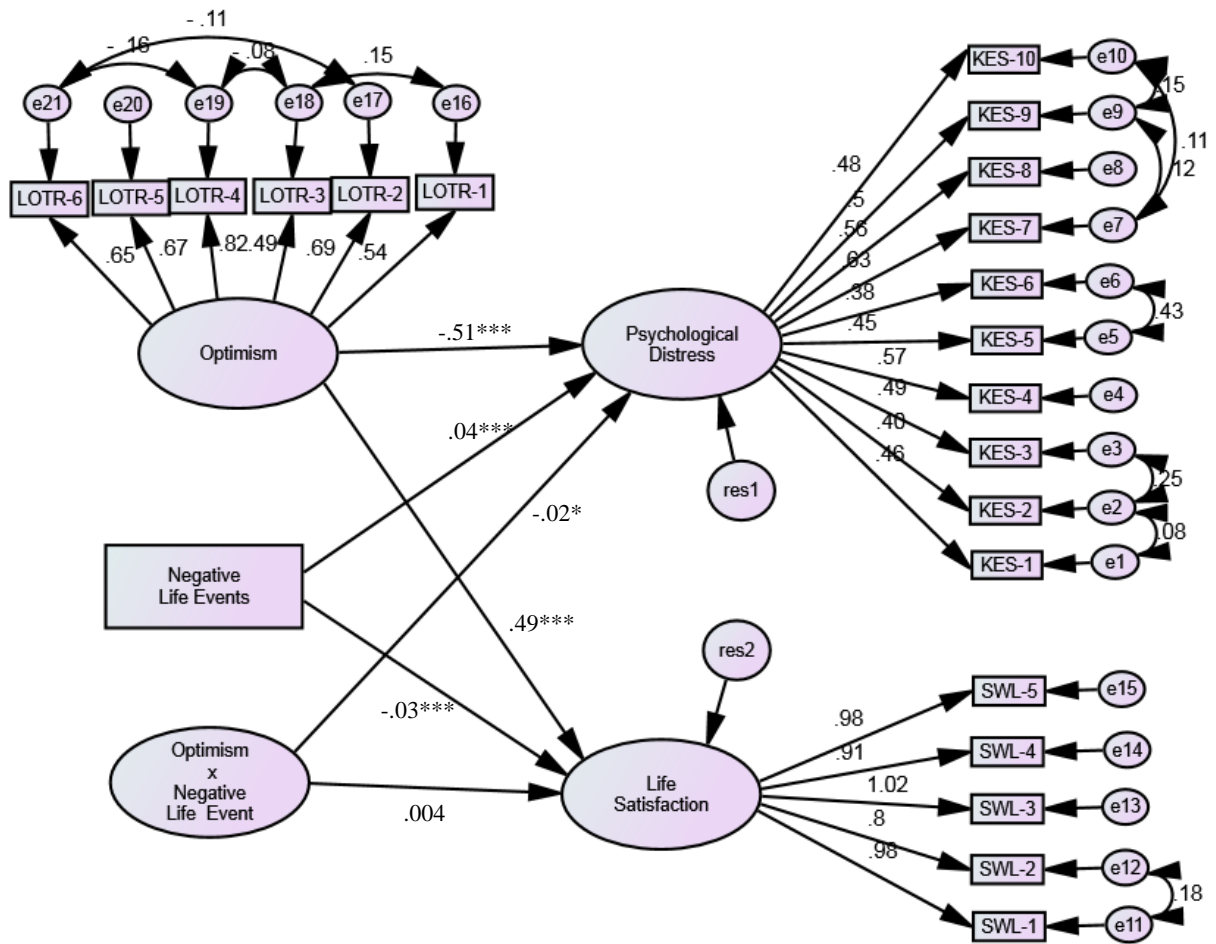


Figure 16: Optimism Interaction Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Testing Research Questions 5 – 6

Questions five and six tested the moderation effect of hope on negative life events' prediction of psychological distress and life satisfaction (see Figure 7 for the hope moderation conceptual model). As implemented while testing the moderation effects of optimism, two models were estimated to examine the moderation effect of hope on negative life events' prediction of psychological distress and life satisfaction. The first model was the main effect

model, in which hope was identified as an independent variable. The second model was the interaction model that included the interaction of negative life events and hope.

First, the hope main effect model was estimated (see Figure 17). In the main effect model, negative life events total score (manifest), measured by the sum of the negative life events of the Life Experience Survey, and hope (latent), measured by the one factor structure of the Adult Dispositional Hope Scale, were defined as exogenous (independent) variables. Psychological distress, measured by the one factor structure of the Kessler Psychological Distress Scale and life satisfaction, measured by the one factor structure of the Satisfaction with Life Scale were defined as endogenous (dependent) latent variables. The hope main effect model provided a good fit with this data (SRMR = .046, CFI = .939, RMSEA = .050). Even though the CFI value was slightly less than .94, a CFI value between .90 and .94 still suggested an adequate fit (O'Rourke et al., 2013). As explained above, since Mplus did not provide a standardized coefficient for the interaction model, only unstandardized coefficients are presented in Figure 13. In the hope main effect model, negative life events (standardized coefficient = .36,  $p < .001$ ) and hope (standardized coefficient = -.37,  $p < .001$ ) significantly predicted psychological distress. Similarly, negative life events (standardized coefficient = -.27,  $p < .001$ ) and hope (standardized coefficient = .56,  $p < .001$ ) significantly predicted life satisfaction. The hope main effect model explained 27% of the variance in psychological distress, and 39% of the variance in life satisfaction.

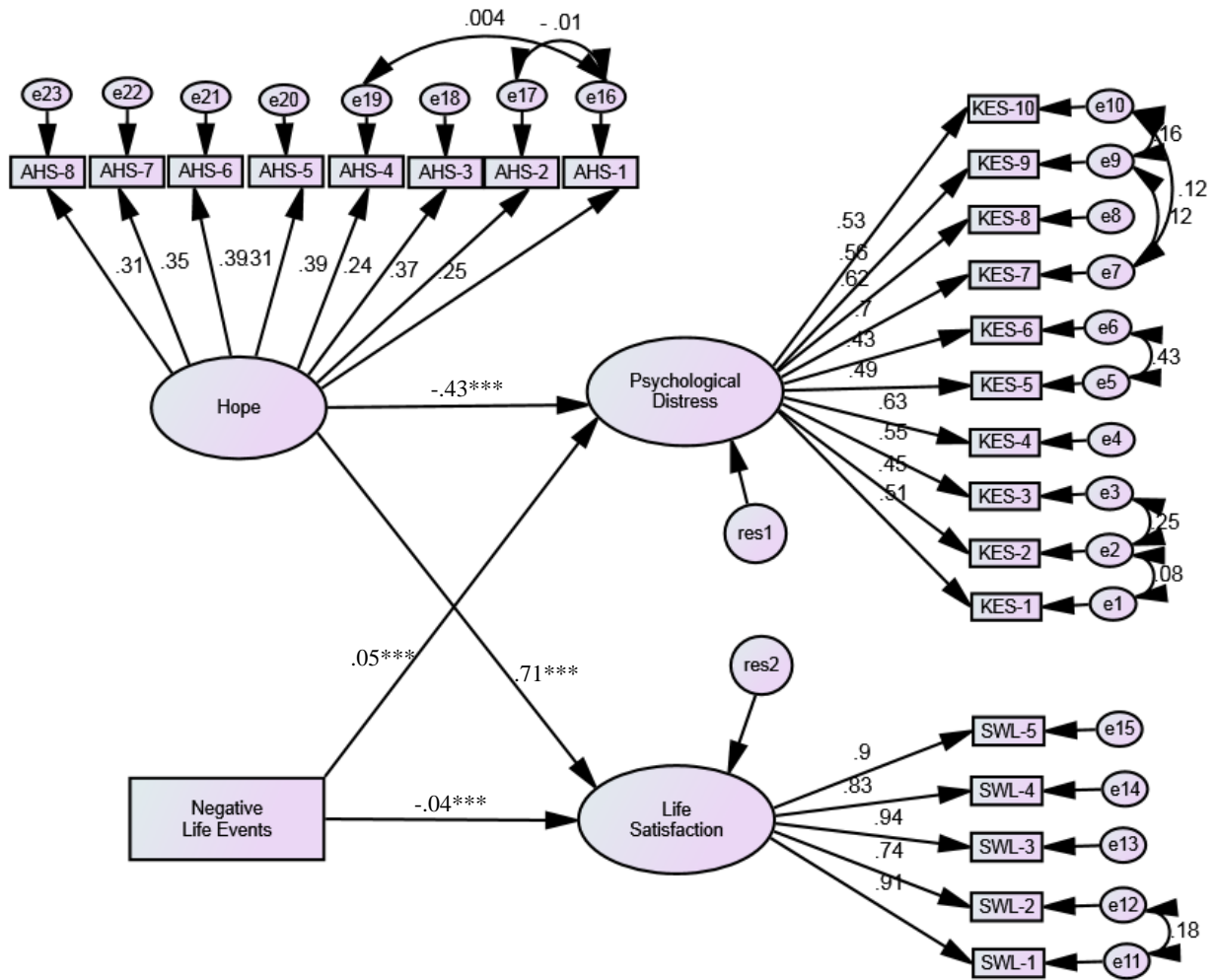


Figure 17: Hope Main Effect Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Next, the hope interaction model was estimated (see Figure 18). In this model, the interaction between hope and negative life events was added to the main effect model. Regarding the relative fit of the interaction model to main effect model, the following log-likelihood ratio test was implemented:

$$D = -2 [(-18733.349) - (-18723.617)] = 19.464$$

The free parameters of the main effect model was 83, and the free parameters of the interaction model was 85, so the difference in free parameters between the two models was 2, which provided the degrees of freedom for the log-likelihood ratio test. According to the Chi-square distribution table (Wonnacott & Wonnacott, 1982), the results of the log-likelihood ratio test provided a significant ( $p < .001$ ) improvement. This results showed that the hope main effect model represented a significant loss in fit relative to the hope interaction model.

In the interaction model, the interaction between hope and negative life events significantly predicted psychological distress (unstandardized coefficient = -0.03,  $p < .001$ ). However, the interaction between hope and negative life events did not significantly predict life satisfaction (unstandardized coefficient = -0.01,  $p > .05$ ). Thus, the results showed that null hypothesis five was rejected, whereas null hypothesis six was not rejected.

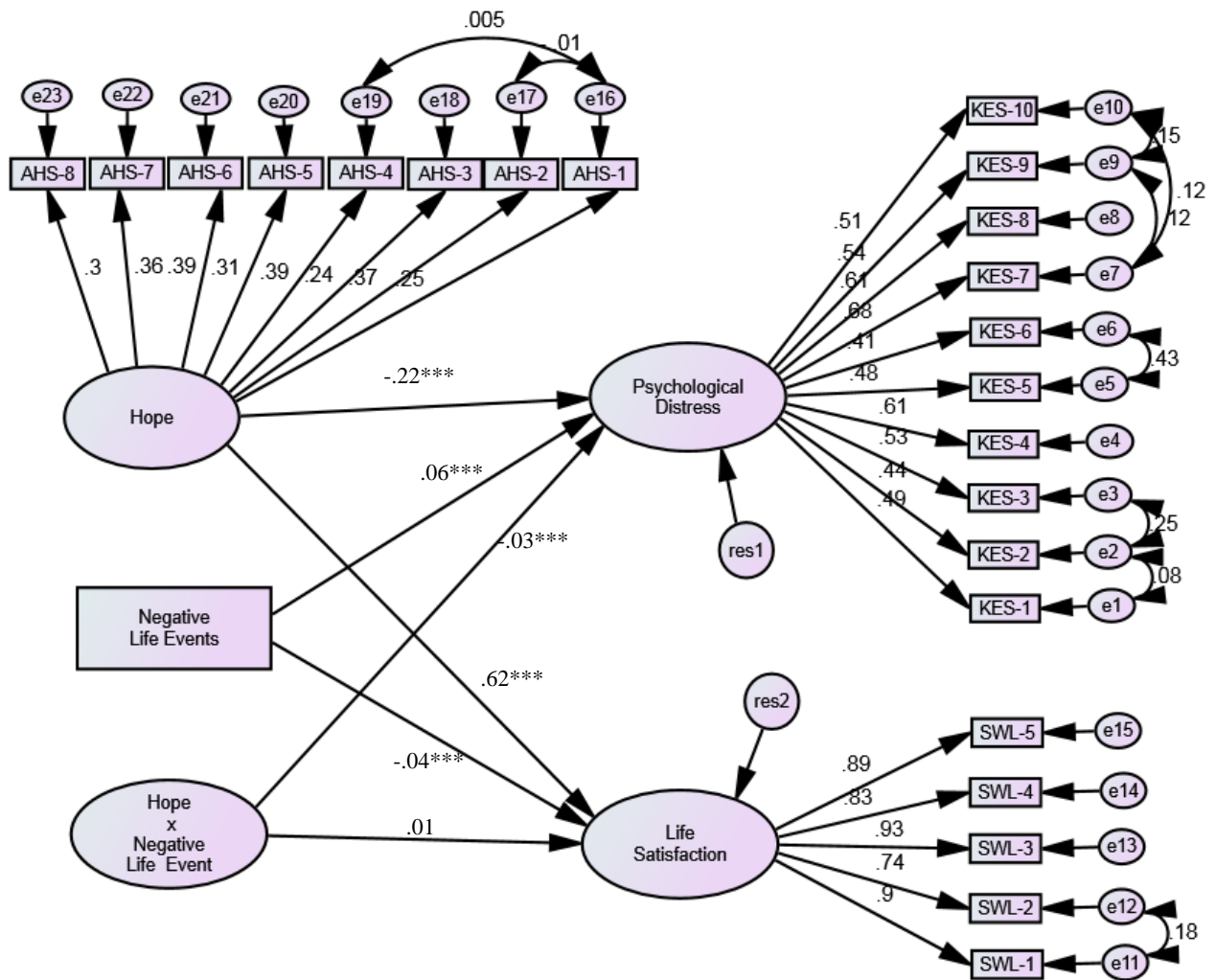


Figure 18: Hope Interaction Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

### Testing Research Questions 7–8

Question seven and eight examined the moderation effects of gratitude on negative life events' prediction of psychological distress and life satisfaction, respectively (see Figure 8 for the gratitude moderation conceptual model). To test the moderation effect of gratitude, first a main effect model was estimated, then an interaction effect model was estimated.

Based on the measurement model, the gratitude main effect model was estimated (see Figure 19). In the model, negative life events total score (manifest), measured by the sum of the negative life events of the Life Experience Survey, and gratitude (latent), measured by the one factor structure of the Gratitude Questionnaire-6, were defined as exogenous (independent) variables. Psychological distress, measured by the one factor structure of the Kessler Psychological Distress Scale and life satisfaction, measured by the one factor structure of the Satisfaction with Life Scale were defined as endogenous (dependent) latent variables. The gratitude main effect model provided a good fit with this data (SRMR = .045, CFI = .962, RMSEA = .045). The unstandardized beta coefficients of the main effect model are shown in Figure 11. Negative life events (standardized coefficient = .36,  $p < .001$ ) and gratitude (unstandardized coefficient = -.34,  $p < .001$ ) significantly predicted psychological distress. Similarly, negative life events (standardized coefficient = -.27,  $p < .001$ ) and gratitude (standardized coefficient = .54,  $p < .001$ ) significantly predicted life satisfaction. The gratitude main effect model explained 25% of the variance in psychological distress, and 36% of the variance in life satisfaction.

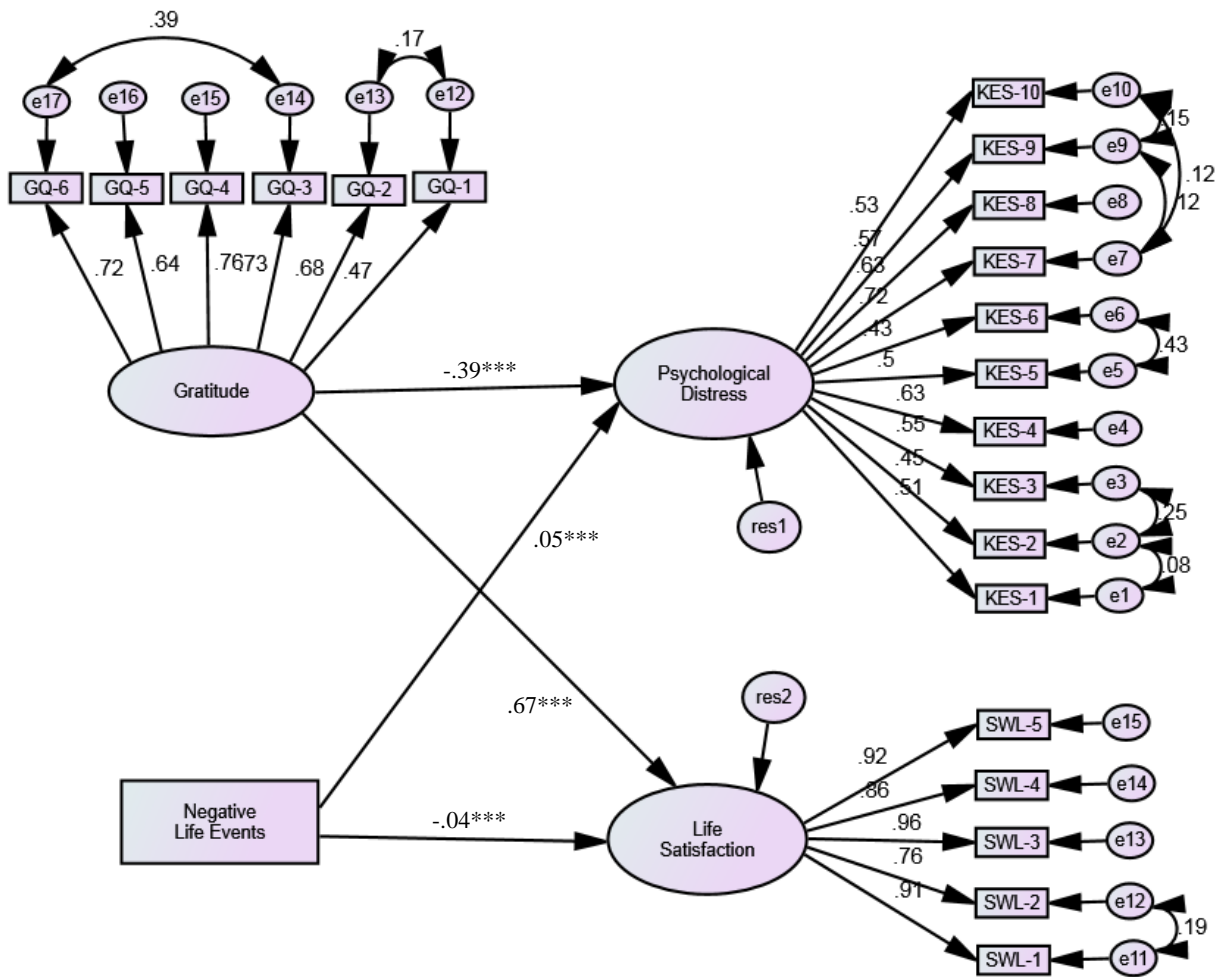


Figure 19: Gratitude Main Effect Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Next, the gratitude interaction model was estimated (see Figure 20). The interaction between gratitude and negative life events was added into the interaction model. Regarding the relative fit of the interaction model to the main effect model, the following log-likelihood ratio test was implemented:

$$D = -2 [(-19846.761) - (-19840.067)] = 13.388$$



The free parameters of the main effect model was 77, and the free parameters of the interaction model was 79, so the difference in free parameters between the two models was 2, which provided the degrees of freedom used in the log-likelihood ratio test. According to the Chi-square distribution table (Wonnacott & Wonnacott, 1982), the log-likelihood ratio test results provided a significant ( $p < .001$ ) improvement. This result showed that the gratitude main effect model represented a significant loss in fit relative to the hope interaction model.

In gratitude interaction model, the interaction between gratitude and negative life events significantly predicted psychological distress (unstandardized coefficient = -0.02,  $p < .05$ ). However, the interaction between hope and negative life events did not significantly predict life satisfaction (unstandardized coefficient = -0.002,  $p > .05$ ). Thus, the results showed that null hypothesis seven was rejected whereas null hypothesis eight was not rejected.

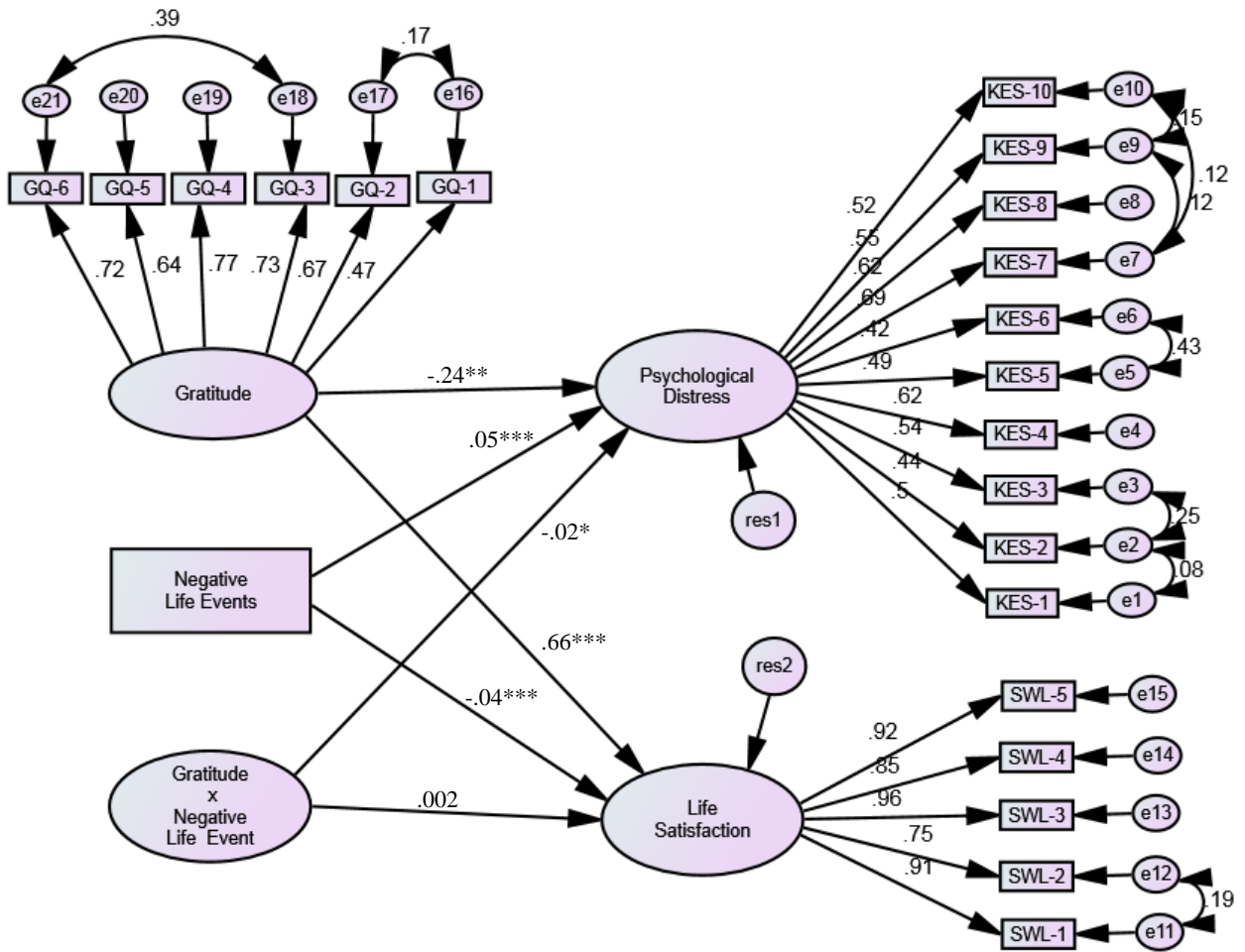


Figure 20: Gratitude Interaction Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

### Summary

Chapter four presented the results of the data analysis which included: (a) descriptive analysis, (b) measurement models, and (c) structural equation modeling. The results yielded that negative life events predicted psychological distress and life satisfaction. The results also revealed that optimism, hope, and gratitude significantly moderated negative life events'

prediction of psychological distress. However, these variables did not significantly moderated negative life events' prediction of life satisfaction.

## CHAPTER FIVE: DISCUSSION

This chapter summarizes the results of the study examining the relationships among negative life events and psychological distress and life satisfaction. Additionally, the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction were examined. The first section provides a discussion of the results of each research question. The second section outlines the limitations of the study, implication for counselors and counselor educators, and future research directions.

### Discussion

This study examined the relationship between negative life events such as divorce, financial issues, or relationship changes and psychological distress and life satisfaction in college students. Previous studies found that negative life events were associated with various psychological concerns, such as decreased well-being, depressive symptoms, or anxiety (Luhmann et al., 2012; Murberg & Bru, 2009; Paykel, 2003; Phillips et al., 2015). Previous studies also found negative life events to be a predictor of psychological issues, including general health symptoms, depression, anxiety, somatization, loneliness, social avoidance, and suicidal or violent behaviors, in college students (Beasley et al., 2003; Gelaye et al., 2008; Li et al., 2013; Rowe et al., 2013; Visser et al., 2013). Regarding psychological distress, the previous literature also showed a relationship between negative life events and psychological distress (Leong & Vaux, 1991; Marum et al., 2014).

In addition, this study aimed to investigate the moderating effects of optimism, hope, and gratitude on negative life events' prediction of psychological distress and life satisfaction. In this

regard, the researcher was interested in the functions of optimism, hope, and gratitude on an individual's ability to cope with life difficulties. The literature had suggested that these three variables were negatively related to undesirable psychological issues (Optimism: Puskar et al., 1999; Stanojevic et al., 2014; Hope: Peleg et al., 2009; Michael & Snyder, 2005; Gratitude: McCullough et al., 2002; Wood et al., 2008). On the other hand, optimism (Warren et al., 2015; Stanojevic et al., 2014), hope (Marques, et al., 2015; Radwin et al., 2013) and gratitude (McCullough et al., 2002; Senf & Liao, 2013) were found to be positively related to desirable outcomes such as life satisfaction, happiness, self-efficacy and wellness. In addition, positive psychology has studied coping which refers to how individuals deal with issues, difficulties, or changes (e.g. Mak et al., 2011; Santos et al., 2013). In sum, due to the relationships between optimism, hope, and gratitude and various psychological outcomes and the promise of positive psychology on coping, this study sought to examine the moderating effects of optimism, hope and gratitude on negative life events.

### Research Questions and Hypotheses

Research Question One. "How well do negative life events predict psychological distress?" This question generated the first null hypothesis that stated, "Negative life events do not predict psychological distress." In this study, the null hypothesis was rejected because negative life events significantly predicted psychological distress.

Research Question Two. "How well do negative life events predict life satisfaction?". This question generated the second null hypothesis that stated, "Negative life events do not predict life satisfaction." The null hypothesis was rejected because negative life events significantly predicted life satisfaction.

Research Question Three. To what degree does optimism moderate negative life events' prediction of psychological distress?" This question generated the third hypothesis that stated, "Optimism does not moderate negative life events' prediction of psychological distress." The null hypothesis was rejected because optimism significantly moderated the negative life events' prediction of psychological distress.

Research Question Four. "To what degree does optimism moderate negative life events' prediction of life satisfaction?" This question generated the fourth hypothesis that stated, "Optimism does not moderate negative life events' prediction on life satisfaction." The null hypothesis was not rejected because optimism did not significantly moderate the negative life events' prediction of life satisfaction. However, as shown in the optimism main effect model (see Figure 15), optimism significantly (standardized coefficient = .45,  $p < .001$ ) predicted life satisfaction. Therefore, it can be concluded that even though optimism did not function to reduce the effects of negative life events of life satisfaction, optimism itself may enhance life satisfaction.

Research Question Five. "To what degree does hope moderate negative life events' prediction of psychological distress?" This question generated the fifth hypothesis which stated, "Hope does not moderate negative life events' prediction on psychological distress." The null hypothesis was rejected because hope significantly moderated the negative life events' prediction of psychological distress.

Research Question Six. "To what degree does hope moderate negative life events' prediction of life satisfaction?". This question generated the sixth hypothesis that stated, "Hope does not moderate negative life events' prediction of life satisfaction." The null hypothesis was

not rejected because hope did not significantly moderate the negative life events' prediction of life satisfaction. However, as shown in the hope main effect mode (see Figure 17), hope significantly (standardized coefficient = .56,  $p < .001$ ) predicted life satisfaction. Therefore, it can be concluded that even though hope did not function to reduce the effects of negative life events on life satisfaction, hope itself may enhance life satisfaction.

Research Question Seven. "To what degree does gratitude moderate negative life events' prediction of psychological distress?". This question generated the seventh hypothesis that stated, "Gratitude does not moderate negative life events' prediction of psychological distress." The null hypothesis was rejected because gratitude significantly moderated the negative life events' prediction of psychological distress.

Research Question Eight. "To what degree does gratitude moderate negative life events' prediction on life satisfaction?" This question generated the eighth hypothesis that stated, "Gratitude does not moderate negative life events' prediction of life satisfaction." The null hypothesis was not rejected because gratitude did not significantly moderate the negative life events' prediction of life satisfaction. However, as shown in the gratitude main effect mode (see Figure 19), gratitude significantly (standardized coefficient = .54,  $p < .001$ ) predicted life satisfaction. Therefore, it can be concluded that even though gratitude did not function to reduce the effects of negative life events of life satisfaction, gratitude itself may enhance life satisfaction.

### Negative Life Events and Psychological Distress and Life Satisfaction

This section presents the results for Research Questions One and Two. Research questions One and Two examined negative life events' prediction of psychological distress and

life satisfaction, respectively. The questions were tested using a structural model of predictor variable (see Figure 14). The model was fit for this data (Chi-square = 5915.466;  $df = 120$ ; SRMR = .039, CFI = .966, RMSEA = .053). The results revealed that negative life events were a statistically significant ( $p < 001$ ) predictor of psychological distress and life satisfaction ( $\beta = .38$ ,  $\beta = -.29$ , respectively). In the literature, many studies have examined the relationships between negative life events and various psychological outcomes including psychological distress and life satisfaction. Therefore, these results confirmed that in college students' negative life events are related to distress and satisfaction.

As mentioned previously, the literature had shown the relationship between negative life events and undesirable psychological outcomes such as depressive symptoms (Moberly & Watkins, 2008; Murberg & Bru, 2009; Wardenaar et al., 2014), anxiety (Phillips et al., 2015; Rubens et al., 2013), somatic symptoms (Hochwalder, 2013), delinquency (Rubens et al., 2013), and social dysfunction (Hochwalder, 2013). In addition, studies conducted with college students found that negative life events were predictors of depression (Beasley et al. 2003; Li et al., 2013; Visser et al., 2013), anxiety (Beasley et al. 2003), loneliness and social avoidance (Li et al., 2013), and suicidal ideation and behavior (Hirsch et al., 2007; Rowe et al., 2013). Thus the results related to question One and Two showed that negative life events were related to psychological distress, so this result was consistent with the literature showing a relationship between negative life events and undesirable psychological outcomes.

Negative life events were examined as to their relationship with psychological distress. Marum et al. (2014) examined seven categories of negative life events' prediction of psychological distress and life satisfaction. With the exception of bereavement, the remaining six



categories of negative life events (self-suffered illness, close relative suffered illness, divorce, conflict with friend, neighborhood, loss of employment, or financial difficulties) were found to be statistically significant ( $p < 0.001$ ) predictors of psychological distress ( $R^2 = 22.3$ ) and life satisfaction ( $R^2 = 22.3$ ). In another study with college students, Leong and Vaux (1991) found that total ( $r = .21$ ), personal ( $r = .21$ ) and interpersonal ( $r = .24$ ) life event scores were significantly ( $p < .05$ ) correlated with anxiety. In addition, total ( $r = .16$ ) and personal ( $r = .22$ ) life event scores were significantly correlated with depression. To sum up, negative life events have been identified as potential threats to mental health and well-being. In this study, I found negative life events to be related to psychological distress.

Consistent with the literature, negative life events significantly predicted psychological distress and life satisfaction. Even though correlational studies do not allow us to make a strong conclusion about cause and effect relationships (Gall et al., 2007), it makes theoretical sense that higher negative life events lead more psychological distress and less life satisfaction. Therefore, it can be concluded that the results of this study confirmed that negative life events are hazard for psychological health and well-being in college students.

#### Optimism as a moderator

This section discusses the results related to questions Three and Four. Research questions Three and Four examined the moderating effects of optimism on negative life events' prediction of psychological distress and life satisfaction, respectively. Question Three and Four used both an optimism main effect model (see Figure 15) and an optimism interaction model (see Figure 16). The optimism main effect model was fit for this data (SRMR = .052, CFI = .956, RMSEA = .048), and the optimism interaction model showed a significant improvement over the main

effect model. The main effect model showed a statistically significant ( $p < .001$ ) direct negative relationship between optimism and psychological distress, and a significant ( $p < .001$ ) direct positive relationship between optimism and life satisfaction. In addition, the interaction model revealed that optimism moderated negative life events' prediction of psychological distress whereas optimism did not moderate negative life events' prediction of life satisfaction. Thus, optimism lessened the effects of negative life events on psychological distress. However, optimism did not lessen the effects of negative life events on life satisfaction.

The literature generally found that optimism was negatively related to various undesirable psychological outcomes such as depression (Hirsch et al., 2007; Puskar et al., 1999; Stanojevic et al., 2014; Chang, 1998b), negative mood (Aspinwall & Taylor, 1992), stress (Brissette et al., 2002), hopelessness (Hirsch et al., 2007), and suicidal ideations (Hirsch et al., 2007). Regarding psychological distress specifically, Warren et al. (2015) found that optimism was negatively related to psychological distress ( $r = .42, p < .01$ ). Consistent with the literature, in this study optimism was found to be negatively related to psychological distress. Moreover, the literature has documented the moderating role of optimism on various predictors including negative life events. In a study with Chinese high school students ( $N = 345$ ), optimism was found as a significant moderator on the effects of daily hassles on mental health. In other words, results showed that more optimistic participants tended to handle stress better than less optimistic participants when faced with daily hassles (Lai, 2009). In another study, Hirsch et al. (2007) examined the moderating effects of optimism on the impacts of negative life events on suicidal ideation and suicide attempts. They found that optimism significantly moderated the effects of negative life events on suicidal ideation and attempts (Hirsch et al. 2007). Similarly, Chang

(1998b) found that optimism moderated the effects of stress on depressive symptoms in a study with undergraduate students ( $N = 400$ ). In addition, Tucker et al. (2013) found the significant moderating role of optimism on rumination and suicidal ideation in their study of 298 undergraduate students. In that study, two types of rumination were investigated: brooding and reflection. Optimism significantly moderated the relationships between brooding and rumination and suicidal ideation (Tucker et al. 2013). The studies have shown that optimism has the potential to lessen the effects of various predictors on undesirable psychological outcomes. This study suggests that optimism buffered the effects of negative life events on psychological distress, which is consistent with previous findings.

On the other hand, optimism was found to be positively related to desirable psychological outcomes such as self-efficacy, social support, proactive coping, life satisfaction, active coping, and life adjustment (Aspinwall & Taylor, 1992; Chang, 1998a; 1998b; Stanojevic et al., 2014). ; Warren et al. (2015) found that optimism was positively related to life satisfaction ( $r = .39, p < .01$ ). In the present study, optimism was found to be positively related to life satisfaction, so this result confirmed the findings of previous studies concerning the direct effects of optimism.

Regarding the relationships between optimism and life satisfaction, Szczesniak and Soares (2011) found a positive significant correlation ( $r = .25, p < .01$ ) between these two concepts ( $n = 338$ ). Similarly, in another study, optimism was found to be a significant predictor of life satisfaction (Extremera, Durán, & Rey, 2009). These previous findings are consistent with the results of this study about the direct relationship between optimism and life satisfaction.

However, the findings about the moderating role of optimism for life satisfaction is contradictory to previous research. In one study, Chang (1998b) found that optimism moderated

the effects of stress on life satisfaction. However, Chen et al. (2016) examined the moderating role of optimism on the relationships between socioeconomic status, self-esteem, and life satisfaction in a sample of 688 adolescents in China. Optimism did not moderate the impacts of socioeconomic status on life satisfaction whereas optimism moderated the effects of socioeconomic status on self-esteem. Additionally, optimism did not moderate the effects of self-esteem on life satisfaction (Chen et al., 2016). In this study, optimism did not moderate the effects of negative life events on life satisfaction, so this result was consistent with Chen's et al. (2016) finding, but contradicted with Chang's (1998b) finding.

Overall, optimism is a potential variable that can contribute to better coping. A meta-analysis of 50 studies showed that dispositional optimism was positively related to approach coping and problem-focused coping; whereas it was negatively related to avoidance coping and emotion-focused coping (Nes & Segerstrom, 2006). In another study, Aspinwall and Taylor (1992) found that dispositional optimism affects college adjustment, and led to more active coping, and less avoidant coping in college students. To consider optimism in relation to Lazarus's coping model, Chang (1998a) posited that optimism was related to secondary appraisal even though it was not found to be related to primary appraisal. Overall, with respect to moderating effects of optimism on psychological distress, the literature has documented similar results with different variables. In other words, the results of this study related to moderating effects of optimism showed that optimism buffered the effects of negative life events on psychological distress. Thus, an individual with a higher level of optimism had less psychological distress despite experiencing negative life events. It can be concluded that

optimism potentially contributed to coping. Therefore, this finding is consistent with the aforementioned studies about optimism and coping.

On the other hand, in this study optimism did not moderate negative life events' prediction of life satisfaction. In other words, optimism did not buffer the effects of negative life events on life satisfaction. However, despite the absence of a moderating effect, there was a statistically significant ( $p < .001$ ) positive relationship between optimism and life satisfaction, so optimism still predicted life satisfaction. Thus, optimism still has the potential to enhance life satisfaction.

#### Hope as a moderator

Research questions Five and Six examined the moderating effect of hope on negative life events' prediction of psychological distress and life satisfaction, respectively. Question Five and Six both used the hope main effect model (see Figure 17) and the hope interaction model (see Figure 18). The hope main effect model was fit for this data (SRMR = .046, CFI = .939, RMSEA = .050), and the hope interaction model showed a significant improvement over the main effect model. The main effect model showed a statically significant ( $p < .001$ ) negative direct relationship between hope and psychological distress, and a significant positive direct relationship between hope and life satisfaction. In addition, the interaction model revealed that hope moderated negative life events' prediction of psychological distress while hope did not moderate the effects of negative life events on satisfaction.

Throughout the literature, hope was found to be negatively related to undesirable psychological outcomes, and positively related to desirable outcomes. Regarding undesirable outcomes, hope was negatively related to depression (Michael & Snyder, 2005; Peleg et al.,

2009; Radwin et al., 2013; Visser et al., 2013) and anxiety (Michael & Snyder, 2005; Radwin et al., 2013). In addition, there have been studies examined the moderating effects of hope on the relationships between various variables including psychological distress or negative life events.

In Tucker's et al. (2013) study, which was mentioned above, the moderating effects of hope on rumination was tested. They found that hope moderated the relationship between rumination and suicidal ideation. Hope also significantly moderated the relationship between two components of rumination such as brooding and reflection and suicidal ideation (Tucker et al., 2013). Regarding negative live events as an independent variable, Visser et al. (2013) examined the moderating effects of hope on the relationship between negative life events and depressive symptoms among 386 undergraduate students. They found a significant negative ( $r = -.52, p < .001$ ) relationship between hope and depressive symptoms. Hope also significantly moderated the relationship between negative life events and depressive symptoms. In other words, there was a weakened relationship between negative life events and depressive symptoms when hope increased (Visser et al. 2013).

Additionally, the literature has shown the relationship between hope and psychological distress. Horton and Wallander (2001) examined the direct and moderating effects of hope on the distress level of mothers of children with chronic physical conditions ( $N = 111$ ). Results showed that hope was significantly related to distress, and also significantly moderated the relationships between disability-related stress and distress. When mothers had higher level of hope, the relationship between disability-related stress and distress was lower (Horton & Wallander, 2001). Similarly, Glass, Flory, Hankin, Kloos, and Turecki (2009) found that there were significantly negative direct relationships between hope and general psychological distress ( $\beta = -$

.26,  $p < .01$ ) and posttraumatic stress disorder ( $\beta = -.18$ ,  $p < .01$ ) among 228 adult survivors of Hurricane Katrina. In that study, hope also was found as a significant moderator between avoidant coping and general psychological distress (Glass et al., 2009). Thus, the findings of previous studies, which showed the relationship between hope and various psychological outcomes such as psychological distress, and moderating effects of hope on variables such as negative life events, are consistent with results of this study.

On the other hand, some studies have shown a positive relationship between hope and positive outcomes. For example, Radwin et al. (2013) found hope to be correlated with well-being. In another study with middle school students, hope was positively related to school engagement, life-satisfaction, self-worth, and mental health (Marques et al., 2015). Regarding life satisfaction, Rustoen et al. (2010) found a positive relationship between hope and life satisfaction. Similarly, Michael and Synder (2005) found hope was related to psychological well-being. As mentioned previously, the main effect model in this study revealed that hope was positively related to life satisfaction. Hence, this result was consistent with literature. However, no studies could be found that examined the moderating effects of hope on life satisfaction. In this study, unexpectedly, hope was not a significant moderator on the relationship between negative life events and life satisfaction.

To sum up, even though hope did not moderate the effects of negative life events on life satisfaction, hope buffered the effects on psychological distress. This showed that hope can contribute to coping with negative life events and reduce their effects on psychological distress. On the other hand, hope did not significantly generate more positive emotions (life satisfaction) as a result of negative experiences (negative life events). Nonetheless, hope had a significant

direct relationship with life satisfaction, which was consistent with the literature. Hence, it is still possible to conclude that hope has a potential to enhance life satisfaction.

#### Gratitude as a moderator

Research questions Seven and Eight examined the moderating effect of gratitude on negative life events' prediction of psychological distress and life satisfaction, respectively. Questions Seven and Eight both used a gratitude main effect model (see Figure 19) and a gratitude interaction model (see Figure 20). The gratitude main effect model was fit for this data (RMR = .045, CFI = .962, RMSEA = .045), and the gratitude interaction model showed a significant improvement over the main effect model. The main effect model showed a statistically significant ( $p < .001$ ) negative direct relationship between gratitude and psychological distress and a significant positive direct relationship between gratitude and life satisfaction. In addition, the interaction model revealed that gratitude moderated negative life events' prediction of psychological distress whereas it did not moderate the effects of negative life event on life satisfaction.

The literature has documented that gratitude is negatively related to undesirable psychological outcomes such as depression, stress, negative affectivity (i.e., McCullough et al., 2002; Watkins et al., 2003; Wood et al., 2008). In a study with 1252 Chinese middle school students, Li, Zhang, Li, Li, and Ye (2012) found that lower gratitude significantly predicted suicidal ideation and attempts. Among Taiwanese undergraduate students ( $N = 814$ ), a direct relationship was found between gratitude and self-esteem, depression, and suicidal ideation (Lin, 2015). In another study with Italian university students ( $N = 410$ ), Petrocchi and Couyoumdjian (2016) also found a significant direct effects of gratitude on depression and anxiety. Despite this,



no studies have been found that examined the buffering effects of gratitude on negative life event or psychological distress. Thus, the results of this study related to moderating effects of gratitude on the impacts of negative life events on psychological distress may be important in understanding the functions of gratitude in coping and prevention.

On the other hand, there are positive relationships between gratitude and various desirable outcomes; such well-being, positive effectivity, dispositional empathy, hope, optimism, social support, and happiness (i.e., McCullough et al., 2002; Tian, Du, & Huebner, 2015; Watkins et al., 2003). More specifically, the literature has shown a strong relationship between life satisfaction and gratitude. In a study with 338 Italian citizens, Szcześniak and Soares (2011) found a strong significant correlation ( $r = .49, p < .01$ ) between gratitude and life satisfaction. Similarly, Datu and Mateo (2015) found a significant correlation ( $r = .43, p < .001$ ) between gratitude and life satisfaction among Filipino college students ( $N = 409$ ). In the present study, the main effect model revealed that gratitude was negatively related to psychological distress and positively related to life satisfaction. Therefore, the results of this study confirm the previous findings in the literature.

Regarding moderation, in this study gratitude did not significantly moderate the effects of negative life events on psychological distress. Though a review of the literature has not turned up any studies specifically investigating the moderating effects of gratitude on negative life events, Roberts, Tsang, and Manolis (2015) examined potential moderating effects of gratitude on the relationships between materialism and negative events and life satisfaction among 246 undergraduate students. Results revealed that gratitude significantly buffered the relationships between materialism and negative events. Positive affect refers to positive feeling (joy, happy,

contented) whereas negative affect refers to negative feelings (sad, angry, and afraid; Diener et al., 2010) When gratitude was higher, the impact of materialism on negative effect was less than. On the other hand, gratitude did not moderate the relationship between materialism and life satisfaction (Robert et al., 2015). Even though in Robert's et al. study did not include the moderating effects of gratitude on negative life events, gratitude still did not moderate the effects of the independent variable (materialism) on life satisfaction. Therefore, gratitude did not become a significant moderator effects for life satisfaction. From this perspective, it might be concluded that results of Robert's et al. (2015) study are consistent with the findings of this study.

In brief, the interaction model showed that gratitude significantly buffered the effects of negative life events on psychological distress. Thus, gratitude may contribute to coping with negative life issues and reducing psychological distress. However, gratitude did not buffer the effects of negative life events on life satisfaction even though a positive direct relationship was found between gratitude and life satisfaction. Because there was a significant direct relationship between gratitude and life satisfaction, it is still possible to make a conclusion that gratitude can potentially elevate life satisfaction.

### Optimism, Hope, and Gratitude in Coping

Coping refers to how people handle problems. Coping is “the thoughts and behaviors used to manage the internal and external demands of situations that are appraised as stressful” (Folkman & Moskowitz, 2004, p. 745). In addition, Snyder (1999) defined coping strategies as “responses that are effective in reducing an undesirable ‘load’ (i.e., the psychological burden)”

(p. 5). Thus, coping is about handling life events in order to reduce negative outcomes including psychological distress.

By contrast, optimism, hope, and gratitude are variables emphasized in positive psychology (Lopez & Snyder, 2003; 2011) that are negatively related to undesirable outcomes. In this study, optimism, hope, and gratitude did buffer the effects of negative life events on psychological distress. The purpose of coping is to reduce undesirable emotions (Snyder, 1999), so these variables lessened the psychological distress predicted by life events. As a result, optimism, hope, and gratitude showed potential to assist in coping with life events. Thus, this study confirms that positive variables such of these have relevance for the coping literature. As indicated previously, Lazarus's coping model might well be modified to include the production of positive emotions, beyond his focus on emotional palliatives.

#### Moderating Effects of Optimism, Hope, and Gratitude and Life satisfaction

In this study, optimism, hope, and gratitude did not moderate the effects of negative life events on life satisfaction, so null hypotheses four, six, and eight were not rejected. As explained, previous literature has shown relationships between these variables and life satisfaction, so it was expected that optimism, hope, and gratitude would moderate the effects of negative life events on life satisfaction. However, there are also contradictory findings about moderating effects of these variables for life satisfaction. For example, Chen's et al. (2016) findings showed that optimism did not moderate the effects of socioeconomic status on life satisfaction. In another study, gratitude was not found to be a moderator between materialism and life satisfaction (Roberts et al., 2015). Even though in this study and in the literature, overall, these variables have been found as a moderator between predictor variables and negative outcome variables (e.g.

psychological distress), I did not find them as significant moderator on life satisfaction, as logically consistent with Chen et al. (2016) and Roberts et al. (2015).

In order to interpret this result, we need to look at the stability of subjective well-being and life satisfaction. Subjective well-being refers to one individual's self-perception of his or her life as whole (Diener, Oishi, & Lucas, 2011). In addition, subjective well-being is a broad concept including life satisfaction (Diener et al., 2011). Trait theory argues that "there is an element of stability in people's levels of well-being that cannot be explained by the stability of the conditions of people's lives, and that subjective well-being is strongly influenced by stable personality disposition" (Diener et al., 2011; p.189). Hence, it can be argued that optimism, hope, and gratitude did not lessen the effect of negative life events on life satisfaction because life satisfaction tends to be stable and not easily influenced by stable personality traits. The results showed that optimism, hope, and gratitude are still directly related to life satisfaction. Therefore, these results are consistent with the trait theory of subjective well-being because optimism, hope, and gratitude are trait variables.

### Limitations

This study contributed to understanding the relationships between negative life events and psychological distress and life satisfaction. The study also shed light on the effects of optimism, hope, and gratitude in coping. However, there are several limitations to consider.

### Research Design

The major limitation of this study was its correlational approach which tested relationships between variables from a set of data. Although correlational statistics help to

understand cause and effect relationship, it is not possible to make a strong conclusion about causality (Gall et al., 2007). For this study, negative life events' predictions of psychological distress and life satisfaction give insight in understanding the concepts. However, it is difficult to make a conclusion identifying causality. The results showed the relationships between negative life events and psychological distress and life satisfaction, but it is not possible to state that negative life events caused more psychological distress and less life satisfaction. Nevertheless, negative life events are natural changes in one's life, so psychological distress or life satisfaction cannot cause negative life events. In addition, the results showed optimism, hope, and gratitude negatively related to psychological distress and positively related to life satisfaction.

### Sampling

The sampling method of this study was criteria sampling. This means subjects were included in the study who met specific criteria. There were two criteria: (a) being an undergraduate student, and (b) being older than 18 years of age. The target population of this study was undergraduate students in the U.S., and the accessible population was a large Southern university in the U.S. Therefore, caution should be taken before generalizing the results to all undergraduate students.

### Instrumentation and Data Collection

The primary limitation regarding instrumentation was the LES which measured life events. The LES negative life events total score was used in this study. Each item of the LES was rated from extremely negative (-3) to extremely positive (+3); negative values were summed up for negative life events total score. Because each item can measure each event as either positive

or negative, the internal reliability of the negative life event score was able to be calculated. Thus, the limitation includes the lack of reliability and validity of the LES. In addition, all the instruments in the study suffer from the limitation that they are self-report.

### Implications

The results of the current study contributed to the counseling literature as follows: (a) confirmation of negative life events as predictors of psychological distress and life satisfaction, and (b) recognition that optimism, hope, and gratitude are moderators of the effects of negative life events on psychological distress. In addition, there are implications for college counselors and counselor educators.

#### Implications for College Counselors

College students experience numerous symptoms of psychological distress, including hopelessness, psychological exhaustion, feeling overwhelmed, anxiety, suicide, depression, and panic attacks (ACHA, 2014; Gallagher, 2014). Psychological distress is also a growing issue for college students (Deasy et al., 2014; Samuolis et al., 2015). Moreover, according to data from the National Survey of College Counseling Centers (Gallagher, 2014), 11% of students in their study sought counseling to deal with psychological issues they experienced. In addition, the literature documented that negative life events predicted various psychological issues for college students (Beasley et al., 2003; Hirsch et al., 2007; Li et al., 2013; Visser et al., 2013). As the results of this study showed, college counselors should be aware that negative life events can be the reason for difficulties that clients experience. Therefore, college counselors should be aware of coping

strategies to deal with negative life events and should assess their impact at intake if they are to understand the source of client problems and the means to alleviate them.

Throughout the literature, many techniques and interventions to cope with stress and negative life events have been identified (e.g., Cohen, 1988; Inglehart, 1991; Snyder & Ford, 1987). For example, in an experimental study, Nassif and Wells (2014) tested the effectiveness of an Attention Training Technique on reducing intrusions in participants that had experienced stressful life events. The experimental group received two sessions of Attention Training Technique, and practiced the skills at home whereas control group only received a filler task. The results showed that the test subjects were able to reduce intrusions significantly more than the control group (Nassif & Wells, 2014). However, the means for coping with negative life events and stressors vary depending on different factors such as personality, time, or type of occasions. Snyder and Ford (1987) emphasized two points about the varieties of coping: (a) coping is an ongoing process, and (b) there might be more than one type of coping responses in real life situations. Therefore, college counselors should be aware of various techniques such as this attention technique as well as other interventions in order to help their clients dealing with negative life events.

Another implication for college counselors include assessment in counseling. As the literature and the results of this study showed, non-traumatic negative life events can be the source of various psychological issues including psychological distress. Hence, college counselors should be aware that collecting information about recent life issues, even those which are not considered trauma, can be helpful to understand roots of clients' problems. The implication for college counselors is to consider broadening assessment and treatment

perspectives in counseling. Historically, it has been argued that psychology successfully focuses on the negative side of life (Lopez & Gallagher, 2011; Maslow, 1954). Yet positive psychology can be a complementary treatment to diagnosis centered approaches (Positive Psychology Institute, 2012). Thus, college counselors should also focus on the strengths of clients and positive variables such as optimism, hope, and gratitude during assessment and treatment because of their moderating effects.

The results of this study also revealed that optimism, hope, and gratitude lessened the effects of negative life events on psychological distress. Thus, college counselors should be knowledgeable of these variables. College counselors should receive additional training in techniques to enhance these variables and not merely on those which decrease negative emotions. It is believed that working with clients in counseling on these variables can be helpful for more successful coping process. College counselors should be aware that enhancing these variables with clients can help clients to deal with life difficulties and eventually reduce distress levels. Thorough the literature, several techniques and interventions to enhance optimism, hope and gratitude have been developed and examined, and there are several sources available for college counselors (e.g., Lopez & Snyder, 2011; Parks & Schueller, 2014; Proctor & Linley, 2013).

### Enhancing optimism

Whether optimism can be enhanced, how large the change can be obtained, and how long it will remain have been described (Carver et al., 2011). Carver et al. (2011) mentioned that cognitive-behavioral therapies and techniques can be helpful for clients to enhance optimism. Basically, when people are faced with difficulties, they may develop negative cognitive



distortions, and this may lessen their motivation to attain their goals. Hence, cognitive-behavioral theories or techniques can help clients to replace negative thoughts with more positive ways of thinking and should include the development of an optimistic perspective rather than merely eliminating self-defeating thoughts (Carver et al., 2011).

Antoni et al. (2001) examined the effects of cognitive-behavioral stress management intervention among 100 women who had recently treatment for breast cancer. Optimism was defined as one of the outcome variables. Participants were randomly assigned to experimental and control groups. Experimental group received weekly two-hour cognitive-behavioral stress management sessions for ten weeks whereas control group only received one-day seminar that provided information of stress management. Results showed that the optimism level of participants in the experimental group significantly increased after the treatment. The results also showed that the increases in optimism level of the experimental group at follow-up points (3-month and 9-month intervals) from the baseline were still significant. Change in optimism level of the participants in the control group was not significant (Antoni et al. 2001). Thus, it appears that optimism may take significant training. In summary, there have been techniques and interventions that can be helpful in enhancing optimism levels. College counselors should be aware of these techniques and interventions, and be able to integrate them into their practices.

### Enhancing hope

Regarding promoting hope, there are various interventions and techniques available to the counselor. In addition, several studies have examined the effectiveness of these techniques and interventions throughout the literature. For example, Rustoen, Cooper, & Miaskowski (2011) developed the hope intervention (HOPE-IN) and tested the effectiveness of HOPE-IN on

changes of hope level of 195 patients (37 males and 157 females) who had breast cancer. Participants received eight 2-hour sessions of HOPE-IN over eight weeks, in which cognitive and behavioral techniques were combined. Results showed that hope significantly increased right after the treatment. However, hope slightly decreased at 3-month and 12-month following the treatment. In addition, Rustoen et al. (2011) stated that most of the participants indicated that they found HOPE-IN helpful.

Similarly, Thornton et al. (2014) developed a treatment model combining Mindfulness, Hope Therapy, and biobehavioral components for woman ( $N = 32$ ) with recurrent breast or gynecological cancers. Twenty treatment sessions were delivered in individual or group format. All treatment was provided in two phases: (a) an intensive phase which included 16 weekly sessions, and (b) a maintenance phase which involved two biweekly and two monthly sessions. Results showed that total hope scores significantly increased from baseline to seven months. In addition, hope pathway subscale scores significantly increased, whereas increase in the hope agency subscale score was not significant. (Thornton et al., 2014). Basically pathway subscale measures individuals believe about generating future goals, and agency subscale measures one's belief about reaching these goals (Snyder et al., 1991). As Thornton's et al. (2014) study showed, the treatment statically increased pathway (generating goals), but did not increase agency (motivation to pursuit goals).

In another study with Taiwanese patients with mild and moderate dementia, Wu and Koo (2016) found that a six-week reminiscence therapy increased the level of hope of participants in the experimental group ( $n = 53$ ) whereas hope decreased in the control group ( $n = 50$ ). In addition, Griffith (2014) found that eight-week group counseling intervention significantly

increased the hopefulness of lesbian, gay, bisexual, transgender, and queer (LGBTQ+) older adolescent participants ( $N = 34$ ). As documented in these studies, there are a number of possible techniques, interventions, and therapies which can promote increasing the level of hope. College counselors should be knowledgeable about these methods, and use them to help their clients dealing with negative life events.

### Enhancing gratitude

Gratitude has been studied regarding its relationship to various psychological issues and many gratitude techniques and interventions have been developed. The literature also suggests that gratitude-based interventions and techniques have showed effectiveness in improving desirable outcomes, and diminishing undesirable outcomes. Young and Hutchinson (2012) mentioned that “there is sufficient evidence to recommend the use of gratitude-based interventions,” (p. 109) even though gratitude research is still new and needs to develop.

Senf and Liao (2013) tested the gratitude-based intervention, in which participants were asked to write a letter to someone whom they feel grateful to and have never thanked. They were also asked to keep a diary about three things that went well for them. The researchers found that the gratitude-based intervention significantly increased participants' level of happiness at post-treatment, but no significant difference was observed between experimental and control group at 1-month follow-up. The results also revealed that depression significantly decreased in the experimental group compared to control group at 1-month follow-up. However, there was no significant difference in depression between experimental and control group at post-treatment. Thus, gratitude-based intervention helped increasing happiness in short term, and decreasing depression in long-term duration (Senf & Liao, 2013).

In another experimental study, Rash, Matsuba, and Prkachin (2011) tested the effectiveness of a 4-week gratitude contemplation intervention program on well-being among 56 adults. The experimental group was asked to remember grateful moments or people, and to recall and maintain grateful feelings. Control group was only asked to remember memorable events in their lives, not specifically those that they were grateful for. Well-being and self-esteem significantly increased in the experimental group compared to control group (Rash et al., 2011). In another study, studying 63 Chinese school teachers, Chan (2011) found that eight-week self-improvement gratitude program increased life satisfaction and self-accomplishment, and decreased emotional exhaustion. Participants were asked to keep weekly reports about good things or events that happened, and to reflect on them (Chang, 2011). Overall, as the literature documented, gratitude-based interventions hold promise for improving psychological well-being and helping individuals deal with negative emotions. Regarding counselors' practice, Young and Hutchinson (2012) said that counselors should consider using gratitude-based techniques themselves for helping counselors who are dealing with burnout or stress. Thus, counselors should be knowledgeable and aware of gratitude-based interventions and techniques, integrate them into their counseling services to help clients deal with negative life events or stress.

### Prevention

Negative life events are non-avoidable over the life-course (Kidwai et al., 2014), and college students experience various negative life events such as financial difficulties, relationship issues, or changing environments (Beasley et al., 2003; Li et al., 2013). A number of studies have shown that non-traumatic negative life events are predictors of various psychological outcomes

such as depressive symptoms, anxiety, mental health symptoms (e.g., Murberg & Bru, 2009; Phillips et al., 2015; Rubens et al., 2013; Tucker & Kelley, 2009; Visser et al., 2013).

Additionally, the negative life events that college students most frequently experience are non-traumatic, but their effects on psychological well-being are still notable. For example, Anders, Frazier, and Shallcross (2012) examined the prevalence and effects of Criterion A1 and non-Criterion A1 (as defined by the DSM-IV-TR) events in college students ( $N = 842$ ) in two-month interval longitudinal study. Criterion A1 events generally refer to intense traumatic events such as “death or serious injury or a threat to physical integrity” (p. 450) whereas non-Criterion A events refer to non-traumatic negative life events such as relationship difficulties. Prevalence rates of non-traumatic negative life events changed from 20% to 0.3% whereas rates of traumatic negative life events changed from 6% to 0.4%. In addition, 59% of the participants reported at least one non-traumatic negative life event. Results also revealed that unexpectedly, non-traumatic negative life events were more related to outcomes such as posttraumatic stress disorder, distress, life satisfaction, and mental health than traumatic negative life events (Anders et al., 2012). As a result, non-traumatic negative life events are considerable risk factors for mental health and well-being in college students.

Based on this study and previous research, college counselors should consider preventive counseling services. Prevention attempts to “prevent psychological and physical ills and promote overall health and well-being through evidence-based practices at individual and systemic levels” (Romano, 2015, p.3). As the results of this study showed, optimism, hope and gratitude are potential contributor to coping with negative life events. Hence, college counselors should consider delivering psychoeducational interventions promoting college students’ optimism, hope

and gratitude in advance in order to help students dealing with negative life events and preventing the negative effects of life events.

### Implications for Counselor Educators

Based on the results of this study, because negative life events can be predictors of psychological distress, counselor educators should prepare counselors-in-training to be more knowledgeable and aware of the effects of negative life events. Counselor educators should also teach students to be more competent about helping clients to cope with negative life events. There are a number techniques and interventions (e.g. Attention Training Technique [Nassif & Wells, 2014]) to deal with negative life events, which have been developed and tested throughout the literature (e.g., Cohen, 1988; Inglehart, 1991; Snyder & Ford, 1987).

In addition, counselor educators should educate students about the importance of taking negative life events histories during client assessments. A history of trauma is generally well assessed during intake-interview or counseling, but as literature has showed (e.g., Murberg & Bru, 2009; Tucker & Kelley, 2009; Visser et al., 2013), non-traumatic negative life events are also important predictors of mental health. Thus, it can be helpful to learn how to assess negative life events and the means for coping with them so as to help future clients. Counselor educators should also train students in interventions and techniques to enhance optimism, hope, and gratitude. Techniques or interventions for optimism, hope, and gratitude should be included in counselor education programs, as a course or as a part of a course. Therefore, students can be better prepared to help clients cope with life events.

There is no consensus related to teaching positive psychology in a counseling curriculum. However, various studies have shown the effectiveness of positive variables on mental health,

and the effects of positive psychology interventions on emotions. Abnormal psychology, which is related to negative emotions and dysfunction is required in nearly all counseling programs. Students need to complete their knowledge with positive emotions and preventive mental health (Lopez & Gallagher, 2011). Lopez and Gallagher (2011) stated that “it is more effective to note that wherever there is fear, there is hope” (p. 4). Thus, counselors’-in-training should be knowledgeable about positive psychology in addition to their knowledge about abnormal psychology.

### Future Research

Future studies should consider the limitations of the current study. One primary limitation of this study was that correlational studies cannot make a strong conclusion about causality. Thus, future studies designed as longitudinal and experimental should address the relationship between negative life events and psychological distress and life satisfaction to help draw more definitive conclusions about causality. In addition, experimental studies with college students which focus on utilizing these positive psychology variables to improve coping and enhance life satisfaction should be conducted. Similarly, it would be beneficial to integrate techniques or interventions for enhancing optimism, hope, and gratitude into individual or group counseling.

Finally, this study was not able to explain the dynamic process of how optimism, hope, and gratitude function to deal with life issues. For example, how do these variables function in primary and secondary appraisal in Lazarus’s model of coping (Lazarus & Folkman, 1984)? In addition, the functions of optimism, hope, and gratitude in problem-focused or emotion-focused coping are not known. Thus, future qualitative studies will be helpful to better understand these dynamics.

## **APPENDIX A: IRB APPROVAL LETTER**





University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

## Approval of Exempt Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To: Abdi Gungor

Date: January 14, 2016

Dear Researcher:

On 01/14/2016, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: Investigating the Moderating Effects of Optimism, Hope and Gratitude on the Relationship between Negative Life Events and Psychological Distress  
Investigator: Abdi Gungor  
IRB Number: SBE-16-11936  
Funding Agency:  
Grant Title:  
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

A handwritten signature in black ink that reads "Joanne Muratori".

Signature applied by Joanne Muratori on 01/14/2016 11:10:58 AM EST

IRB Manager

## **APPENDIX B: EXPLANATION OF RESEARCH**



### **EXPLANATION OF RESEARCH**

Title of Project: Investigating the Moderating Effects of Optimism, Hope and Gratitude on the Relationship between Negative Life Events and Psychological Distress

Principal Investigator: Abdi Gungor

Faculty Supervisor: Mark E. Young, Ph.D.

You are being invited to take part in a research study. Whether you take part is up to you.

The purpose of this study is to examine the moderating effects of optimism, hope, and gratitude on the relationship between negative life events, psychological distress, and life satisfaction.

If you agree to participate this study, you will be asked to complete a packet of six surveys, and some general demographic questionnaires. Your participation in the study and any information you share is **anonymous**.

We expect that you will complete this research study in 20-30 minutes.

You must be 18 years of age or older to take part in this research study.

Your participation in this research project is **voluntary**. You do **not** have to participate and you do **not** have to answer any question(s) that you do not wish to answer. You may withdraw from the study at any time without consequences.

**Study contact for questions about the study or to report a problem:** If you have questions, concerns, or complaints, please contact Abdi Gungor, Doctoral Candidate, Counselor Education Program, College of Education and Human Performance, (407) 823-3063 or Dr. Mark E. Young, Faculty Supervisor, Department of Child, Family, and Community Sciences at (407) 823-3063 or by email at [mark.young@ucf.edu](mailto:mark.young@ucf.edu).

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

## **APPENDIX C: THE LIFE EXPERIENCES SURVEY**

**The Life Experiences Survey**  
(Sarason, Johnson, & Siegel, 1978)

**Instruction:** Please check the events which you have experienced in the last **12 months**. Also, for each item checked below, please indicate the extent to which you viewed the event as having **either a positive or negative impact on your life** at the time the event occurred. That is, indicate the type and extent of impact that the event had. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests no impact either positive or negative. A rating of +3 would indicate an extremely positive impact.

	extremely negative	moderately negative	somewhat negative	no impact	slightly positive	moderately positive	extremely positive
1. Marriage	-3	-2	-1	0	+1	+2	+3
2. Detention in jail or comparable institution	-3	-2	-1	0	+1	+2	+3
3. Death of spouse	-3	-2	-1	0	+1	+2	+3
4. Major change in sleeping habits (much more or much less sleep)	-3	-2	-1	0	+1	+2	+3
5. Death of close family member:	-3	-2	-1	0	+1	+2	+3
a. mother	-3	-2	-1	0	+1	+2	+3
b. father	-3	-2	-1	0	+1	+2	+3
c. brother	-3	-2	-1	0	+1	+2	+3
d. sister	-3	-2	-1	0	+1	+2	+3
e. grandmother	-3	-2	-1	0	+1	+2	+3
f. grandfather	-3	-2	-1	0	+1	+2	+3
g. other	-3	-2	-1	0	+1	+2	+3
6. Major change in eating habits (much more or much less food intake)	-3	-2	-1	0	+1	+2	+3
7. Foreclosure on mortgage or loan	-3	-2	-1	0	+1	+2	+3
8. Death of close friend	-3	-2	-1	0	+1	+2	+3
9. Outstanding personal achievement	-3	-2	-1	0	+1	+2	+3
10. Minor law violations (traffic tickets, disturbing the peace, etc.)	-3	-2	-1	0	+1	+2	+3
11. Male: Wife/girlfriend's pregnancy	-3	-2	-1	0	+1	+2	+3

12. Female: Pregnancy	-3	-2	-1	0	+1	+2	+3
13. Changed work situation (different work responsibility, major change in working conditions, working hours, etc.)	-3	-2	-1	0	+1	+2	+3
14. New job	-3	-2	-1	0	+1	+2	+3
15. Serious illness or injury of close family member:	-3	-2	-1	0	+1	+2	+3
a. father	-3	-2	-1	0	+1	+2	+3
b. mother	-3	-2	-1	0	+1	+2	+3
c. sister	-3	-2	-1	0	+1	+2	+3
d. brother	-3	-2	-1	0	+1	+2	+3
e. grandfather	-3	-2	-1	0	+1	+2	+3
f. grandmother	-3	-2	-1	0	+1	+2	+3
g. spouse	-3	-2	-1	0	+1	+2	+3
h. other	-3	-2	-1	0	+1	+2	+3
16. Sexual difficulties	-3	-2	-1	0	+1	+2	+3
17. Trouble with employer (in danger of losing job, being suspended, demoted, etc.)	-3	-2	-1	0	+1	+2	+3
18. Trouble with in-laws	-3	-2	-1	0	+1	+2	+3
19. Major change in financial status (a lot better off or a lot worse off)	-3	-2	-1	0	+1	+2	+3
20. Major change in closeness of family members (increased or decreased closeness)	-3	-2	-1	0	+1	+2	+3
21. Gaining a new family member (through birth, adoption, family member moving in, etc.)	-3	-2	-1	0	+1	+2	+3
22. Change of residence	-3	-2	-1	0	+1	+2	+3
23. Marital separation from mate (due to conflict)	-3	-2	-1	0	+1	+2	+3
24. Major change in church activities (increased or decreased attendance)	-3	-2	-1	0	+1	+2	+3
25. Marital reconciliation with mate	-3	-2	-1	0	+1	+2	+3
26. Major change in number of arguments with spouse (a lot more or a lot less arguments)	-3	-2	-1	0	+1	+2	+3
27. Married male: Change in wife's work outside the home (beginning work, ceasing work, changing to a new job, etc.)	-3	-2	-1	0	+1	+2	+3
28. Married female: Change in husband's work (loss of job, beginning new job, retirement, etc.)	-3	-2	-1	0	+1	+2	+3
29. Major change in usual type and/or amount of recreation	-3	-2	-1	0	+1	+2	+3
30. Borrowing more than \$10,000 (buying home, business, etc.)	-3	-2	-1	0	+1	+2	+3

31. Borrowing less than \$10,000 (buying car, TV, getting school loan, etc.)	-3	-2	-1	0	+1	+2	+3
32. Being fired from job	-3	-2	-1	0	+1	+2	+3
33. Male: Wife/girlfriend having abortion	-3	-2	-1	0	+1	+2	+3
34. Female: Having abortion	-3	-2	-1	0	+1	+2	+3
35. Major personal illness or injury	-3	-2	-1	0	+1	+2	+3
36. Major change in social activities, e.g., parties, movies, visiting (increased or decreased participation)	-3	-2	-1	0	+1	+2	+3
37. Major change in living conditions of family (building new home, remodeling, deterioration of home, neighborhood, etc.)	-3	-2	-1	0	+1	+2	+3
38. Divorce	-3	-2	-1	0	+1	+2	+3
39. Serious injury or illness of close friend	-3	-2	-1	0	+1	+2	+3
40 Retirement from work	-3	-2	-1	0	+1	+2	+3
41. Son or daughter leaving home (due to marriage, college, etc.)	-3	-2	-1	0	+1	+2	+3
42. Ending of formal schooling	-3	-2	-1	0	+1	+2	+3
43. Separation from spouse (due to work, travel, etc.)	-3	-2	-1	0	+1	+2	+3
44. Engagement	-3	-2	-1	0	+1	+2	+3
45. Breaking up with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
46. Leaving home for the first time	-3	-2	-1	0	+1	+2	+3
47. Reconciliation with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
Other experiences which have had an impact on your life. List and rate.	-3	-2	-1	0	+1	+2	+3
48. _____	-3	-2	-1	0	+1	+2	+3
49. _____	-3	-2	-1	0	+1	+2	+3
50. _____	-3	-2	-1	0	+1	+2	+3
51. Beginning a new school experience at a higher academic level (college, graduate school, professional school, etc.)	-3	-2	-1	0	+1	+2	+3
52. Changing to a new school at same academic level (undergraduate, graduate, etc.)	-3	-2	-1	0	+1	+2	+3
53. Academic probation	-3	-2	-1	0	+1	+2	+3
54. Being dismissed from dormitory or other residence	-3	-2	-1	0	+1	+2	+3

55. Failing an important exam	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>
56. Changing a major	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>
57. Failing a course	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>
58. Dropping a course	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>
59. Joining a fraternity/sorority	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>
60. Financial problems concerning school (in danger of not having sufficient money to continue)	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>



**APPENDIX D: LIFE ORIENTATION TEST-REVISED (LOT-R)**

### Life Orientation Test-Revised (LOT-R)

**Instruction:** Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In uncertain times, I usually expect the best.	1	2	3	4	5
2. It is easy for me to relax.	1	2	3	4	5
3. If something can go wrong for me, it will.	1	2	3	4	5
4. I am always optimistic about my future.	1	2	3	4	5
5. I enjoy my friends a lot.	1	2	3	4	5
6. It is important for me to keep busy.	1	2	3	4	5
7. I hardly ever expect things to go my way.	1	2	3	4	5
8. I don't get upset too easily	1	2	3	4	5
9. I rarely count on good things happening to me.	1	2	3	4	5
10. Overall, I expect more good things to happen to me than bad.	1	2	3	4	5

## **APPENDIX E: ADULT DISPOSITIONAL HOPE SCALE (ADHS)**

### Adult Dispositional Hope Scale (ADHS)

**Directions:** Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

	Definitely False	Mostly False	Mostly True	Definitely True
1. I can think of many ways to get out of a jam.	1	2	3	4
2. I energetically pursue my goals.	1	2	3	4
3. I feel tired most of the time.	1	2	3	4
4. There are lots of ways around any problem.	1	2	3	4
5. I am easily downed in an argument.	1	2	3	4
6. I can think of many ways to get the things in life that are important to me.	1	2	3	4
7. I worry about my health.	1	2	3	4
8. Even when others get discouraged, I know I can find a way to solve the problem.	1	2	3	4
9. My past experiences have prepared me well for my future.	1	2	3	4
10. I have been pretty successful in life.	1	2	3	4
11. I usually find myself worrying about something.	1	2	3	4
12. I meet the goals that I set for myself.	1	2	3	4

**APPENDIX F: THE GRATITUDE QUESTIONNAIRE-6 (GQ-6)**

## The Gratitude Questionnaire-6 (GQ-6)

**Direction:** Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1. I have so much in life to be thankful for.	1	2	3	4	5	6	7
2. If I had to list everything that I felt grateful for, it would be a very long list.	1	2	3	4	5	6	7
3. When I look at the world, I do not see much to be grateful for.	1	2	3	4	5	6	7
4. I am grateful to a wide variety of people.	1	2	3	4	5	6	7
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.	1	2	3	4	5	6	7
6. Long amounts of time can go by before I feel grateful to something or someone.	1	2	3	4	5	6	7

**APPENDIX G: THE KESSLER PSYCHOLOGICAL DISTRESS SCALE  
(K10)**

### The Kessler Psychological Distress Scale (K10)

**Direction:** These questions concern how you have been feeling over the past 30 days. For all questions, please circle the appropriate response.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. About how often did you feel tired out for no good reason?	1	2	3	4	5
2. About how often did you feel nervous?	1	2	3	4	5
3. About how often did you feel so nervous that nothing could calm you down?	1	2	3	4	5
4. About how often did you feel hopeless?	1	2	3	4	5
5. About how often did you feel restless or fidgety?	1	2	3	4	5
6. About how often did you feel so restless you could not sit still?	1	2	3	4	5
7. About how often did you feel depressed?	1	2	3	4	5
8. About how often did you feel that everything was an effort?	1	2	3	4	5
9. About how often did you feel so sad that nothing could cheer you up?	1	2	3	4	5
10. About how often did you feel worthless?	1	2	3	4	5



## **APPENDIX H: THE SATISFACTION WITH LIFE SCALE (SWLS)**

### The Satisfaction with Life Scale (SWLS)

**Instructions:** Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
1. In most ways my life is close to my ideal.	1	2	3	4	5	6	7
2. The conditions of my life are excellent.	1	2	3	4	5	6	7
3. I am satisfied with my life.	1	2	3	4	5	6	7
4. So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
5. If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

## **APPENDIX I: THE DEMOGRAPHIC QUESTIONNAIRE**

## The Demographic Questionnaire

1. Your Gender
  - a. Female
  - b. Male
  - c. Transgender
  - d. Self-identify, please describe:
  
2. Your Age \_\_\_\_\_
  
3. Your Ethnicity
  - \_\_\_\_\_ White, Non-Hispanic
  - \_\_\_\_\_ Hispanic/Latino(a)
  - \_\_\_\_\_ American Indian/Alaska Native
  - \_\_\_\_\_ Other: \_\_\_\_\_
  - \_\_\_\_\_ Asian
  - \_\_\_\_\_ African American/Black
  - \_\_\_\_\_ Hawaiian Native / Pacific Islander
  
4. Where are you in your college schooling?
  - a. First year
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Other, please specify:
  
5. Your Major, please indicate:
  
6. Relationship Status: Please identify your current relationship status
  - a. Single
  - b. In a relationship
  - c. Engaged
  - d. Married/partnered
  - e. Divorced
  - f. Separated
  - g. Other, please specify:
  
7. How would you rate your socio economic status?  
Very Bad 1 – 2 – 3 – 4 – 5 Very Good

## **APPENDIX J: LES EMAIL APPROVAL**

Irwin Sarason <isarason@u.washington.edu>

You have my permission to use the LES. There is no manual. You will find pertinent material <http://web.psych.washington.edu/research/sarason/>

Irwin Sarason

Irwin Sarason  
Department of Psychology  
Box 351525  
University of Washington  
Seattle, Washington 98195  
Phone: 206-543-6542  
Fax: 206-685-3157

Abdi Gungor

I hope this email finds you well. I am writing you to ask your permission to use the Life Experience Survey (LES) in my dissertation. I am currently a doctorate candidate in Counselor Education program at University of Central Florida, and working on my dissertation.

In my dissertation, I am interested in examining the moderating effects of optimism, hope, and gratitude on negative life events in college students. Of course, I will appropriately cite you and your colleagues in my study.

In addition, if you allow me to use your instrument, would it be acceptable to you if I transfer LES into Qualtrics to collect data via online? Again, you and your colleagues will be cited appropriately.

If you give me permission to use LES, could you please share the manual or questions with me? Or should I use the questions which published in the original article?

I appreciate your time and concern. I look forward to hearing from you.

Sincerely,

Abdi Gungor

*Doctorate Candidate  
Counselor Education / University of Central Florida*

## **APPENDIX K: LOT-R EMAIL APPROVAL**

From: Michael F. Scheier <scheier@cmu.edu>

Sent: Mon 12/14/2015 3:24 PM

To: Abdi Gungor;

I apologize for this automated reply. Thank you for your interest in our work. You have my permission to use any of the scales that I have helped to develop for your research and/or teaching purposes. I do not charge for the use of these scales. I only ask that you reference for the scales you use appropriately in all publications. Note that I only send permission approval electronically, so I will not be sending a follow-up letter authorizing the use of a scale through regular mail.

If you wish to use a measure for a purpose other than teaching or research, you should also contact the copyright holder, the publisher of the journal in which the measure was published.

Information concerning the measure you are asking about can be found at the website below. Questions about reliability, validity, norms, and other aspects of psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales.

I do not track attempts to translate the scales into different languages, so I have no information to offer about that. You are free to develop your own translation if you would like to do that. Again, just be sure to cite the original scale appropriately in publications.

Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

If questions remain, do not hesitate to contact me. Good luck in your work.

<http://www.psy.cmu.edu/people/scheier.html>

--

Michael F. Scheier, Ph.D.  
Professor of Psychology

Department of Psychology  
Baker Hall 335-F  
[Carnegie Mellon University](#)  
[Pittsburgh, PA 15213](#)

Voice: 412-268-3791

FAX: 412-268-2798



From: Abdi Gungor  
Sent: Mon 12/14/2015 3:19 PM  
To: scheier+@andrew.cmu.edu;  
Hello Dr. Scheier,

I hope this email finds you well. I am writing you to ask your permission to use the Life Orientation Test-Revised (LOT-R) in my dissertation. I am currently a doctorate candidate in Counselor Education program at University of Central Florida, and working on my dissertation.

In my dissertation, I am interested in examining the moderating effects of positive variables (optimism, hope, and gratitude) on the effects of negative life events in college students. Of course, I will appropriately cite you and your colleagues in my study.

In addition, if you allow me to use your instrument, would it be acceptable to you if I transfer LOT-R into Qualtrics to collect data via online? Again, you and your colleagues will be cited appropriately.

I appreciate your time and concern. I look forward to hearing from you.

Sincerely,

Abdi Gungor

*Doctorate Candidate  
Counselor Education / University of Central Florida*

## **APPENDIX L: GQ-6 EMAIL APPROVAL**

From: McCullough, Michael Earl <mikem@miami.edu>  
Sent: Tue 12/15/2015 10:06 AM  
To: Abdi Gungor;

Dear Abdi:

Thanks for your note. This is fine. Good luck in your work!

Mike

Michael McCullough  
Professor, Dept of Psychology  
Director, Evolution & Human Behavior Lab  
University of Miami  
5665 Ponce de Leon Blvd  
Coral Gables, FL 33124-0751  
Phone: 305-284-8057  
Fax: 305-284-3402  
e-mail: [mikem@miami.edu](mailto:mikem@miami.edu)  
Web Page: [www.psy.miami.edu/faculty/mmccullough](http://www.psy.miami.edu/faculty/mmccullough)  
Lab Web Page: [www.psy.miami.edu/ehblab](http://www.psy.miami.edu/ehblab)  
Blog: [www.social-science-evolving.com](http://www.social-science-evolving.com)

From: Abdi Gungor  
Sent: Mon 12/14/2015 4:15 PM  
To: mikem@miami.edu;

Hello Dr. McCullough,

I hope this email finds you well. I am writing you to ask your permission to use the The Gratitude Questionnaire-6 (GQ-6) in my dissertation. I am currently a doctorate candidate in Counselor Education program at University of Central Florida, and working on my dissertation.

In my dissertation, I am interested in examining the moderating effects of positive variables (optimism, hope, and gratitude) on the effects of negative life events in college students. Of course, I will appropriately cite you and your colleagues in my study.

In addition, if you allow me to use your instrument, would it be acceptable to you if I transfer GQ-6 into Qualtrics to collect data via online? Again, you and your colleagues will be cited appropriately.

I appreciate your time and concern. I look forward to hearing from you.

Sincerely,

Abdi Gungor

*Doctorate Candidate  
Counselor Education / University of Central Florida*

## **APPENDIX M: K-10 EMAIL APPROVAL**

From: Kessler, Ronald <kessler@hcp.med.harvard.edu>  
Sent: Mon 12/14/2015 4:58 PM  
To: Abdi Gungor;

Abdi - Yes, you have my permission for both. Good luck with your work. Ron Kessler

Sent from my iPhone

From: Abdi Gungor  
Sent: Mon 12/14/2015 4:39 PM  
To: kessler@hcp.med.harvard.edu;

Hello Dr. Kessler,

I hope this email finds you well. I am writing you to ask your permission to use the Kessler Psychological Distress-10 (K10) in my dissertation. I am currently a doctorate candidate in Counselor Education program at University of Central Florida, and working on my dissertation.

In my dissertation, I am interested in examining the moderating effects of positive variables (optimism, hope, and gratitude) on the effects of negative life events on psychological distress and life satisfaction in college students. Of course, I will appropriately cite you and your colleagues in my study.

In addition, if you allow me to use your instrument, would it also be acceptable to you if I transfer K10 into Qualtrics to collect data via online? Again, you and your colleagues will be cited appropriately.

I appreciate your time and concern. I look forward to hearing from you.

Sincerely,

Abdi Gungor

*Doctorate Candidate  
Counselor Education / University of Central Florida*

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