Gratefulness and Subjective Well-Being: Mindfulness as a Mediator

By

Paul A. Pohto, M.Ed.

A Dissertation
Presented to
The Graduate Faculty of Radford University

Presented in Partial Fulfillment of the Requirements for the
Degree of
Doctor of Psychology
in
Counseling Psychology
in
the Department of Psychology
in
the College of Humanities and Behavioral Sciences
Radford University
Radford, VA

April 2020

Ruth Riding-Malon
_____
Ruth Riding-Malon, Ph.D.
Dissertation Chair

Pei-Chun Tsai
_____
Pei-Chun Tsai, Ph.D.
Committee Member

Benjamin Biermeier-Hanson
_____
Benjamin Biermeier-Hanson, Ph.D
Committee Member

ABSTRACT

The link between gratefulness and subjective well-being has been consistently supported theoretically and empirically over the past two decades (Emmons & McCullough, 2003; Fredrickson, 2004; McCullough et al., 2004). More complex examinations of the underlying mechanisms between gratefulness and subjective well-being have yet to be explored (Wood et al., 2010). The current study uses a path analysis to test the hypothesis that mindfulness mediates the relationship between gratefulness and subjective well-being in a college-aged population. Findings support the role of mindfulness as a mediator between gratefulness and happiness, and positive affect. Implications of the study may expand the understanding of the relation between constructs within positive psychology as well as inform the development of strength-based interventions for college-aged individuals.

Keywords: gratefulness, subjective well-being, mindfulness, path analysis, positive psychology

Paul A. Pohto, M.Ed.
Department of Psychology
Radford University
Radford, VA
2020

Dedication

This dissertation is dedicated to my late maternal and paternal grandparents (Donna & Allan

Pohto, and Nell & John Sykes); I have always aspired to make you proud and could not have

made it this far without your love and support. Your love and support have been a powerful asset

during this long journey.

This dissertation is also completed in memory of Jacob B. Terry. *"Because, wherever your heart*

is, that is where you'll find your treasure." – Paulo Coelho, The Alchemist

Acknowledgements

Table of Contents

Chapter I

Introduction

The modern-day population of college-aged individuals has been marked by unprecedented levels of distress related to mental health concerns and high-risk behaviors. Consequently, the acuity of college-aged mental health presentation has challenged health care providers on college campuses to adapt clinical service utilization models in a determined attempt to accommodate increasing demand for services (Center for Collegiate Mental Health [CCMH], 2019). Better understanding and developing interventions or policies aimed at improving the well-being of college-aged individuals is of critical importance due to the increased rates of severe distress (e.g., suicide, hospitalizations, medical withdrawal), transitional concerns, and the associated increased demand for health care services within college and university counseling settings (Gallagher, 2012; Mattanah, 2016a/b; National Alliance on Mental Illness [NAMI], 2012; Vespia, 2007). Current adaptations of clinical service utilization models within college and university counseling centers have drawn criticism for prioritizing access to direct services over adequate dosage of treatment, which calls into question whether there is an alternative means of increasing the well-being of the college-aged population. With an urgent focus on attending to demand for services, researchers and clinicians have investigated process and outcome measurements of therapy efficacy, piloted alternative service utilization models (e.g., stepped-care), and aimed to bridge student treatment with off-campus health care providers. One area that has been overlooked in research and practice that relates to the potential role of positive psychology is strength-based intervention to inform treatment and care of college-aged individuals.

As a distinct field within health service psychology, counseling psychologists are well-equipped to address the concern of college-aged individual well-being. Specifically, maintaining core values including social justice, and positive, strength-based, and developmentally attuned care afford counseling psychologists a unique perspective in attending to the well-being of college-aged individuals (Gelso et al., 2014; Packard, 2009). In particular, those identifying as practitioner-scholars may serve to empirically investigate positive and strength-based constructs with the potential to convey findings in a manner that is readily accessible and deployable for clinicians providing direct services.

Researchers in the field of counseling psychology have established a connection between gratefulness and well-being (Emmons & McCullough, 2003; Liao & Weng, 2018; McCullough et al., 2004). However, more can be done to explore increasingly complex relations between gratefulness, well-being, and other positive constructs. The literature supports that investigating more nuanced relationships between variables is a sign of a maturing discipline (Cohen et al., 2003; Hoyle & Kenny, 1999; Kline, 2016). Additionally, Frazier and colleagues (2004) denoted that counseling psychology has historically neglected investigation of more complex relationships among variables. Furthermore, Jaccard and colleagues (1990) contended that the relationships between most variables in psychology and social sciences contain interaction effects (e.g., mediation and moderation) due to the complex nature of human subjects' research. The broaden-and-build theory developed by Fredrickson (1998, 2001) provides a well-supported and useful framework for understanding multiple positive constructs as they relate to human functioning. As such, the current study sought to extend the literature by examining whether mindfulness mediates the relationship between gratefulness and subjective well-being.

Gratefulness

Gratefulness is a positive, strength-based construct that has garnered increasing attention from the scholarly community as it relates to psychology and other social sciences. Gratefulness is a popular construct to examine due to associations with positive outcomes in social relationships (Lambert & Fincham, 2011; Wood et al., 2008), physical health (Wood et al., 2010; Wood et al., 2009), and well-being (Emmons & McCullough, 2003; McCullough et al., 2004). McCullough and colleagues have defined gratefulness as "a general tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains" (McCullough et al., 2002, p. 112). Such a definition of gratefulness differs from alternative conceptualizations including acts of gratitude (i.e., state gratitude) as seen in written expressions (e.g., thank you notes).

As previously described, gratefulness, a construct that requires awareness of, and attention to beneficence, is associated with numerous positive outcome variables (Emmons & McCullough, 2003; Emmons & Shelton, 2002; Emmons & Stern, 2013; Lambert & Fincham, 2011; McCullough et al., 2004; Tsang, 2006; Wood et al., 2010; Wood et al., 2009; Wood et al., 2008). The broaden-and-build theory provides a well-supported framework for the way experiences with positive emotions lead to an upward spiral of positive outcomes (Fredrickson, 2001, 2004). In particular, through the broaden-and-build theory, gratefulness is associated with thought-action repertoires that promote prosocial behavior (Fredrickson, 1998, 2001, 2004). Additional thought-action ranges associated with gratefulness are linked to strengthened social bonds and relationships (Fredrickson, 1998, 2001, 2004).

Mindfulness as a mediator.

Mindfulness is defined as "the state of being attentive to and aware of what is taking place in the present" (Brown & Ryan, 2003, p. 822). The construct of mindfulness is popular in modern psychological research because of associations with well-being, decreases in negative psychological symptoms, and increases in positive affect (Brown & Ryan, 2003; Carmody & Baer, 2008; Samuelson et al., 2007). Mindfulness is a practical positive construct to investigate because it is accessible to most individuals and also maintains strong empirical support from positive psychology and theoretical support from frameworks such as the broaden-and-build theory (Fredrickson, 1998, 2001; Seligman & Csikszentmihalyi, 2000).

Subjective Well-Being

The current study operationalizes subjective well-being (SWB) as it is found within the hedonic conceptualization, including absence of negative affect, and the presence of positive affect. The conceptualization for the current study is supported in previous literature (see Liao & Weng, 2018) and the tripartite model described by Larsen and colleagues (1985). SWB is influenced by individuals' perceptions of social relationships (Deiner et al., 2018), and is a commonly measured outcome variable in social sciences. Wood and colleagues (2010) called attention to the limited understanding of the relationship between gratefulness and SWB. The present study will expand the literature through examining mindfulness as a mediating variable within the relationship between gratefulness and SWB.

The present study seeks to further explore the underlying relationship mechanisms between gratefulness and SWB in college-aged individuals by examining the potential role of mindfulness as a mediating variable through a path analysis (Kline, 2016). Accordingly, the present study will expand the literature pertaining to the underlying mechanisms between

gratefulness and SWB. In addition, the present study has the implications to inform positive, strength-based interventions designed to increase the SWB of college-aged individuals.

In accordance with the findings in the literature regarding the relationship between gratefulness and SWB, and in recognition of the role of mindfulness, the following hypotheses are proposed:

> H1 Gratefulness will be significantly and positively associated with mindfulness;

> H2 Gratefulness will be significantly and positively associated with happiness;

> H3 Gratefulness will be significantly and positively associated with positive affect;

> H4 Mindfulness will significantly mediate the relationship between gratefulness and

happiness; and

> H5 Mindfulness will significantly mediate the relationship between gratefulness and

positive affect.

Method

Participants

The target sample for the current study was 200 completed data sets (Time 1 and Time 2) to align with previous literature (Liao & Weng, 2018) and simulation studies that suggest a sample size of 200 is necessary for adequate statistical power (Hoyle & Kenny, 1999; Kline, 2016; Westin & Gore, 2006). The current study recruited participants through convenience sampling from the undergraduate student population at Radford University and Virginia Polytechnic Institute and State University (Virginia Tech). The study was advertised as "Gratefulness and Well-Being: Mindfulness as a Mediator" and accessible through the Radford University SONA research system as well as through snowball sampling in conjunction with instructors of record at Virginia Tech. Inclusion criteria for participation in the study included being 18 years of age or older, identifying as a college or university student, and maintaining the

ability to understand and sign informed consent and self-report measures. A student email

address was required to participate in the present study; this process served as a safeguard to

preserve the integrity of the population of interest. Data were disqualified and excluded from the

final data set if participants had not completed both Time 1 and Time 2 surveys. Survey data

were also disqualified and excluded if surveys were not entirely completed or if the participant

responded incorrectly to the validity check item. Participants in the study received no direct

benefit from the researcher for participation; however, some students may have received course

credit or extra credit through participation in the study as indicated per course syllabi in their

respective classes.

     A final sample of 197 participants were included in the primary analysis. Of these

participants, a majority identified as female ($n = 121$, 61.4%) and White/Caucasian ($n = 121$,

61.4%). The largest proportion of participants fell in the 18-22 years of age range (89.3%). In

regard to academic status, a majority of students identified as seniors (33.5%). Table 1 provides a

summary of the demographic profile of participants.

Table 1

Sample Demographic Data.

	Frequency	Percent
Age		
18-22 years old	176	89.3%
23-27 years old	16	8.1%
28-32 years old	3	1.5%
33-37 years old	2	1.0%
Race / Ethnicity		
Hispanic or Latino	12	6.1%
Black or African American	27	13.7%
Asian or Pacific Islander	11	5.6%

White	141	71.6%
Multi-Racial	6	3.0%
Gender Identity		
Male	73	37.1%
Female	121	61.4%
Transgender / Gender Non-Conforming or Gender Variant	3	1.5%
Academic Year		
Freshman	51	25.9%
Sophomore	22	11.2%
Junior	58	29.4%
Senior	66	33.5%

Procedure

The researcher procured approval from the Institutional Review Board at Radford University to conduct human subjects' research for the present study. Research participants were informed that the study included the current survey materials and a follow-up survey to be completed in 2 weeks. The informed consent survey indicated that students would be reminded twice via their provided student email address to complete the second survey in 2 weeks' time. Those participants who provided consent were directed to subsequent survey webpages in Qualtrics where they completed the survey measures. The time of completion for Time 1 and Time 2 surveys combined was approximately 10 minutes. Participants were asked to create a unique participant ID comprised of their favorite color and the last four digits of their phone number (e.g., red8205). The participant ID was used to protect confidentiality while matching data from Time 1 and Time 2 for statistical analyses. After creating a participant ID, participants proceeded to the survey instruments. The Time 1 survey included the Gratitude Adjectives

Checklist (GAC; McCullough et al., 2002), the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), and a demographic questionnaire including participant age, race/ethnicity, gender identification, academic year, and academic major or program of study. The Time 2 survey included the four-item Subjective Happiness Scale (Lyubomirsky & Lepper, 1999), the 10-Item Positive Affect Subscale of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), and the MAAS (Brown & Ryan, 2003). A validity item instructing the participant to select answer option "B" was included on both surveys to evaluate whether participants appropriately attended to the instruments. Survey items and instruments used in the current study are displayed in Appendix A.

Following completion of the survey items, participants were presented with a page thanking them for their time and reminding them that they would be contacted in 2 weeks to complete the follow-up survey. Participants received an email from a research assistant on the Monday morning 2 weeks following their initial survey completion. The email included a prompt reminding them of the Time 2 survey and a link to complete the survey via Radford University Qualtrics. Research assistants sent a final email reminder to participants who had yet to complete the Time 2 survey on the Thursday 2 weeks after the initial survey was completed. Participant data for the Time 2 survey that were received after the 2-week response period were excluded from data analysis.

Two points of data collection were used in the current study to minimize common method variance (CMV). CMV refers to spurious findings attributable to the process of measurement as opposed to the constructs that the measures are intended to represent (Podsakoff et al., 2003). Examples of potential causes of CMV include acquiescence biases (i.e., tendency to agree with item regardless of content), common scale anchors (i.e., influence due to repeated use

of the same Likert anchor points), and scale length (i.e., the influence resulting from previous items remaining in short-term memory due to abbreviated scale length). Lindell and Whitney (2001) highlighted that cross-sectional studies including attitudes and behaviors may be particularly susceptible to overestimated correlations due to CMV. Researchers can account for CMV through procedural techniques as well as statistical methods. The current study employed two procedural CMV remedies suggested by Podsakoff and colleagues (2003), including temporal separation of measurement (i.e., two points of data collection) and protecting participant anonymity to reduce evaluation apprehension. Components of the Tailored Design Method (TDM) were also used in the survey construction in order to increase the quality to data collected from participants. The TDM is a group of techniques and strategies based on social exchange theory that were developed in the 1970s to increase participation in phone and mail surveys (Dillman et al., 2014). Examples of TDM strategies employed in the current survey include informing potential participants that their effort will contribute to a better understanding of the subject matter, clearly indicating the time required to complete the study, providing a progress bar on the screen that illustrates the amount of the survey that remains to be completed, and using similar structure and formatting for each instrument (e.g., Likert-type scales).

Measures

Gratefulness. The Gratitude Adjectives Checklist (GAC; McCullough et al., 2002) measured gratefulness in the current study. The GAC employs a Likert-type scale (1 "inaccurate" to 9 "accurate") for participants to assess the degree to which three adjectives (*grateful*, *thankful*, and *appreciative*) describe them in the last 24 hours. The GAC has demonstrated good reliability and validity as seen by Nezlek and colleagues (2017), who found a Cronbach's alpha of .85 in a sample of college students. McCullough and colleagues (2002) established convergent validity

by finding positive associations between the GAC and measures of positive affect and life

satisfaction. For the current sample, the coefficient alpha was .85. Liao and Weng (2018)

effectively used the GAC to examine the relationship between gratefulness, meaning in life, and

SWB.

Mindfulness. The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003)

measured mindfulness. The MAAS is a 15-item scale designed and validated to measure

dispositional mindfulness, specifically, "the presence or absence of attention to and awareness of

what is occurring in the present" (Brown & Ryan, 2003, p. 824). The MAAS employs a Likert-

type scale (1 "almost always" to 6 "almost never") to assess the frequency with which

individuals perceive a given experience. A sample question is "I could be experiencing some

emotion and not be conscious of it until sometime later." The MAAS has exhibited good

reliability as evidenced by Brown and Ryan (2003), who calculated Cronbach's alpha at .87; it

was .86 and .89 at Time 1 and Time 2, respectively, in the current study. Brown and Ryan (2003)

also established convergent validity for the MAAS through comparison with measures of

emotional intelligence, mindful engagement, and openness to experience.

Subjective well-being. The current study used two continuous scales (i.e., *happiness* and

positive affect) to measure SWB. A third variable of SWB was discarded due to an error in the

initial measure's encoding. This measurement is in concert with previous research from Liao and

Weng (2018) that builds from Diener's (1994) inclusive framework for well-being as well as

Diener's (1984) framework of subjectivity, positive experience, and global assessment of one's

life trademarks. A multi-faceted approach to measuring SWB provides a more nuanced

understanding of the participant experience and potential for further research exploration

regarding each component. The measurement of SWB in the current study also aligns with

guidelines from Frazier and colleagues (2004) that highlight the benefits of using multiple

measurements for a single construct. Diener and colleagues (2018) described SWB as the

evaluations one has of one's life in regard to cognitive and affective domains. As such, the

measures of happiness and positive affect are appropriate to represent SWB in the present study.

     Happiness. The four-item Subjective Happiness Scale (SHS; Lyubomirsky & Lepper,

1999) measured happiness in the current study. The SHS uses a Likert-type scale (1 "very

unhappy" to 7 "very happy") to assess participant happiness. Higher scores are indicative of

higher levels of happiness. The SHS has displayed good reliability as Lyubomirsky and Lepper

(1999) calculated Cronbach's alpha as .88 in a sample of college students; it was calculated at

.84 in the current study. Lyubomirsky and Lepper (1999) also established convergent validity for

the SHS through finding a positive relationship between the SHS and scores of optimism in a

sample of college students.

     Positive affect. The 10-item Positive Affect subscale of the Positive and Negative Affect

Schedule (PANAS; Watson et al., 1988) measured positive affect in the current study. The 10-

item Positive Affect subscale employs a Likert-type scale (1 "very slightly or not at all" to 5

"extremely") to evaluate the extent participants align with adjectives representative of positive

affect (e.g., proud). Higher scores on the scale are indicative of increased positive affect. Hardin

and colleagues (2007) calculated Cronbach's alpha as .87 in a sample of college students;

coefficient alpha was calculated at .92 in the current study. Hardin and colleagues (2007)

established construct validity through finding a negative association between the Positive Affect

subscale and a measure of distress in a sample of college students.

     Demographics Form. Participants were asked to complete a brief demographics form

regarding their age, race/ethnicity, gender identity, academic year (i.e., freshman, sophomore,

junior, senior), and academic major or program of study. The descriptive data was used to specify the degree to which the data aligns with the population and may be generalized.

Results

Preliminary data analysis

After the completion of data collection, the researcher downloaded the data from the Qualtrics survey into an IBM SPSS Statistics 26 (SPSS) file for preliminary analysis. A total of 507 participants completed the Time 1 survey. Three hundred ten data sets were excluded due to failing the attention check validity item ($n = 25$), not completing 100% of the survey ($n = 64$), or failing to complete the Time 2 survey within the 2-week limit ($n = 221$). Of the 297 data sets from the Time 2 survey, 100 data sets were excluded due to not providing an email or participant ID to match data sets ($n = 39$), failing the attention check item ($n = 8$), not completing 100% of the survey ($n = 17$), and completing the Time 2 survey multiple times or not completing the survey within the 2-week time limit ($n = 36$). Accordingly, 197 participant data sets were included in the primary analysis. SPSS software was used to calculate composite score variables for each measurement scale based upon their respective instructions for scoring. Descriptive data were also calculated for participant demographic information. Once data cleaning and descriptive analyses were completed, the researcher proceeded to the primary analysis.

Primary data analysis

As a result of time limitations, the current study was not able to collect data at an adequate number of points to support causal inferences (i.e., three panel waves of data are required for causal inference). Consequently, process analysis was used to test for mediation effects between gratefulness and the criterion variables. The PROCESS macro (Hayes, 2013; Preacher & Hayes, 2004) was used to test for a mediation effect between predictor and criterion

variables. The PROCESS macro was selected to investigate mediation and indirect effects because of the path-analytic framework that eliminates some concerns associated with drawing conclusions from segmented hypotheses regarding specific paths within the model and allows for examination of increasingly complex models (Hayes, 2009; Montoya & Hayes, 2017). The PROCESS approach is widely used in social sciences and is appropriate for the hypotheses of the current study. In the current study, the PROCESS macro was used to examine the relationship between gratefulness and happiness, and positive affect, using mindfulness as a mediating variable. The PROCESS macro utilizes ordinary least squares regression and bias-corrected bootstrapping to examine mediation effects (Hayes, 2012). The analysis used the bootstrapping technique to resample the data 5,000 times to create a confidence interval determining whether any significant mediation effect was present. That is to say, the method applied in the current study was used to determine whether the relationship between gratefulness and happiness or positive affect was explained, in part, by mindfulness.

Internal consistency. The following Cronbach's coefficient alphas were computed for the final participant sample (see Table 2). The GAC (α = .85), MAAS (α = .89), SAT (α = .89), PA (α = .92), and HAPP (α = .84) instruments each demonstrated good internal consistency for the sample. The internal consistencies for the measures used in the current study were equivalent or greater than that of the validation studies previously referenced with the exception of the happiness scale, which had a marginal difference of .04 between observed consistency and that of the validation study (i.e., α = .84 in the present study and α = .88 in the validation study).

Table 2

Descriptive Statistics and Correlations for all Scale Variables (n = 197)

	1	2	3	4	Possible Range	M	SD
1. GAC	(.85)				3-15	11.52	2.42
2.MAAS	.191	(.89)			1-6	3.62	.76
3. PA	.305	.223	(.92)		10-50	33.16	8.76
4. HAPP	.397	.327	.533	(.84)	1-7	4.70	1.16

Note. All correlations are significant at $p < .01$ (for two-tailed test). $N = 197$. Cronbach's coefficient alpha reported in parenthesis. GAC= Gratitude Adjective Checklist; MAAS = Mindful Attention Awareness Scale; PA = Positive Affect; HAPP = Subjective Happiness Scale.

Test of mediation and significance levels of indirect effects

Prior to examining the potential role of mindfulness as a mediating variable, it was necessary to establish a direct association between values for gratefulness and those of mindfulness. Results indicated a statistically significant positive relationship between gratefulness and mindfulness (*beta* = .06, $p < .001$). Regression analysis was also used to calculate a total effect (i.e., X → Y) for gratefulness and the outcome variables (i.e., PA, HAPP). Statistics for the total, direct, and indirect effects are presented in Table 3. Results indicated that gratefulness was a significant predictor of happiness (*beta* = .19, $p < .001$) and positive affect (*beta* = 1.11, $p < .001$).

Table 3

Effects of Gratefulness on Outcome Variables Utilizing Bootstrap Resampling Method

Total, direct and indirect effects	R^2	β	SE	Beta	95% CI	
					Lower	Upper
Total effects						
Gratefulness → happiness	.16*	.19*		.40*		
Gratefulness → positive affect	.09*	1.11*		.31*		
Direct effects						
Gratefulness → happiness		.17	.03		0.11	0.23
Gratefulness → positive affect		.99	.25		0.50	1.48
Indirect effect						
Gratefulness → mindfulness → happiness		.02	.01		.004**	.050**
Gratefulness →mindfulness → positive affect		.19	.08		.003**	.309**

Note. $N = 197$. 5,000 bootstrap sample. CI = confidence interval; β = unstandardized direct and indirect effect estimates; Beta = standardized direct and indirect effect estimates. * indicates p <.001. ** indicates significant mediation effect.

Gratefulness→mindfulness→HAPP. It was hypothesized that mindfulness would significantly mediate the relationship between gratefulness and happiness. That is to say, gratefulness would significantly predict mindfulness that would then significantly predict happiness. In this model, gratefulness was positively associated with happiness (beta = .17, *p* <

.05), meaning that as participant scores increased for gratefulness, they also increased for

happiness. Gratefulness was also positively associated with mindfulness (beta = .06, *p* < .05),

and mindfulness was positively associated with happiness (beta = .40, *p* <.05). In addition, the

indirect effect (ab) was significant (beta = .02, [.004, .049]). Overall, this model supported that

as participant scores for gratefulness increased, so did the scores for mindfulness and happiness.

In other words, the relationship between gratefulness and happiness can be, in part, explained by

mindfulness. As a result, this model bolsters support for the potential role of mindfulness

mechanism of action (i.e., mediator) in the relationship between gratefulness and happiness due

to the bootstrapped confidence interval upper and lower limits falling outside of zero, which

indicates statistical significance. Figure 1 displays the mediation model.

Figure 1. beta weights are shown in the figure above. * indicates *p* < .05.

Gratefulness→mindfulness→PA. It was hypothesized that mindfulness would

significantly mediate the relationship between gratefulness and positive affect. That is to say,

gratefulness would significantly predict mindfulness that would then significantly predict

positive affect. In this model, gratefulness was positively associated with positive affect (beta =

.99, *p* <. 05), meaning that as participant scores increased for gratefulness, they also increased for

positive affect. Gratefulness was also positively associated with mindfulness (beta = .06, *p* <.05),

and mindfulness was positively associated with positive affect (beta = 1.98, $p < .05$). In addition,

the indirect effect (ab) was significant (beta = .12, [.003, .309]). Overall, this model supported

that as participant scores for gratefulness increased, so did the scores for mindfulness and

positive affect. In other words, the relationship between gratefulness and positive affect is, in

part, explained by mindfulness. As a result, this model lends support for the role of mindfulness

as a mechanism of action (i.e., mediator) in the relationship between gratefulness and positive

affect, due to the bootstrapped confidence interval upper and lower limits falling outside of zero,

which indicates statistical significance. Figure 2 displays the mediation model.
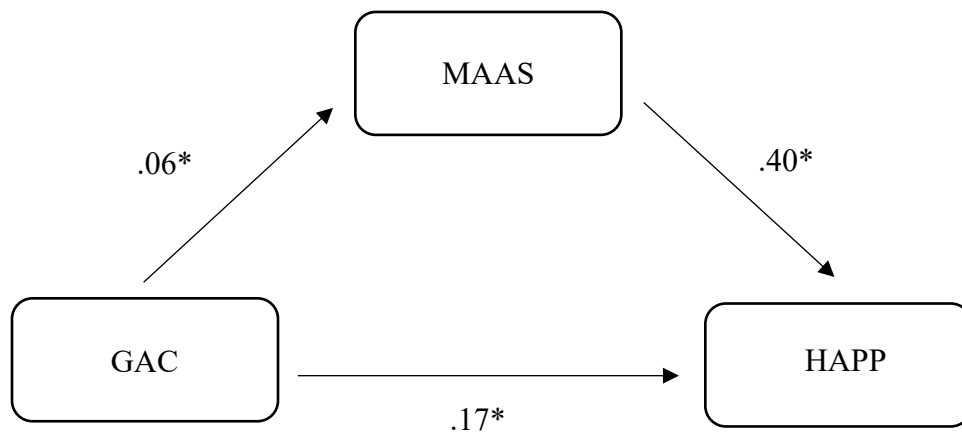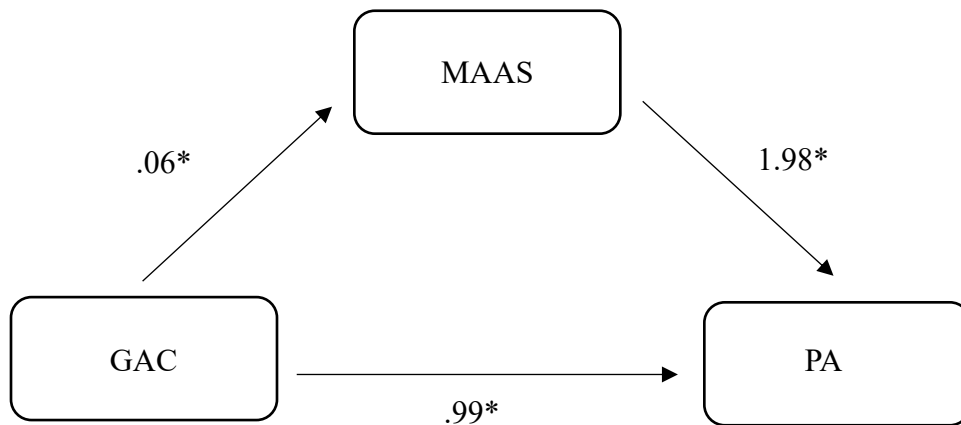

Figure 2. beta weights are shown in the figure above. * indicates $p < .05$.

Table 4 provides additional information from the mediation analysis for each model

tested. Models with a confidence interval upper and lower limit outside of zero indicate a

significant mediation effect. That is to say, gratefulness significantly predicted mindfulness,

which then predicted the criterion variable. Full mediation takes place when the mediator

variable accounts for all of the change between predictor and criterion variable. Partial

mediation, a far more common occurrence, takes place when the mediator variable only accounts

for a marginal portion of change between predictor and criterion. In regard to the present study,

significant mediation was found in the models using criterion variables of happiness and positive

affect.

Table 4

Mediation Analyses

Hypotheses	Path a	Path b	Path c	Path c'	Indirect Effect	Bootstrap CI (lower limit, upper limit)
GAC(X)→MAAS (M)→ HAPP (Y)	.06 (.022)*	.40 (.096)*	.19	.17 (.031)*	.02	.004, .049**
GAC(X)→MAAS (M)→ PA (Y)	.06 (.022)*	1.98 (.793)*	1.11	.99 (.248)*	.12	.003, .309**

Note. * indicates *p* < .05. ** indicates confidence interval outside of zero. Standard errors are in

parentheses.

Discussion

The purpose of the current study was to investigate the relationship between gratefulness

and subjective well-being (SWB) in college-aged individuals. As referenced in previous

chapters, better understanding the relationship between gratefulness and SWB in a college-aged

sample is of importance because of the need to establish preventative treatment approaches for a

high-risk population (i.e., college-aged individuals). The extant literature has supported the role

of gratefulness in predicting SWB (Emmons & McCullough, 2003; Emmons & Shelton, 2002;

Fredrickson, 2004; Liao & Weng, 2018; McCullough et al., 2004). However, less is known about

mechanisms of action between gratefulness and SWB or about whether differences exist

depending on how SWB is conceptualized (Wood et al., 2010). To better understand the

relationship between gratefulness and SWB, the current study investigated mindfulness as a mediating variable. Final survey data were collected from 197 traditionally aged college students at two points in time separated by 2 weeks to reduce common method variance.

Clinical and Scholarly Implications

Current approaches to college-aged mental health, particularly within clinical and counseling psychology, reside in remedial approaches that are more indicative of the medical model approach than the values of counseling psychology (Gelso et al., 2014; Gerstein, 2006; Packard, 2009). This may, in part, be due to the increased usage of health care delivery systems on college campuses that rely on integrated care models predisposed to observe functioning through a symptomology or deficit-based lens (Mitchell et al., 2019). The current study advanced the literature surrounding positive psychology constructs and offered valuable implications for practitioners and policy makers in the realm of college and university mental health.

In line with the strength-based values of counseling psychology, the positive psychology movement has come to develop numerous interventions aimed at increasing flourishing, well-being, and quality of life, among other constructs (Gelso et al., 2014). Among interventions examined, Seligman and colleagues (2005) found that those aimed at increasing gratitude were some of the most effective and long-lasting. More recently, Wood and colleagues (2010) called into question the efficacy of gratitude interventions, mainly citing lack of equitable comparison groups. When compared to equivalent psychologically active conditions, Davis and colleagues (2016) found that gratitude interventions performed at least as well as psychologically active groups but called for additional research to further investigate the efficacy of gratitude interventions in comparison to other psychological interventions. Despite the scarcity of additional research pertaining to the efficacy of interventions, clinicians have routinely

incorporated gratitude interventions or components of gratitude into positive psychotherapy. In fact, Rashid (2015) developed a positive psychotherapy treatment plan that includes an entire session specifically aimed at increasing gratitude. Likewise, applications of mindfulness and mindfulness-based interventions continue to expand in counseling practice (Brown & Ryan, 2003; Carmody & Baer, 2008; Kabat-Zinn et al., 1985; Kabat-Zinn et al., 1992). Whether in the context of individual psychotherapy or group counseling, mindfulness practices continue to be evaluated for their role in increasing well-being (Carmody & Baer, 2008).

One potential means of addressing the high demand for counseling services among college-aged individuals is to employ a positive, strength-based preventative approach that seeks to improve well-being and functioning. However, before introducing positive, strength-based preventative interventions to any population, scholars and practitioners must first better understand the relationship between positive psychology constructs, how they interact, and with what outcomes they are associated. The current study contributes to better understanding the role of strength-based and positive constructs in clinical work through outlining how mindfulness helps to explain the relationship between gratefulness and SWB. Namely, clinicians and policymakers can use this information to inform direct interventions (e.g., psychotherapy, psychoeducation, group therapy), as well as design and develop community-based initiatives to improve the well-being of college-aged individuals beyond college and university counseling services.

Overall, the current study offers novel findings by investigating the relationship among positive psychology constructs as they pertain to SWB in a sample of college-aged individuals. The study at hand also expands previous research by examining the unique contribution of mindfulness as a potential mediating variable, which serves to help explain "how" or "why" one

variable exerts an impact on an outcome. Findings from the current study also provide a more

nuanced understanding of SWB. Operationalizing the hedonic conceptualization of SWB while

isolating two dimensions within the model (i.e., happiness and positive affect) allowed for a

more precise understanding of how gratefulness and mindfulness operate than a single

amalgamated variable. In alignment with the suggestion of MacKinnon and Dwyer (1993), the

findings can serve to inform future research on the relationship among positive psychology

constructs as well as provide groundwork for the development of strength-based, preventative

interventions aimed at improving the well-being and functioning of college-aged individuals.

Taken together, the findings from the current study also offer a response to the call from

researchers to further investigate mechanisms of action between positive psychology constructs

(Davis et al., 2016; Liao & Weng, 2018; Wood et al., 2010).

      Additional Applications for Psychology and Social Science. Whereas the current study

was designed to directly advance and inform understandings relevant to counseling psychology

research and practice, the results also offer valuable insights that are applicable to other fields of

study. For example, better understanding the connection between gratefulness, mindfulness, and

SWB may aid industrial/organizational psychologists in implementing positive or strength-based

initiatives in the workplace. Scholars in the area of religious and spiritual studies may also find

the results of the current study to be useful. Previous work has drawn on the connection between

gratefulness, SWB, and religion, and as a result, a better understanding of relationships among

variables has implications to advance research in such areas (Diener et al., 2018; Emmons,

2005). Likewise, sociologists, anthropologists, and scholars of philosophy may find the results of

the current study to be valuable and informative. Researchers have long debated the purpose or

reason for constructs such as gratefulness, mindfulness, and SWB amongst civilizations and

societies; better understanding their connections and interactions maintains implications relevant

to such areas of study. Lastly, the connections between mental health, physical health, and

education have been well-established in the literature. In particular, the findings of this study

may be used to develop larger scale public health and educational interventions in the service of

improving SWB of larger populations.

Limitations and Recommendations for Future Research

The current study presented a number of limitations that warrant further discussion and

provide implications for future research of the subject matter. First, the current study made use of

a convenience sample to collect data. Whereas the convenience sample employed by the current

study directly aligned with the population of interest described in the research questions, the

sampling method also decreases the likelihood that results can be generalized to larger groups.

The study's sample was limited to mostly European American college-aged individuals due to

the original research questions. As such, findings may have limited application beyond the

individuals who identify with demographic characteristics of the sample population. That is to

say, the findings may have limited generalizability to older individuals, those with differing

levels of education, and those of non-majority ethnic or racial groups. Also, whereas the study

employed components of tailored design method (Dillman et al., 2014) in an effort to improve

data quality and response rates, participants were informed that the study was concerning

gratefulness, SWB, and mindfulness. Consequently, participant bias or demand characteristics

may have impacted responses in the final data set. Future research may consider logistical

barriers and strategies involved in accessing a larger sample that is more representative of the

college-aged individual population. Such sampling may provide more nuanced data, including

the experiences of more diverse individuals.

Another limitation to the current study resides in the lack of methodological rigor required for causal inferences. The study at hand used sample data from two periods of time; this method is only sufficient to infer correlation. This limitation was primarily due to logistical restrictions based upon the academic calendar and maintaining access to participants. Future research could sample at least three waves of panel data to create a sequence between criterion, mediator, and outcome variables that justifies use of causal conclusions. Additional research may also employ an experimental design in the interest of justifying causal conclusions. The issue of directionality may limit findings from the current study as well. Of note, future research may further examine directionality between variables within a model. For example, happiness may be associated with mindfulness, which then predicts gratefulness.

Third variable concerns may also limit some of the findings, interpretations, and generalizability of the current study. The focus of the current study was on examining gratefulness, mindfulness, and SWB. Inclusion of additional variables (e.g., social connection, spirituality) into an increasingly complex model may offer a more comprehensive understanding of the relationship amongst constructs. For example, Emmons (2005) noted commonalities between religion and gratitude that may warrant exploration of the nature of relation between constructs. Likewise, Myers (2000) highlighted that those who identify as religious generally report stronger social bonds. Thus, an increasingly complex model may better explain the relationships among variables. Future research may also consider investigating moderating variables. Moderating variables answer research questions related to "when" or "for whom" a variable predicts an outcome (Frazier et al., 2004). One manner of investigating increasingly complex models is through use of structural equation modeling (SEM), a statistical technique to model the relationship among variables while accounting for latent error.

Another limitation to the current study pertains to the type of statistical analysis and tools used. Whereas there is no uniform strategy to accurately account for statistical error, SEM may serve as a helpful statistical tool in future research regarding gratefulness, mindfulness, and SWB. SEM would allow for more precise model estimates, better measurement of error, and the ability to test other types of variable roles such as moderation. Future research may also use full information maximum likelihood (FIML) as an option to account for missing data and provide a more robust data set.

Lastly, whereas the current study used multiple indicators to measure SWB, future research may consider expanding instrumentation for multiple measures of mindfulness and gratefulness to offer a more comprehensive picture of the variables of interest. With limitations being expounded upon and suggestions made for future research, the following will provide a final summary and conclusion of the current study.

Conclusion

In an effort to inform policy and practice surrounding the increased acuity and demand for services among college-aged individuals, the current study responded to a need to better understand how constructs within positive psychology relate to one another. Better understanding and developing interventions or policy aimed at improving the SWB of college-aged individuals is critical due to the increased rates of severe distress, transitional concerns, and the corresponding increase in service utilization within college and university counseling settings (Gallagher, 2012; Mattanah, 2016a/b; NAMI, 2012; Vespia, 2007). The field of counseling psychology offers a strengths-based approach that is distinct from other fields addressing the severity of need for mental health services among college-aged individuals. Gratefulness is a construct that has been examined for centuries and more recently tied into the work of positive

psychology. Research on the subject of gratefulness has provided promising results related to

human functioning (Emmons & McCullough, 2003; Emmons & Stern, 2013; McCullough et al.,

2004; Seligman et al., 2005), yet some researchers are skeptical of the efficacy of gratefulness in

practice (Davis et al., 2016; Wood et al., 2010). Whereas it is a common outcome variable, SWB

is a complex construct that maintains numerous conceptualizations and means of measurement

(Cooke et al., 2016). The current study specified the hedonic model of SWB as an outcome

measure using two separate indicator measures in an effort to provide a more nuanced

understanding of how gratefulness and mindfulness may impact college-aged individuals (Diener

et al., 1985; Ryan & Deci, 2000). Lastly, mindfulness was identified as a potential mediating

variable due to centuries of association with positive outcomes and similar characteristics of

attention and conscious awareness as are seen in gratefulness (Brown & Ryan, 2003; Carmody &

Baer, 2008). The broaden-and-build theory (Fredrickson, 1998, 2001) provided a guiding

conceptual framework for the interrelation between positive constructs. Statistically significant

positive relationships were found between gratefulness, mindfulness, happiness, and positive

affect. Accordingly, hypotheses 1, 2, 3, 4, and 5 were supported. The study had a number of

limitations previously addressed including convenience sampling, lack of design for causal

inference, and potential third variable concerns. Future research may expand on these findings by

using more complex models and analysis such as structural equation modeling to account more

accurately for error. Continued research in this area is important to advancing counseling

psychology and positive psychology, and informing policy and practice that impact the well-

being of college-aged individuals.

References

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in

psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822-848.

http://doi.org/10.1037/0022-3514.84.4.822

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of

mindfulness, medical and psychological symptoms and well-being in a mindfulness-

based stress reduction program. *Journal of Behavioral Medicine*, *31*(1), 23-33.

http://doi.org/10.1007/s10865-007-9130-7

Center for Collegiate Mental Health. (2019, January). *2018 Annual Report*.

https://ccmh.psu.edu/files/2019/09/2018-Annual-Report-9.27.19-FINAL.pdf

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation

analysis for the behavioral sciences* (3rd ed.). Erlbaum.

Cooke, P. J., Melchert, T. P., & Connor, K. (2016). Measuring well-being: A review of instru-

ments. *The Counseling Psychologist, 44*(5), 730-757.

Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook, J., Van

Tongeren, D. R., Griffin, B., & Worthington, E. L. (2016). Thankful for the little things:

A meta-analysis of gratitude interventions. *Journal of Counseling Psychology*, *63*(1), 20-

31. https://doi.org/10.1037/cou0000107

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95,* 542-757.

http://doi.org/10.1037/0033-2909.95.3.542

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators

Research*, 31, 103-157. http://dx.doi.org/10 .1007/BF01207052

Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49,* 71-75. http://dx.doi.org/10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Oishi, S. (2018). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 63-73). Oxford University Press.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The Tailored Design Method*. Wiley.

Emmons, R. A. (2005). Striving for the sacred: Personal goals, life meaning, and religion. *Journal of Social Issues*, *61*(4), 731-745. https://doi.org/10.1111/j.1540-4560.2005.00429.x

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

Emmons, R. A., & McCullough, M. E. (2004). *The psychology of gratitude.* Oxford University Press.

Emmons, R. A., & Shelton, C. M. (2002). Gratitude and the science of positive psychology. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 459-471). Oxford University Press.

Emmons, R. A., & Stern, R. (2013). Gratitude as a psychotherapeutic intervention. *Journal of Clinical Psychology: In Session*, *69*(8), 846-855. http://doi.org/10.1080/J294v01n02_06

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effect in

    counseling psychology research. *Journal of Counseling Psychology, 51,* 115-134.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2,*

    300-319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. *American*

    Psychologist, *56*(3), 218-226. http://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, B. L. (2004). Gratitude, like other positive emotions, broadens and builds. In R. A.

    Emmons & M. E. McCullough (Eds.), *The psychology of gratitude*. (pp. 145-166).

    Oxford University Press.

Gallagher, R. P. (2012). Thirty years of the National Survey of Counseling Center Directors: A

    personal account. *Journal of College Student Psychotherapy*, *26*(3), 172-184.

    http://doi.org/10.1080/87568225.2012.685852

Gelso, C. J., Nutt-Williams, E. N., & Fretz, B. R. (2014). *Counseling psychology*. American

    Psychological Association.

Gerstein, L. H. (2006). Counseling psychology's commitment to strengths: Rhetoric or reality?

    The Counseling Psychologist, 34, 276-292.

Hardin, E. E., Weigold, I. K., Robitschek, C., & Nixon, A. E. (2007). Self-discrepancy and

    distress: The role of personal growth initiative. *Journal of Counseling Psychology, 54,*

    86-92. http://doi.org/10 .1037/0022-0167.54.1.86

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new

    millennium. *Communication Monographs*, *76*(4), 408-420.

    http://doi.org/10.1080/03637750903310360

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable*

mediation, moderation, and conditional process modeling (White paper).

http://www.afhayes.com/public/process2012.pdf

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional*

process analysis: A regression-based approach. Guilford Press.

Hoyle, R. H., & Kenny, D. A. (1999). Sample size, reliability, and tests of statistical mediation.

In R. Hoyle (Ed.), *Statistical strategies for small sample research* (pp. 195-222). Sage.

Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression.* Sage.

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation

for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8,* 162-190.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L.,

Lenderking, W. R., Santorelli, S. F. (1992). Effectiveness of a meditation-based stress

reduction program in the treatment of anxiety disorders. *The American Journal of*

Psychiatry, *149*(7), 936-943. http://doi.org/10.1176/ajp.149.7.936

Kline, R. A. (2016). *Principles and practices of structural equation modeling* (4th ed.). The

Guilford Press.

Lambert, N. M., & Fincham, F. D. (2011). Expressing gratitude to a partner leads to more

relationship maintenance behavior. *Emotion*, *11*(1), 52-60.

http://doi.org/10.1037/a0021557

Larsen, R. J., Diener, E., & Emmons, R. A. (1985). An evaluation of subjective well-being

measures. *Social Indicators Research, 17*, 1-17. http://doi.org/10.1007/BF00354108

Liao, K. Y-H., & Weng, C-Y. (2018). Gratefulness and subjective well-being: Social connected-

ness and presence of meaning as mediators. *Journal of Counseling Psychology, 65*(3),

383-393.

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, *86*(1), 114-121. http://doi.org/10.1037/0021-9010.86.1.114

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research, 46*(2)*, 137-155.* http://doi.org/10.1023/A:1006824100041

MacKinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. *Evaluation Review, 17*, 144-158.

Mattanah, J. (2016a). *College student psychological adjustment: Exploring relational dynamics that predict success.* Momentum Press.

Mattanah, J. (2016b). *College student psychological adjustment: Theory, methods, and statistical trends.* Momentum Press.

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

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

Mitchell, S. L., Oakley, D. R., & Dunkle, J. H. (2019). White paper: A multidimensional understanding of effective university and college counseling center organizational structures. *Journal of College Student Psychotherapy, 33*(2), 89-106.

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological Methods*, *22*(1), 6-27. http://doi.org/10.1037/met0000086

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*(1), 56-67. https://doi.org/10.1037/0003-066X.55.1.56

National Alliance on Mental Illness (2012). *College student speaks: A survey report on mental illness.* https://www.nami.org/About-NAMI/Publications-Reports/Survey-Reports/College-Students-Speak_A-Srvey-Report-on-Mental-H

Nezlek, J. B., Newman, D. B., & Thrash, T. M. (2017). A daily diary study of relationships between feelings of gratitude and well-being. *The Journal of Positive Psychology, 12,* 323-332. http://doi.org/10.1080/ 17439760.2016.1198923

Packard, T. (2009). The 2008 Leona Tyler Award address. Core values that distinguish counseling psychology: Personal and professional perspectives. *The Counseling Psychologist*, *37*(4), 610-624. http://doi.org/10.1177/0011000009333986

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. http://doi.org/10.1037/0021-9010.88.5.879

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731. http://doi.org/10.3758/BF03206553

Rashid, T. (2015). Positive psychotherapy: A strength-based approach. *Journal of Positive Psychology*, *10*(1), 25-40. http://doi.org/10.1080/17439760.2014.920411

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic

motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Samuelson, M., Carmody, J., Kabat-Zinn, J., & Bratt, M. A. (2007). Mindfulness-based stress

reduction in Massachusetts correctional facilities. *The Prison Journal*, *87*(2), 254-268.

http://doi.org/10.1177/0032885507303753

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction.

American Psychologist, *55*(1), 5-14. http://doi.org/10.1037/0003-066X.55.1.5

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress:

Empirical validation of interventions. *American Psychologist, 60*, 410-421.

Tsang, J. (2006). Gratitude and prosocial behavior: An experimental test of gratitude. *Cognition*

and Emotion, 20(1), 138-148.

Vespia, K. M. (2007). A national survey of small college counseling centers: Successes, issues,

and challenges. *Journal of College Student Psychotherapy*, *22*(1), 17-40.

http://doi.org/10.1300/J035v22n01

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures

of positive and negative affect: The PANAS scales. *Journal of Personality and Social*

Psychology, 54, 1063-1070. http://dx.doi.org/10.1037/0022-3514.54.6.1063

Westin, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling*

Psychologist, 34(5), 719-751.

Wood, A. M., Froh, J. J., & Geraghty, A. W. (2010). Gratitude and well-being: A review and

theoretical integration. *Clinical Psychology Review, 30,* 890-905.

http://doi.org/10.1016/j.cpr.2010.03.005

Wood, A. M., Joseph, S., Lloyd, J., & Atkins, S. (2009). Gratitude influences sleep through the

mechanism of pre-sleep cognitions. *Journal of Psychosomatic Research, 66*, 43-48.

Wood, A. M., Joseph, S., & Maltby, J. (2008). Gratitude uniquely predicts satisfaction with life:

Incremental validity above the domains and facets of the five-factor model. *Personality

and Individual Differences, 45,* 49-54. http://doi.org/10.1016/j.paid.2008.02.019

Chapter II

Review of the Literature

As noted in chapter one, the aim of the present study is to further examine the underlying mechanisms in the relationship between gratefulness and subjective well-being (SWB). In particular, the study examines whether mindfulness mediates the relationship between gratefulness and SWB. That is to say, the current study will evaluate whether gratefulness predicts mindfulness, which then predicts SWB. In chapter two, the following integrative analysis will be offered to elucidate pertinent background information for this study: (a) a review of gratefulness as it relates to psychology; (b) a brief history of mindfulness including the application to human functioning; (c) an overview of well-being; (d) a proposed conceptualization of the relationship between gratefulness and SWB with mindfulness as a mediating variable using broaden-and-build theory (Fredrickson, 1998, 2001, 2004) as a framework; and (e) pertinent data and trends regarding the college-aged population. Chapter two concludes by reiterating the proposed hypotheses for the present study and offering a brief introduction to chapter three.

Gratefulness: A Review

Whereas the construct of gratitude found its origins centuries ago in the realms of philosophy and theology (Emmons & Crumpler, 2000; Emmons & McCullough, 2004), the field of psychology has only recently begun examining its place in human functioning (Emmons & McCullough, 2004; McCullough et al., 2001). Historically, psychology has examined gratitude within the context of prosocial behavior and ways in which societies operate. One of the largest contributions to the study and understanding of gratitude came from Adam Smith, who, in the 18th century, shifted the framework of gratitude from rational discussions of logic to that of

moral sense and emotion (Harpham, 2004; McCullough et al., 2001). Smith's advancement of

understanding gratitude is also notable as it was one of the first secular conceptualizations of the

construct (Harpham, 2004). Smith is well known for his 18th century philosophical works

associated with the economic theory of capitalism (e.g., *The Wealth of Nations*). However, it was

Smith's lesser known response and revision to *The Wealth of Nations* detailing the sufficiency of

self-interest as compared to prosocial tendencies as they apply to the functioning of societies that

advanced our modern understanding of gratefulness. In *The Theory of Moral Sentiments*, Smith

described the role of mutual sympathy (i.e., feeling understood by others) and prosocial behavior

akin to gratitude as being essential for societies to advance beyond self-interest (Harpham, 2004;

Smith, 1790/1982). Smith's work in understanding gratitude and its role in human functioning is

still influencing the understanding and application of the construct in modern-day research

(Harpham, 2004; McCullough et al., 2002; McCullough et al., 2001).

   Cognitive-emotion theory of gratitude. The work of cognitive-emotion researchers and

theorists from 1950 to modern day reflects a substantial influence from the early work of Adam

Smith (McCullough et al., 2001). For example, Heider (1958) largely aligned with Smith's view

that the intentions of the benefactor (i.e., agent acting prosocially) are of key importance in the

evaluation of gratitude. In an expansion of Smith's work, Heider (1958) documented that

beneficiaries would rather have their expressions of gratitude ascribed to internal motivations

(i.e., values, identity) as opposed to social norm or obligation; that is to say, those on the

receiving end of prosocial behavior tend to make dispositional attributions (i.e., internal values)

as opposed to situational attributions (i.e., what is polite given the circumstances). An additional

contribution to the cognitive-emotion understanding of gratitude came from Bernard Weiner

(1986), who described the importance of attribution in the experience and expression of

gratitude. According to Weiner, emotions belong to two categories: (a) outcome-dependent and (b) attribution-dependent. Outcome-dependent emotions result when individuals are the recipients of positive outcomes and they experience positive emotions (e.g., happiness, joy, excitement) or when they are the recipients of negative outcomes and they experience negative emotions (e.g., anger, fear, sadness). Attribution-dependent emotions, such as gratitude, are more complex because they require the experience of an outcome-dependent emotion (e.g., happiness) and then an attribution to the actions of an external factor (e.g., another individual) (Weiner, 1986). Many empirical studies of gratitude operate according to Smith's litmus test for gratitude (i.e., recognition of gratitude from an impartial observer) by requiring participants to recognize and evaluate case vignettes for the presence and degree of gratitude experienced or expressed (Harpham, 2004). In a study focusing on attribution and gratefulness, Zaleski (1988) had 400 undergraduate students rate (a) how much their success in graduating depended on external factors and (b) how grateful they anticipated they would feel upon graduation. The results of the study included a moderate correlation ($r = .23$) between external attributions and anticipated gratitude upon graduation. That is to say, those attributing academic success to external factors forecasted an increased experience of gratefulness at graduation.

The history of extensive examination and conceptualization of gratitude also suggests a potential evolutionary component. Trivers (1971) offered that gratitude may serve an evolutionary function in regulating social responses to acts of benevolence or altruism. Trivers (1971) also posited that a cost-benefit paradigm applied to the experience and expression of gratitude in human functioning (i.e., higher imposition on the part of the benefactor results in higher experience of gratitude from the beneficiary). Another researcher, Schwartz (1967), concurred with evolutionary assertions that gratitude provides a means for social relationships to

maintain a positive and prosocial alignment, a concept that has been supported in the literature

(see Fredrickson, 1998, 2001; Seligman & Csikszentmihalyi, 2000).

The cognitive influence in psychological study toward the end of the 20th century can

also be seen in the work of Ortony and colleagues (1988), who conceptualized gratitude as the

result of a cognitive system. Their research posited that gratitude is part of a cognitive system

constructed of three aspects of an individual's representation of interpersonal events: (a) the

benefactor's action is evaluated as praiseworthy, (b) when the benefactor's behaviors diverge

from social desirability or politeness, or (c) when the benefactor's behaviors are evaluated

positively by the beneficiary (Ortony et al., 1988). Well within the cognitive-emotion facet of

research, but still tied to the early work of Smith, Lazarus and Lazarus (1994) theorized gratitude

to be an empathetic emotion that is predicated on an individual's ability to recognize and feel

empathy toward others. Even though their definition of gratitude is created centuries later, it

closely resembles the mutual sympathy articulated by Smith in his work (Harpham, 2004;

McCullough et al., 2001). They also proposed a core relational theme (i.e., a prototype or

schema) that provides individuals with a means of interpreting events and discerning the

pertinence of emotions or experiences as they relate to their identity. In regard to gratitude,

Lazarus and Lazarus (1994) depicted a core relational theme of insight or appreciation regarding

a benevolent gift from another. As a result, according to their theory, individuals only experience

gratitude when they have an empathetic recognition of the imposition or expenditure that a

benefactor has undertaken for their benefit (Lazarus & Lazarus, 1994). Related to cognitive-

emotion research, gratitude has also been examined within the framework of moral affect

(McCullough et al., 2001).

Gratitude as moral affect. The current moral affect conceptualization of gratitude (McCullough et al., 2001) maintains significant conceptual and empirical support from modern research on the subject. McCullough and colleagues (2001) offered justification for classifying gratitude as a moral affect, as it is categorized in the same group as empathy, sympathy, guilt, and shame, yet typically results from prosocial behavior. George Simmel (1950) described gratitude as "the moral memory of mankind" (p. 388), and others said that, whereas it is distinct from morality, gratitude incorporates at least three utilities that serve to proliferate moral behaviors (McCullough et al., 2001). Even categorized as moral affect, McCullough et al. (2001) clarified that gratitude is not inherently moral but influences moral behaviors. From the moral affect conceptualization, they posited that gratitude has three roles: (a) a moral barometer, (b) a moral motivator, and (c) a moral reinforcer.

The analogy of a barometer refers to the ability of gratitude to measure and signal a change from a prior state, which McCullough and colleagues (2001) described as "…an affective readout that is sensitive to a particular type of change in one's social relationships" (p. 252). The moral barometer function of gratitude also includes the recognition that change can result from an insular perception of morality (McCullough et al., 2001). This role operates from a phenomenological perspective instead of an absolute sense of morality, which exclusively considers how a behavior impacts the larger system. One empirical example of the moral barometer function comes from Okamoto and Robinson (1997), who conducted a study in which a confederate held the door open for an unsuspecting participant with varying degrees of imposition (i.e., large expenditure of effort to little effort applied). They found that the cost-benefit paradigm applied to the experience of gratitude because individuals were more likely to experience a disposition of gratitude when they perceived a large expenditure of effort from the

benefactor. In addition, Okamoto and Robinson (1997) found that individuals are less likely to

experience gratefulness when the benefactor was perceived to have caused the circumstances

requiring benevolence (i.e., making amends for one's own faults). In another study supporting

the moral barometer function of gratitude, Bar-Tal and colleagues (1977) found that individuals

experience and express higher levels of gratitude when the imposition or act of benevolence is

undertaken by an individual with whom the participant is less familiar (e.g., random act of

kindness).

McCullough and colleagues (2001) proposed three caveats to the moral barometer

function of gratitude: (1) gratitude taking place in response to a non-human agent (e.g., karma,

luck), (2) affect that may have been mislabeled as gratitude under circumstances of relief,

gladness, and happiness (e.g., realizing that circumstances could have been much worse), and (3)

gratitude may be activated from emotions independent of attribution (e.g., happiness). Lastly,

from a developmental standpoint, McCullough et al. (2001) noted that the moral barometer

function of gratitude does not operate consistently until at least middle childhood. This speaks to

the cognitive complexity inherent in the experience of gratitude and particularly the moral

barometer role. Notwithstanding those caveats, there is plentiful support for the moral barometer

function of gratitude (McCullough et al., 2001).

McCullough and colleagues (2001) also referenced gratitude as a moral motivator, as

individuals who experience and express gratitude are often motivated to reciprocate prosocial

behavior. Previous research has described this phenomenon as reciprocal altruism (Trivers,

1971); however, there are important differences between gratitude and similar motivators (e.g.,

indebtedness, inequity) that maintain the obligation of repayment (McCullough et al., 2001).

Greenberg and colleagues (1982) posited that indebtedness is associated with three factors: (a) a

necessity to recompense, (b) a fear of not being able to recompense, and (c) concerns regarding

how to recompense. Conversely, gratitude has been associated with positive emotions, which

undergirds a major difference between gratefulness and indebtedness. Research supporting the

moral motivator function of gratitude has been somewhat scarce, and McCullough and

colleagues (2001) noted that the research methodology of such studies was "not terribly

rigorous" (p. 261). However, research indicates that grateful emotions tend to motivate some

form of reciprocity insomuch as the beneficiaries are likely to act in a prosocial manner

(Emmons, 2004; Fredrickson, 2001). Whereas gratitude is regularly studied on an individual

level and applied within psychosocial interventions and positive psychology (Emmons &

Crumpler, 2000; Emmons & McCullough, 2003; Emmons & Shelton, 2002; Emmons & Stern,

2013; McCullough et al., 2004; Seligman et al., 2005), the impact of gratefulness has been

theorized to positively impact larger systems such as communities (Fredrickson, 2004), which

supports the moral motivator function of gratitude (McCullough et al., 2001).

  Lastly, McCullough et al. (2001) described the third function of gratitude as a moral

reinforcer. The term moral reinforcer describes the manner in which benefactors receive

expressions of gratitude from beneficiaries for acting in a benevolent manner, thus positively

reinforcing their behavior. This function of gratitude has clear ties to the early work of Smith,

who posited that moral sentiments such as gratitude could serve to elicit positive social

consequences beyond that of self-interest. In a unique experiment, McGovern and colleagues

(1975) found that individuals who were thanked for accepting an electric shock on behalf of a

confederate were more likely to continue receiving shocks on his or her behalf as compared to

those who were not thanked. In another study displaying the generalizability of the moral

reinforcer function of gratitude, Rind and Bordia (1995) found that servers who wrote "thank

you" on restaurant checks were tipped as much as 11% more than when the restaurant checks

were left without an expression of gratitude. Support for the moral reinforcer function of

gratitude can also be seen within contemporary frameworks such as broaden-and-build theory,

which provides an explanation for how gratitude may improve interpersonal connectedness and

relationships (Fredrickson, 2001, 2004). As such, there appears to be consistent

multigenerational support for gratitude to maintain a function as a reinforcer of moral and

prosocial behavior. Whereas gratitude appears to maintain sufficient support to remain

categorized as moral affect, researchers also investigated claims that gratefulness is mainly the

result of an individual's disposition (McCullough et al., 2002).

Dispositional gratitude. Research has examined a number of correlates associated with

those who maintain a disposition toward gratitude. McCullough and colleagues (2002) defined a

grateful disposition as "… a generalized tendency to recognize and respond with grateful

emotion to the roles of other people's benevolence in the positive experiences and outcomes that

one obtains" (p. 112). McCullough et al. (2002) further described the disposition of gratitude to

encompass co-occurring facets including intensity, frequency, span, and density. *Intensity* refers

to the belief that those who maintain a grateful disposition are likely to experience more

powerful positive emotions than those with a less grateful disposition. *Frequency* refers to the

belief that those who maintain a grateful disposition are more likely to experience feelings of

gratitude multiple times over the course of a day as compared to someone with a less grateful

disposition. *Span* refers to the belief that those who have a grateful disposition will recognize

gratefulness in more areas of their lives than those with weaker dispositions toward gratitude.

Lastly, *density* refers to the belief that those who maintain a grateful disposition are more likely

to recognize the influence of multiple external factors in their positive outcomes (McCullough et

al., 2002). McCullough and colleagues (2002) offered the clarification that highly grateful

individuals do not necessarily attribute their positive outcomes exclusively to external sources;

instead they have the tendency to incorporate an array of individuals and factors into their

understanding of what contributed to the positive outcome. In their study, McCullough et al.

(2002) established that those who have higher dispositions toward gratitude generally have

higher rates of positive affect, prosocial behaviors, life satisfaction, and religiosity/spirituality,

while generally having weaker dispositions toward envy and materialism. Their study supports

the prior work of McCullough et al. (2001) and bolsters support for the multifaceted benefits of

gratitude.

Emmons and McCullough (2003) expanded on the complexities of gratitude by

describing it as "an emotion, an attitude, a moral virtue, a habit, a personality trait, or a coping

response" (p. 377). Further complicating the understanding of gratefulness, the nature of

gratitude is conceptualized as both a trait and/or a state in contemporary literature. Chaplin and

colleagues (1988) described trait characteristics as relatively consistent individual differences in

one's level of mood, whereas state characteristics represent an individual's experience at a

specific point in time. More so, trait characteristics are more likely to arise from internal factors

as opposed to state characteristics, which are largely influenced by situational factors (Chaplin et

al., 1988). For example, the disposition toward gratitude (i.e., gratefulness) in everyday life may

be viewed as a trait (McCullough et al., 2002), whereas the sentiment that is experienced from

another's expression of gratitude is viewed as a state.

Gratefulness in counseling practice. A great deal of attention has been placed on

understanding the role of gratitude interventions and their implications toward human

functioning. Emmons and Stern (2013) highlighted how gratitude can reduce blood pressure,

improve immune functioning, stimulate happiness and well-being, generate helpful behaviors, while also reducing risk of depression, anxiety, and substance use disorders. A specific application to counseling practice is seen in accelerated experiential dynamic therapy (Russell & Fosha, 2008), which Emmons and Stern (2013) explained conceptualizes gratitude as a positive transformational construct because of the innate relational characteristics that are associated with feeling validated, affirmed, and esteemed. An additional example of gratitude in counseling practice is portrayed in a larger positive psychotherapy program outlined by Rashid (2015) that contains a specific module on gratefulness.

Gratefulness is most routinely seen in counseling practice through direction for activities that promote and foster feelings of gratitude. Emmons and McCullough (2003) are recognized for proliferating the most common method of cultivating gratefulness by having individuals list a number of things they were grateful for over the course of a few weeks. Other examples of gratitude interventions within counseling practice are seen in journaling practices that include written and verbal expressions of gratefulness to others (Lambert & Fincham, 2011). Gratitude interventions as described previously are the most representative within the literature. Davis and colleagues (2016) pointed out that very little research has been conducted investigating the impact of larger scale interventions such as psycho-educational groups. However, Wong and colleagues (2017) found preliminary support for the effectiveness of a gratitude group program.

Whereas Wood and colleagues (2010) cautioned researchers and practitioners about becoming too enraptured by the promise of interventions designed around gratefulness, Davis and colleagues (2016) underscored some of the attractiveness of gratitude interventions, including the parsimonious nature of gratitude interventions, the level of enjoyment experienced by participants in comparison to other assignments, and the interpersonal aspect of recognizing

others' role in one's life. Such characteristics make gratitude interventions an appealing

supplement to traditional psychotherapy. McCullough and colleagues (2002) noted that the

benefits of gratitude interventions are not limited to self-report measures from the participant but

are acknowledged and denoted by peer groups. Further support for gratitude interventions comes

from Seligman and colleagues (2005) who found that gratitude interventions elicited the largest

positive change when compared to four alternative interventions aimed at increasing happiness

and decreasing depressive symptoms. Cheng and colleagues (2015) investigated the application

of journaling gratitude interventions within the medical field and found support for gratitude

interventions to decrease stress and depressive symptoms within a sample of health care

professionals.

Regardless of conceptualization, gratefulness maintains a strong association with many

positive outcomes such as SWB. Over the last few decades, researchers have made advances in

defining gratefulness and understanding what constructs it can predict. However, far less is

understood about mechanisms of action and how gratefulness transmits its effects onto

outcomes. Specifically, Wood and colleagues (2010) highlighted that much less is understood

about the relationship between gratefulness and SWB. The following will provide a brief review

of mindfulness, a construct that may help explain the relationship between gratefulness and

SWB.

Mindfulness: A Brief History

As previously noted, researchers have consistently found a strong association between

gratefulness and facets of well-being (Emmons & McCullough, 2003; Emmons & Shelton, 2002;

Emmons & Stern, 2013; Lambert & Fincham, 2011; McCullough et al., 2004; Tsang, 2006;

Wood et al., 2010; Wood et al., 2009; Wood et al., 2008; Wood, Maltby et al., 2008). However,

the underlying relationship and mechanisms of action between gratefulness and SWB are far

from fully explored (Davis et al., 2016; Liao & Weng, 2018; Wood et al., 2010).

Previous research highlighted how gratefulness has been theorized to include components

of attribution, moral affect, and even evolutionary significance (McCullough et al., 2001;

Trivers, 1971; Weiner, 1986). Furthermore, gratefulness has been described with facets including

complex cognitive constructs such as insight, awareness, and perspective-taking. Mindfulness, a

closely related concept, contains similar cognitive processes to that of gratefulness (e.g.,

conscious awareness) and has also been associated with a number of positive outcomes in

spiritual and psychological traditions (Brown & Ryan, 2003; Wilbur, 2000). As such,

mindfulness, defined as "the state of being attentive to and aware of what is taking place in the

present" (Brown & Ryan, 2003, p. 822), may help explain the relationship between gratefulness

and SWB. Langer and Moldoveanu (2000) pointed out that mindfulness has primarily been

researched in three domains: 1) health, 2) business, and 3) education. For the purposes of this

study, the examination of mindfulness will be limited to its role in health, namely psychology.

Similar to gratitude, mindfulness as a practice and a construct has been in existence for

centuries. As Brown and Ryan (2003) pointed out, the current understanding of mindfulness

within social sciences is rooted in Eastern practices of meditation (i.e., conscious awareness). In

particular, many Buddhist traditions employ mindfulness as a means of enduring suffering and

increasing awareness of painful experiences. Whereas mindfulness practices have existed for

centuries, contemporary research supports the benefits of increased mindfulness with a plethora

of positive outcomes (Kabat-Zinn, 1990; Kabat-Zinn et al., 1985; Kabat-Zinn et al., 1992).

Follette and colleagues (2006) noted that mindfulness, as seen in contemporary psychology, is

predominantly used to control or manage negative emotions, which differs from some of the

traditional Buddhist applications that employed mindfulness techniques to experience and endure suffering. The associations established between mindfulness and positive health outcomes make it a desirable feature to incorporate into counseling practice or to include as supplemental treatment to psychotherapy intervention.

      Mindfulness in counseling practice. Similar to gratefulness, the construct of mindfulness has become increasingly popular in counseling practice. Whether in the form of self-help, individual psychotherapy, or group practice, mindfulness has established a following in counseling practice. Perhaps the largest application of mindfulness into counseling practice comes in the form of mindfulness-based approaches to therapy. For example, mindfulness-based stress reduction has been found to be effective in treating anxiety disorders (Kabat-Zinn et al., 1992), chronic pain (Kabat-Zinn et al., 1985), negative symptoms in cancer patients (Carlson et al., 2001; Speca et al., 2000), depression (Teasdale et al., 2000), and stress (Williams et al., 2001). Outside of specific mindfulness-based treatments, the construct of mindfulness is imbedded within other approaches to counseling such as acceptance and commitment therapy (Hayes et al., 1999) and dialectical behavior therapy (Linehan et al., 2001).

      The infusion of mindfulness into therapeutic intervention and theory has been well documented in psychology. In addition, the literature has found consistent support for the association between mindfulness and positive outcomes in mental and physical health. SWB represents one such positive outcome measure that encompasses a comprehensive phenomenological perspective of one's quality of life. The following will define and describe SWB in a manner that is pertinent to the current study.

Subjective Well-Being: An Overview

Research interest that includes positive psychology, strength-based conceptualizations, mental health, and SWB has seen an increase in recent years. More specifically, researchers within counseling psychology are well equipped to study SWB due to its alignment with the core values of the field (Gelso et al., 2014; Packard, 2009). SWB is a popular construct in the literature as it relates to individuals' perceptions of their overall quality of life, and, as a result, is relevant in numerous research questions in psychology.

A common dilemma within the literature relates to how SWB is conceptualized. Discrepancies regarding how SWB should be defined originated with the ancient Greeks and persist to modern discourse on the topic (Lent, 2004). SWB is a broad construct and, as such, includes evaluations in the context of social relationships, religion and spirituality, income and wealth, and physical health (Diener et al., 2018). Cooke and colleagues (2016) highlighted the existence of four common approaches to conceptualizing SWB; namely, they describe hedonic, eudaimonic, quality of life (QoL), and wellness frameworks for SWB. Cooke and colleagues (2016) also described how iterations of well-being are often used interchangeably in the literature. As a result, there is often confusion between terminology and how well-being is quantified. The current study operationalizes SWB as it is found within the hedonic conceptualization, including facets of satisfaction with life, absence of negative affect, and the presence of positive affect, which are supported in previous literature (see Liao & Weng, 2018) and the tripartite model described by Diener and colleagues (1985).

The hedonic framework gives primary attention to pleasure and happiness, often focusing on satisfaction with life, lack of negative affect, and manifestation of positive affect (Diener et al., 1985; Ryan & Deci, 2000). The eudaimonic framework differs from the hedonic approach

and posits that well-being is attained by optimal functioning, fulfilling one's potential, or developing insight to one's true nature (Lent, 2004). For example, Ryan and Deci (2000) developed a eudaimonic model that asserts autonomy, competence, and relatedness are central to well-being. Cooke and colleagues (2016) called attention to the similarities between the hedonic and eudaimonic approaches while recognizing fundamental differences in the constructs within well-being. Whereas hedonic and eudaimonic frameworks are often endorsed in psychological research, fields such as medicine, sociology, and counseling make use of QoL and wellness conceptualizations (Cooke et al., 2016).

The QoL approach to well-being is often more broadly defined than hedonic and eudaimonic frameworks and includes psychological, physical, and social indicators of well-being (Cooke et al., 2016). The broad conceptualization of QoL makes it popular in medical practice and research (Lent, 2004). The final predominant framework of well-being is the wellness approach that is common in counseling research. Roscoe (2009) pointed out that the wellness model is focused on optimal functioning, but less clearly defined than other frameworks for well-being.

One consequence of competing models of well-being is the interchangeable use of terms between conceptualizations that vary in definition depending on the researchers employing them. Cooke and colleagues (2016) also pointed out that the over proliferation of constructs within well-being can also lead to collinearities, or overlapping constructs that largely describe the same phenomenon. The difficulties in measuring and describing well-being largely underscore the importance of researchers offering clear operational definitions of how they understand well-being, the model being endorsed, and a justification for use of the respective model.

Whereas conceptualizations of SWB vary, Diener and colleagues (2018) described SWB as the cognitive and affective evaluations one has of one's life. The phenomenological perspective inherent in their description of SWB is useful because it accounts for variance in cultural goals, values, and desires (Deiner et al., 2018). As such, the description developed by Diener and colleagues (2018) aligns with the hedonic conceptualization, the values of counseling psychology, and existing counseling psychology research on the topic of well-being (e.g., Liao & Weng, 2018). Due to the subjective nature and broad construct space, SWB is commonly measured using multiple instruments (Diener et al., 2018; Liao & Weng, 2018). Accordingly, the current study will use the conceptualization that SWB is measured by the facets of happiness and positive affect.

Proposed Conceptualization of Gratefulness and SWB

A recent review of positive psychology highlights the underutilization of strength-based positive interventions in counseling practice (Magyar-Moe et al., 2015). Accordingly, strength-based positive counseling interventions, and a more comprehensive understanding of the relationship between gratefulness and SWB, have yet to fully emerge (Gerstein, 2006; Kaczmarek, 2006; Smith, 2006; Wood et al., 2010). Current research on the topic has found repeated support for the association between gratefulness and SWB. For example, Froh, Yurkewicz, and Kashdan (2009) investigated gender differences in the relationship between gratitude and SWB in adolescence, finding that adolescents that reported grateful moods also indicated higher levels of SWB. However, less is known about mechanisms of action, looming third variables, comparison groups, and guiding frameworks for the effect of gratefulness on other constructs. Broaden-and-build theory (Fredrickson, 1998, 2001, 2004) provides a useful means of conceptualizing gratefulness in relation to other positive emotions.

Broaden-and-build theory. When investigating mediation or indirect effects, it is important to maintain a foundation in sound theoretical rationale prior to testing in an effort to prevent post hoc biases (Frazier et al., 2004; Holmbeck, 1997). As a young science in comparison to philosophy and medicine, psychology is understandably biased toward previously established epistemologies. Whether tethered to the pathology of the medical model or the zeitgeist of social psychology surrounding obedience and bystander intervention, as a field, psychology has consistently been concerned with problems and how to solve them. The overwhelming focus on problems and pathology within psychological research is one reason for challenges in seeking to understand and describe the strength-based facets of human functioning. When researchers began to examine positive emotions, pre-existing literature was scarce and no models or frameworks adequately described the form and function or positive emotions in the human experience. In the absence of a sufficient model for explaining positive emotions, Fredrickson (1998) sought to explain the pertinence and role of positive emotions through two intertwined hypotheses, namely the broaden effect and the build effect. The following will provide a background of broaden-and-build theory and pertinent information supporting its use as a guiding framework in this study.

Broaden-and-build theory (Fredrickson, 1998, 2001) provides a recognized framework for understanding how positive emotions function. Historically, researchers have investigated the function of negative emotions such as fear, anger, and disgust. Most theoretical models of negative emotions posit that there are action tendencies associated with emotions; this hypothesis provides for the evolutionary adaptive function of emotion (Lazarus, 1991; Levenson, 1994). For example, when individuals perceive the emotion of fear, they may have a desire to fight, flight, or freeze and manifest physiological responses such as increased heart rate. Fredrickson (1998),

however, contended that the specific action tendencies readily applied to negative emotions do not adequately explain experiences with positive emotions. For example, Fredrickson (1998) contended that individuals experience positive emotions when they feel safe and satiated, which does not require specific and decisive thought-action tendencies for survival like negative emotions. Accordingly, Fredrickson (1998, 2001) developed broaden-and-build theory, which conceptually and empirically illustrates that when individuals experience positive emotions, their thought-action repertoires *broaden,* and their psychological resources *build*.

It has long been theorized that natural emotions may serve adaptive functions in human beings (Lazarus, 1991; Levenson, 1994). Ekman's (1992) research on basic emotions across cultures supports the contention that emotions play an adaptive role in survival. In particular, such a perspective is easily applied within the realm of negative emotions. For example, the emotion of fear experienced in a potentially life-threatening scenario primes an individual for combat or escape. This action-oriented tendency aligns well with the theory of natural selection that is often used to determine the form of function human physiology or psychology. Other theorists, such as those from the behaviorist tradition, assert that emotions are inconsequential in comparison to the impact of environmental conditions. Resolving that there are varying opinions surrounding the definition and existence of emotions, the current study will rely on the definition provided by Isgett and Fredrickson (2015): "Emotions are brief, multisystem responses to the way individuals appraise their current circumstances" (p. 864).

Falling in line with the majority of psychological research, early investigation was almost exclusively concerned with negative emotions. Fredrickson (1998) suggested that this could be due to a relative lack of positive emotions compared to the negative converse, the fixation of psychological research on problems such as the magnitude of distress and consequence arising

from negative emotions, or the alignment of negative emotions with prevailing views of natural selection and adaptive functioning. Regardless of reasoning, in order to expand the basic and applied literature, research was necessary to determine whether pre-existing models and frameworks of negative emotions would still apply to positive emotions.

It did not take long for Fredrickson and colleagues to determine that models of negative emotions did not apply well to positive emotions for a number of reasons, including positive emotions are fewer and less specific than negative emotions, positive emotions are generally neglected in comparison to negative emotions, and whereas negative emotions are associated with specific and narrowing action-based tendencies, positive emotions are associated with thought-based, non-specific, broadening characteristics (Fredrickson, 1998, 2001, 2004).

Broaden-and-build theory provides conceptual and empirical support for the connection between gratitude and SWB via increases in positive thought-action repertoires that subsequently increase psychological resources (Fredrickson, 1998, 2001, 2004). That is to say, as individuals experience positive emotions (e.g., gratefulness), they develop thought-action tendencies to behave in a prosocial manner while also increasing positive psychological resources that can be accessed later on. Chang and colleagues (2012) found that individuals exhibiting dispositional gratefulness do not always directly reciprocate to their benefactor, but they often pass on prosocial benefits to a third party, which expands the network of beneficence. Their work lends credibility to the broadening effect within broaden-and-build theory. That is to say, people may recategorize or reclassify third party individuals to their own cognitive and social groups after experiencing positive emotions, thus increasing the likelihood to behave prosocially toward an individual who previously may not have garnered the same beneficence. This finding is in concert with the growth and strengthening of social relationships and friendships of

dispositionally grateful individuals (Emmons & Shelton, 2002), and supports the upward

spiraling effect of broaden-and-build theory (Fredrickson, 1998, 2001). Also rooted in broaden-

and-build theory, Lee and colleagues (2015) provided support for gratitude predicting basic

psychological needs such as autonomy, relatedness, and competence, which bolsters the

development and proliferation of positive psychological resources. The findings of Drążkowski

and colleagues (2017) that a gratitude intervention led to increased positive emotion that then

increased feelings of trust toward a stranger also aligns with the framework of the broaden-and-

build upward spiral.

Whereas broaden-and-build theory provides conceptual support, Wood et al. (2010)

highlighted that much is unknown about the underlying mechanisms between gratefulness and

SWB. The majority of research thus far appears to have drawn out the correlational association

but foregone a closer examination of what might contribute to the outcome.

More recently, Liao and Weng (2018) found support for the broaden-and-build

framework (Fredrickson, 1998, 2001) as applied to gratefulness and SWB. Their findings were

among the first to delve into the role of mediating variables between gratefulness and

outcome/criterion variables through the use of structural equation modeling (SEM). Other

research has investigated broaden-and-build theory as it relates to affective neuroscience in

treating emotional dysfunction and psychopathology (Garland et al., 2010). As Fredrickson

(1998, 2001, 2004) noted, the resources developed as a result of positive emotional experiences

have been found to persist far beyond the short temporal states in which they were acquired. The

resulting implications of sustained positive psychological resources (e.g., perceived social

connection) and prosocial thought-action tendencies show promise in application to college-aged

individuals, who represent a high-risk population (Mattanah, 2016a/b; Vespia, 2007).

College-aged Population

College-aged students represent a high-risk population in regard to mortality and negative mental health consequences (Holt-Lunstad et al., 2015; Kessler et al., 2005; Mattanah, 2016b; Vespia, 2007). Data reinforces this phenomenon by describing the involvement of college-aged individuals in high-risk behaviors such as unprotected sexual intercourse, substance abuse (e.g., binge drinking), high prevalence of psychological distress, and inchoate areas of the brain associated with impulse control and decision making (Mattanah, 2016a/b). In addition, developmental transitions during college-age years may result in loneliness or lack of perceived social support, a risk factor that is strongly associated with negative outcomes in physical and mental health (LeRoy et al., 2017; Mattanah, 2016b; NAMI, 2012; Pedrelli et al., 2015). Negative outcomes in mental and physical health extend to increase rates of attrition in college-aged students. Deberard and colleagues (2004) highlighted that over half of all undergraduate student attrition takes place in the first year of college. This becomes an issue of social justice for financially limited students who are challenged to pay back costly student loans without a college degree (Nguyen, 2012).

The field of counseling psychology maintains core values of endorsing positive, strength-based intervention when possible (Gelso et al., 2014; Packard, 2009). Accordingly, from a strength-based, developmental perspective, it is important for research to investigate positive means of increasing the SWB (Seligman & Csikszenmihayli, 2000). Counseling psychology values individuals' phenomenological perspectives and supports the adoption of a phenomenological framework in research and clinical practice (Gelso et al., 2014). In addition, when possible, counseling psychology attends to preventative interventions as opposed to remedial practices; this has implications for college-aged individuals. A recent study concluded

that gratefulness has a strong positive association with academic integration and degree commitment in undergraduate students (Modifi et al., 2014). The associations between gratefulness, SWB, and the values of counseling psychology are well founded; however, the literature is less clear regarding underlying mechanisms between gratefulness and positive outcomes (Liao & Weng, 2018; Wood et al., 2010). The present study will serve to further explore the relationship between gratefulness and SWB.

The Present Study

As previously described, gratefulness, a trait that requires awareness of, and attention to beneficence, is associated with numerous positive outcome variables (Emmons & McCullough, 2003; Emmons & Shelton, 2002; Emmons & Stern, 2013; Lambert & Fincham, 2011; McCullough et al., 2004; Tsang, 2006; Wood et al., 2010; Wood et al., 2009; Wood et al., 2008; Wood, Maltby et al., 2008). The broaden-and-build theory provides a well-supported framework for the way experiences with positive emotions lead to an upward spiral of positive outcomes (Fredrickson, 2001, 2004). In particular, through the broaden-and-build theory, gratefulness is associated with thought-action repertoires that promote prosocial behavior (Fredrickson, 1998, 2001, 2004). Additional thought-action repertoires associated with gratefulness are linked to strengthened social bonds and relationships (Fredrickson, 1998, 2001, 2004). Mindfulness has been described as attention and awareness to the present moment, which requires conscious awareness, a characteristic also inherent in the experience of gratefulness (Brown & Ryan, 2003). SWB is influenced by individuals' perception of social relationships (Deiner et al., 2018), and is a commonly measured outcome variable in social sciences. Wood et al. (2010) called attention to the limited understanding of the relationship between gratefulness

and SWB. The present study will expand the literature through examining mindfulness as a mediating variable within the relationship between gratefulness and SWB.

Exploring increasingly complex explanations and theory in social science research is a sign of a maturing discipline once direct associations have been established (Cohen et al., 2003; Hoyle & Kenny, 1999; Kline, 2016). Frazier and colleagues (2004) drew attention to the lack of more advanced statistical methods (e.g., tests of mediation or indirect effects) being employed in counseling psychology research despite the common use of such variables in social science research. Jaccard and colleagues (1990) contended that the relationships between most variables in psychology and social science contain interaction effects due to the complex nature of human subjects' research. The present study seeks to further explore the underlying relationship mechanisms between gratefulness and SWB in college-aged individuals by examining the potential role of mindfulness as a mediating variable through a path analysis (Kline, 2016). Accordingly, the present study will expand the literature pertaining to the underlying mechanisms between gratefulness and SWB. In addition, the present study has the implications to inform positive, strength-based interventions designed to increase the SWB of college-aged individuals.

In accordance with the findings in the literature regarding the relationship between gratefulness and SWB, and in recognition of the role of mindfulness, the following hypotheses are proposed:

H1 Gratefulness will be significantly and positively associated with mindfulness;

H2 Gratefulness will be significantly and positively associated with happiness;

H3 Gratefulness will be significantly and positively associated with positive affect;

H4 Mindfulness will significantly mediate the relationship between gratefulness and happiness; and

H5 Mindfulness will significantly mediate the relationship between gratefulness and positive affect.

The focus in chapter two has been to elucidate the nature of gratefulness, mindfulness, and SWB employing empirical evidence as well as introduce broaden-and-build theory (Fredrickson, 1998, 2001, 2004) as a framework for conceptualization. Research has yet to fully explore the underlying mechanisms of the relationship between gratefulness and SWB. Chapter three will provide methodological information pertaining to the present study.

Chapter III

Method

Overview

The purpose of this chapter is to discuss and provide the following information: (a) review of the present study, (b) recruitment, (c) participants, (d) procedure, (e) instrumentation, and (f) plan for analyses.

Review of the Present Study

In chapter two, a review of the pertinent literature was presented including relevant empirical and conceptual development for the constructs and population of interest. As referenced in previous chapters, the present study examined the role of mindfulness as a mediating variable in the relationship between gratefulness and subjective well-being (SWB) among college-aged students. Specifically, mindfulness was examined as a potential mediating variable between gratefulness and two facets of SWB (i.e., happiness and positive affect). The following hypotheses were proposed:

H1 Gratefulness will be significantly and positively associated with mindfulness;

H2 Gratefulness will be significantly and positively associated with happiness;

H3 Gratefulness will be significantly and positively associated with positive affect;

H4 Mindfulness will significantly mediate the relationship between gratefulness and happiness; and

H5 Mindfulness will significantly mediate the relationship between gratefulness and positive affect.

An example of one proposed mediation model will be illustrated in Figure 1.

Recruitment

The current study recruited participants through convenience sampling from the undergraduate student population at Radford University and Virginia Polytechnic Institute and State University (Virginia Tech). The target sample size was equal to or greater than 200 completed data sets to align with previous literature (Liao & Weng, 2018) and simulation studies (Hoyle & Kenny, 1999) that suggest a sample size of 200 is necessary for adequate statistical power (Kline, 2016; Westin & Gore, 2006). Oversampling, a strategy to increase the likelihood of attaining a sufficient sample size, was used to account for attrition between measurement at Time 1 and Time 2. The researcher accessed participants through the Radford University SONA research system, which required student registration and preserved the integrity of the sample to represent the population of interest (i.e., college-aged students). The study was advertised as "Gratefulness and Well-Being: Mindfulness as a Mediator." As a result of the small student population at Radford University, the recruitment sample expanded to include participants from Virginia Tech to increase the likelihood of attaining an adequate sample for appropriate statistical analysis. The researcher also accessed participants through snowball sampling in conjunction with instructors of record at Virginia Tech. A student email address was required to participate in the present study; this process served as a safeguard to preserve the integrity of the population of interest. Participants in the study received no direct benefit from the researcher for participation; however, some students may have received course credit or extra credit through participation in the study as indicated per course syllabi in their respective classes.

Participants

The population of participants for this study included undergraduate students registered in the SONA research system at Radford University and undergraduate students at Virginia

Tech. The current study began data collection at the beginning of the Spring 2019 semester and

continued to recruit participants until more than 200 had completed Time 1 and Time 2 surveys.

Surveys were classified as qualified if all instruments, demographics, and validity check items

were entirely completed. Survey demographic information included (a) age, (b) race/ethnicity,

(c) gender identification, (d) academic year, and (e) academic major or program of study. This

population sample was used because of its relevance to the research questions and hypotheses for

the present study.

Procedure

The researcher procured approval from the Institutional Review Board (IRB) at Radford

University to conduct human subjects' research for the present study as can be seen in Appendix

B. Once Radford University IRB approval was obtained, the current study was advertised on the

SONA research system at Radford University. The SONA research system at Radford University

displayed the study under the title "Gratefulness and Well-Being: Mindfulness as a Mediator." A

letter of cooperation was attained from Virginia Tech faculty denoting their willingness to

distribute information regarding the study and eligibility requirements to undergraduate students

in their courses. The Radford University Qualtrics program was used to display and record

survey data.

Participants who clicked on the Qualtrics research link for the current study were directed

to an informed consent page, which is displayed in Appendix C. An electronic informed consent

was provided to potential participants at the beginning of the online survey. This process allowed

for participants to make an educated decision about whether they wanted to continue with

participation in the study. The informed consent outlined the primary aspects of the study and

rights of the participant, the purpose of the study, the procedure that the participant will be asked

to follow, any potential discomforts and risks, the approximate duration of the survey, a

statement of confidentiality, a statement of voluntary participation, potential incentives and

benefits for participation, and procedures for terminating participation. Potential participants

were also provided with the contact information of the principle investigator and the interim

Dean of the Graduate College in the instance that participants had questions or concerns

pertaining to the current study. Participants were informed that the study includes the current

survey materials and a follow-up survey to be completed in 2 weeks. The informed consent

survey indicated that students would be reminded twice via their provided student email address

to complete the second survey in 2 weeks' time. After reviewing the informed consent page,

participants were asked to click a box indicating that they had read and understood the

information provided. Participants were then directed to click the continue button if they wished

to proceed with the study or to close out of the window if they decided to withdraw from

participation.

  If participants clicked the continue button and elected to proceed with the current study,

they were presented with a new page requesting that they create a unique participant

identification code (participant ID) and provide their university (i.e., student) email address.

Participants were asked to create a unique participant ID comprised of their favorite color and

the last four digits of their phone number (e.g., red8205). The participant ID was used to protect

confidentiality while matching data from Time 1 and Time 2 for statistical analyses. After

creating a participant ID, participants proceeded to the survey instruments. The Time 1 survey

included the Gratitude Adjectives Checklist (GAC; McCullough et al., 2002), the Mindful

Attention Awareness Scale (MAAS; Brown & Ryan, 2003), a demographic questionnaire

including participant age, race/ethnicity, gender identification, academic year, and academic

major or program of study. The Time 2 survey included the four-item Subjective Happiness

Scale (Lyubomirsky & Lepper, 1999), the 10-item Positive Affect Subscale of the Positive and

Negative Affect Schedule (PANAS; Watson et al., 1988), and the MAAS (Brown & Ryan,

2003). A validity item instructing the participant to select answer option "B" was included on

both surveys to evaluate whether participants appropriately attended to the instruments. Survey

items and instruments used in the current study are displayed in Appendix A.

Following completion of the survey items, participants were presented with a page

thanking them for their time and reminding them that they would be contacted in 2 weeks to

complete the follow-up survey. Participants received an email from a research assistant on the

Monday morning 2 weeks following their initial survey completion. The email included a prompt

reminding them of the Time 2 survey and a link to complete the survey via Radford University

Qualtrics. Research assistants sent a final email reminder to participants who had yet to complete

the Time 2 survey on the Thursday 2 weeks after the initial survey was completed. Participant

data for the Time 2 survey that were received after the 2-week response period were excluded

from data analysis.

Once the survey became active on the Radford University SONA research system, the

researcher began compiling participant IDs and email addresses twice weekly. Participant IDs

and email addresses were maintained and secured electronically in a password protected

spreadsheet on a password protected computer. In order to keep track of response rates, the

researcher entered the date for Time 1 survey completion and Time 2 survey completion adjacent

to the participant ID and email address in the spreadsheet. Research assistants were able to

access the spreadsheet twice per week to gather the participant email addresses for the Time 2

survey email prompts.

Two points of data collection were used in the current study to minimize common method variance (CMV). CMV refers to spurious findings attributable to the process of measurement as opposed to the constructs that the measures are intended to represent (Podsakoff et al., 2003). Examples of potential causes of CMV include acquiescence biases (i.e., tendency to agree with item regardless of content), common scale anchors (i.e., influence due to repeated use of the same Likert anchor points), and scale length (i.e., the influence resulting from previous items remaining in short-term memory due to abbreviated scale length). Lindell and Whitney (2001) highlighted that cross-sectional studies including attitudes and behaviors may be particularly susceptible to overestimated correlations due to CMV. Researchers can account for CMV through procedural techniques as well as statistical methods. The current study employed two procedural CMV remedies suggested by Podsakoff and colleagues (2003), including temporal separation of measurement (i.e., two points of data collection) and protecting participant anonymity to reduce evaluation apprehension. Components of the Tailored Design Method (TDM) were also used in the survey construction in order to increase the quality to data collected from participants. The TDM is a group of techniques and strategies based on social exchange theory that were developed in the 1970s to increase participation in phone and mail surveys (Dillman et al., 2014). Examples of TDM strategies employed in the current survey include informing potential participants that their effort will contribute to a better understanding of the subject matter, clearly indicating the time required to complete the study, providing a progress bar on the screen that illustrates the amount of the survey that remains to be completed, and using similar structure and formatting for each instrument (e.g., Likert-type scales).

Instrumentation

Gratefulness. The Gratitude Adjectives Checklist (GAC; McCullough et al., 2002) measured gratefulness in the current study. The GAC employs a Likert-type scale (1 "inaccurate" to 9 "accurate") for participants to assess the degree to which three adjectives (*grateful*, *thankful*, and *appreciative*) describe them in the last 24 hours. The GAC has demonstrated good reliability and validity as seen by Nezlek and colleagues (2017), who found a Cronbach's alpha of .85 in a sample of college students. McCullough and colleagues (2002) established convergent validity by finding positive associations between the GAC and measures of positive affect and life satisfaction. For the current sample, the coefficient alpha was .85. Liao and Weng (2018) effectively used the GAC to examine the relationship between gratefulness, meaning in life, and SWB.

Mindfulness. The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) measured mindfulness. The MAAS is a 15-item scale designed and validated to measure dispositional mindfulness, specifically, "the presence or absence of attention to and awareness of what is occurring in the present" (Brown & Ryan, 2003, p. 824). The MAAS employs a Likert-type scale (1 "almost always" to 6 "almost never") to assess the frequency with which individuals perceive a given experience. A sample question is "I could be experiencing some emotion and not be conscious of it until sometime later." The MAAS has exhibited good reliability as evidenced by Brown and Ryan (2003), who calculated Cronbach's alpha at .87; it was .86 and .89 at Time 1 and Time 2, respectively, in the current study. Brown and Ryan (2003) also established convergent validity for the MAAS through comparison with measures of emotional intelligence, mindful engagement, and openness to experience.

Subjective well-being. The current study used two continuous scales (i.e., *happiness* and *positive affect*) to measure SWB. This measurement is in concert with previous research from Liao and Weng (2018) that builds from the Diener (1994) inclusive framework for well-being as well as the Diener (1984) framework of subjectivity, positive experience, and global assessment of one's life trademarks. A multi-faceted approach to measuring SWB provides a more nuanced understanding of the participant experience and potential for further research exploration regarding each component. The measurement of SWB in the current study also aligns with guidelines from Frazier and colleagues (2004) that highlighted the benefits of using multiple measurements for a single construct. Diener and colleagues (2018) described SWB as the evaluations one has of one's life in regard to cognitive and affective domains. As such, the measures of happiness and positive affect are appropriate to represent SWB in the present study.

Happiness. The four-item Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999) measured happiness in the current study. The SHS uses a Likert-type scale (1 "very unhappy" to 7 "very happy") to assess participant happiness. Higher scores are indicative of higher levels of happiness. The SHS has displayed good reliability as Lyubomirsky and Lepper (1999) calculated Cronbach's alpha as .88 in a sample of college students; it was calculated at .84 in the current study. Lyubomirsky and Lepper (1999) also established convergent validity for the SHS through finding a positive relationship between the SHS and scores of optimism in a sample of college students.

Positive affect. The 10-item Positive Affect subscale of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) measured positive affect in the current study. The 10-item Positive Affect subscale employs a Likert-type scale (1 "very slightly or not at all" to 5 "extremely") to evaluate the extent participants align with adjectives representative of positive

affect (e.g., proud). Higher scores on the scale are indicative of increased positive affect. Hardin

and colleagues (2007) calculated Cronbach's alpha as .87 in a sample of college students;

coefficient alpha was calculated at .92 in the current study. Hardin and colleagues (2007)

established construct validity through finding a negative association between the Positive Affect

subscale and a measure of distress in a sample of college students.

        Demographics Form. Participants were asked to complete a brief demographics form

regarding their age, race/ethnicity, gender identity, academic year (i.e., freshman, sophomore,

junior, senior), and academic major or program of study. The descriptive data was used to

specify the degree to which the data aligns with the population and may be generalized.

Analyses

       After the completion of data collection, the researcher downloaded the data from the

Qualtrics survey into an SPSS file for preliminary analysis. SPSS software was used to analyze

data collected. Data were disqualified and excluded from the final data set if participants had not

completed both Time 1 and Time 2 surveys. Survey data were also disqualified and excluded if

surveys were not entirely completed or if the participant responded incorrectly to the validity

check item. SPSS software was used to calculate single variables for each scale based upon their

respective instructions for scoring. Descriptive data were also calculated for participant

demographic information. Once data cleaning and descriptive analyses were completed, the

researcher proceeded to the primary analysis.

       Because of time limitations, the current study was not able to collect data at an adequate

number of points to support causal inferences (i.e., three panel waves of data are required for

causal inference). Consequently, process analysis was used to test for mediation effects between

gratefulness and the criterion variables. The PROCESS macro (Hayes, 2013; Preacher & Hayes,

2004) was used to test for a mediation effect between predictor and criterion variables. In contrast to the causal steps logic proliferated by Baron and Kenny (1986), more contemporary approaches to investigating intervening variables rely on a path-analytic framework instead of segmented hypotheses regarding specific paths within a model (Hayes, 2009). Montoya and Hayes (2017) noted that this approach allows for testing increasingly complex models containing indirect effects representing varying iterations of a process or theory. The PROCESS approach to analysis is widely used in social sciences and is appropriate for the hypotheses of the current study.

The primary data analysis included the SPSS tool PROCESS to examine the relationship between gratefulness, happiness, and positive affect using mindfulness as a mediating variable. The PROCESS macro aids in investigating how a predictor variable may transmit its effect on a criterion variable through intervening variables such as mediators (Hayes, 2013). For example, PROCESS can calculate confidence intervals through a bootstrapped resampling to determine if gratefulness predicts mindfulness, which then predicts a criterion variable such as happiness. In other words, this method can be used to determine whether the relationship between gratefulness and happiness can, in part, be explained by mindfulness. This method will be used to investigate all of the hypotheses in the current study.
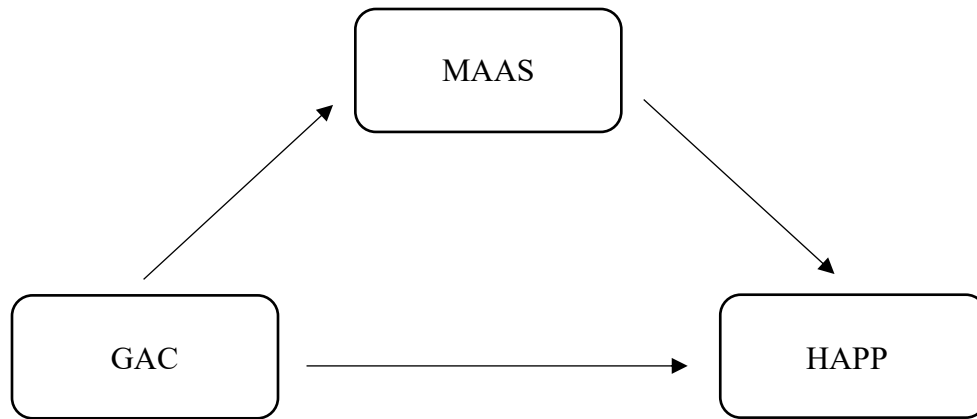
Figure 1. An example of a proposed model for the role of mindfulness as a mediating variable between gratefulness and happiness.

Chapter IV

Results

The purpose of this chapter is to present the results of the analysis conducted to test the

hypotheses of the present study. In chapter three, methodology for the present study, including

participant populations, procedures, instrumentation, and data analysis, was discussed. As

referenced in previous chapters, the present study examined the role of mindfulness as an

intervening variable in the relationship between gratefulness and subjective well-being (SWB)

among college-aged students. Specifically, mindfulness was tested as an intervening variable

between gratefulness and two facets of SWB (i.e., positive affect and happiness). Diener (1994)

highlighted the value of using expansive measures of well-being to enhance the measurement of

an otherwise abstract construct. It was hypothesized: (1) gratefulness will be significantly and

positively associated with mindfulness; (2) gratefulness will be significantly and positively

associated with happiness; (3) gratefulness will be significantly and positively associated with

positive affect; (4) mindfulness will significantly mediate the relationship between gratefulness

and happiness; and (5) mindfulness will significantly mediate the relationship between

gratefulness and positive affect.

The following information regarding the present study is provided: (a) preliminary data

analysis and (b) primary data analysis.

Preliminary Data Analyses

Descriptive data for the normality of key variables of interest are presented in Table 1

and descriptive statistics and correlations for all scale variables are provided in Table 2. A total

of 507 subjects participated in the Time 1 survey for the present study. Of the 507 initial data

sets, 310 were excluded due to not providing an email address to follow up ($n = 43$), failing the

attention check item ($n = 25$), not completing 100% of the survey ($n = 21$), completing the Time 1 survey multiple times, failing to complete the Time 2 survey, or not completing the survey within the 2-week time limit ($n = 221$). A total of 297 subjects completed the Time 2 survey for the present study (59% response rate). Of the 297 data sets from the Time 2 survey, 100 data sets were excluded due to not providing an email or participant ID to match data sets ($n = 39$), failing the attention check item ($n = 8$), not completing 100% of the survey ($n = 17$), and completing the Time 2 survey multiple times or not completing the survey within the 2-week time limit ($n = 36$). Thus, a final sample of 197 participants was included in further data analysis. Little's Missing Completely at Random (MCAR) test found that missing data were random and not significant.

Table 1

Skewness and Kurtosis Values for All Scores.

Scale	Skewness	SE of Skewness	Kurtosis	SE of Kurtosis
GAC	-.617	.173	1.003	.345
MAAS	-.108	.173	-.096	.345
SAT	.773	.173	.198	.345
PA	-.623	.173	.049	.345
HAPP	-.342	.173	-.323	.345

Table 2

Descriptive Statistics and Correlations for all Scale Variables (n = 197)

	1	2	3	4	5	Possible Range	M	SD
1. GAC	(.85)					3-15	11.52	2.42
2. MAAS	.191	(.89)				1-6	3.62	.76
3. PA	.305	.223	-.392	(.92)		10-50	33.16	8.76
4. HAPP	.397	.327	-.562	.533	(.84)	1-7	4.70	1.16

Note: All correlations are significant at *p* < .01 (for two-tailed test). *N* = 197. Cronbach's coefficient alpha reported in parenthesis. GAC = Gratitude Adjective Checklist; MAAS = Mindful Attention Awareness Scale; PA = Positive Affect; HAPP = Subjective Happiness Scale.

Sample demographics. Participant data were collected from undergraduate students at two mid-sized public universities in the Mid-Atlantic United States. In compliance with the Institutional Review Board, responses for participant age are presented in stratified groups as opposed to scaled units in order to protect participant confidentiality. Descriptive statistics collected for age, race/ethnicity, gender identity, and academic year of the participant sample are provided in Table 3.

Table 3

Sample Demographic Data.

	Frequency	Percent
Age		
18-22 years old	176	89.3%
23-27 years old	16	8.1%
28-32 years old	3	1.5%
33-37 years old	2	1.0%
Race / Ethnicity		
Hispanic or Latino	12	6.1%
Black or African American	27	13.7%
Asian or Pacific Islander	11	5.6%
White	141	71.6%
Multi-Racial	6	3.0%
Gender Identity		
Male	73	37.1%
Female	121	61.4%
Transgender / Gender Non-Conforming or Gender Variant	3	1.5%
Academic Year		
Freshman	51	25.9%
Sophomore	22	11.2%
Junior	58	29.4%
Senior	66	33.5%

Internal consistency. The following Cronbach's coefficient alphas were computed for the final participant sample (see Table 2). The GAC (α = .85), MAAS (α = .89), PA (α = .92), and HAPP (α = .84) instruments each demonstrated good internal consistency for the sample. The internal consistencies for the measures used in the current study were equivalent to or

greater than that of the validation studies previously referenced with the exception of the happiness scale, which had a marginal difference of .04 between observed consistency and that of the validation study (i.e., α = .84 in the present study and α = .88 in the validation study).

Mean differences. In regard to Time 1 participant data, there was not a statistically significant difference between scores for male (M = 11.68, SD = 2.00) and female (M = 11.44, SD = 2.66) identifying participants, $t(182.85)$ = .734, p = .464. In addition, no statistically significant difference was found between racial and ethnic identity group scores for the GAC, $F(4, 192)$ = 1.04, p = .168. Time 1 MAAS scores for male identifying participants (M = 3.88, SD = .64) were found to have a statistically significant difference from female identifying participants (M = 3.50, SD = .85), $t(182.55)$ = 7.98, $p < .001$. No statistically significant difference was found from Time 1 MAAS scores between racial and ethnic identity groups, $F(4, 192)$ = 1.34, p = .256.

In regard to Time 2 participant data, there was a statistically significant difference between mean HAPP scores for male identifying participants (M = 5.02, SD = 1.12) and female identifying participants (M = 4.54, SD = 1.13), $t(192)$ = 2.94, p = .004. Mean HAPP scores had no statistically significant difference between racial and ethnic groups, $F(4, 192)$ = 2.32, p = .059. In regard to mean male and female PA scores, there was not a statistically significant difference found, $t(192)$ = 1.62, p = .107. In addition, no statistically significant difference was found between racial and ethnic identity groups, $F(4, 192)$ = 1.56, p = .177. In regard to Time 2 MAAS scores, male identifying participants (M = 3.89, SD = .77) were found to have a statistically significant difference from female identifying participants (M = 3.45, SD = .83), $t(192)$ = 3.69, $p < .001$. No statistically significant differences were found between racial and ethnic identity groups related to Time 2 MAAS scores, $F(4, 192)$ = 1.16, p = .331.

Primary Analysis: Tests of Mediation for Mindfulness

Prior to examining the potential role of mindfulness as a mediating variable, it was

necessary to establish a direct association between values for gratefulness and those of

mindfulness. Results indicated a statistically significant positive relationship between

gratefulness and mindfulness (beta = .06, $p < .001$). Regression analysis was also used to

calculate a total effect (i.e., X → Y) for gratefulness and the two outcome variables (i.e., PA

HAPP). Statistics for the total, direct, and indirect effects are presented in Table 5. Results

indicated that gratefulness was a significant predictor of happiness (beta = .19, $p < .001$) and

positive affect (beta = 1.11, $p < .001$).

Table 5

Effects of Gratefulness on Outcome Variables Utilizing Bootstrap Resampling Method

					95% CI	
Total, direct and indirect effects	R^2	β	SE	Beta	Lower	Upper
Total effects						
Gratefulness → happiness	.16*	.19*		.40*		
Gratefulness → positive affect	.09*	1.11*		.31*		
Direct effects						
Gratefulness → happiness		.17	.03		0.11	0.23
Gratefulness → positive affect		.99	.25		0.50	1.48
Indirect effect						
Gratefulness → mindfulness → happiness		.02	.01		.004**	.050**
Gratefulness →mindfulness → positive affect		.19	.08		.003**	.309**

Note. N = 197. 5,000 bootstrap sample. CI = confidence interval; β = unstandardized direct and indirect effect estimates; Beta = standardized direct and indirect effect estimates. * indicates p <.001. ** indicates significant mediation effect

The SPSS computational macro PROCESS was used to test the hypotheses that mindfulness would mediate the relationships between gratefulness and HAPP, and PA (Hayes, 2012). The PROCESS macro utilizes ordinary least squares regression and bias-corrected bootstrapping to examine mediation effects (Hayes, 2012). The analysis used the bootstrapping technique to resample the data 5,000 times to create a confidence interval determining whether any significant mediation effect was present. The PROCESS macro has been widely applied within social sciences to investigate complex relationships among variables.

Gratefulness→mindfulness→HAPP. It was hypothesized that mindfulness would significantly mediate the relationship between gratefulness and happiness. That is to say, gratefulness would significantly predict mindfulness that would then significantly predict happiness. In this model, gratefulness was positively associated with happiness (beta = .17, $p <$ .05), meaning that as participant scores increased for gratefulness, they also increased for happiness. Gratefulness was also positively associated with mindfulness (beta = .06, $p < .05$), and mindfulness was positively associated with happiness (beta = .40, $p < .05$). In addition, the indirect effect (ab) was significant (beta = .02, [.004, .049]). Overall, this model supported that as participant scores for gratefulness increased, so did the scores for mindfulness and happiness. In other words, the relationship between gratefulness and happiness can be, in part, explained by mindfulness. As a result, this model bolsters support for the potential role of mindfulness as a mechanism of action (i.e., mediator) in the relationship between gratefulness and happiness due to the bootstrapped confidence interval upper and lower limits falling outside of zero, which indicates statistical significance. Figure 2 displays the mediation model.

Figure 2. beta weights are shown in the figure above. * indicates *p* < .05.

Gratefulness→mindfulness→PA. It was hypothesized that mindfulness would significantly mediate the relationship between gratefulness and positive affect. That is to say, gratefulness would significantly predict mindfulness that would then significantly predict positive affect. In this model, gratefulness was positively associated with positive affect (beta = .99, *p* < .05), meaning that as participant scores increased for gratefulness, they also increased for positive affect. Gratefulness was also positively associated with mindfulness (beta = .06, *p* < .05), and mindfulness was positively associated with positive affect (beta = 1.98, *p* <.05). In addition, the indirect effect (ab) was significant (beta = .12, [.003, .309]). Overall, this model supported that as participant scores for gratefulness increased, so did the scores for mindfulness and positive affect. In other words, the relationship between gratefulness and positive affect can be, in part, explained by mindfulness. As a result, this model lends support for the potential role of mindfulness as a mechanism of action (i.e., mediator) in the relationship between gratefulness and positive affect due to the bootstrapped confidence interval upper and lower limits falling outside of zero, which indicates statistical significance. Figure 3 displays the mediation model.
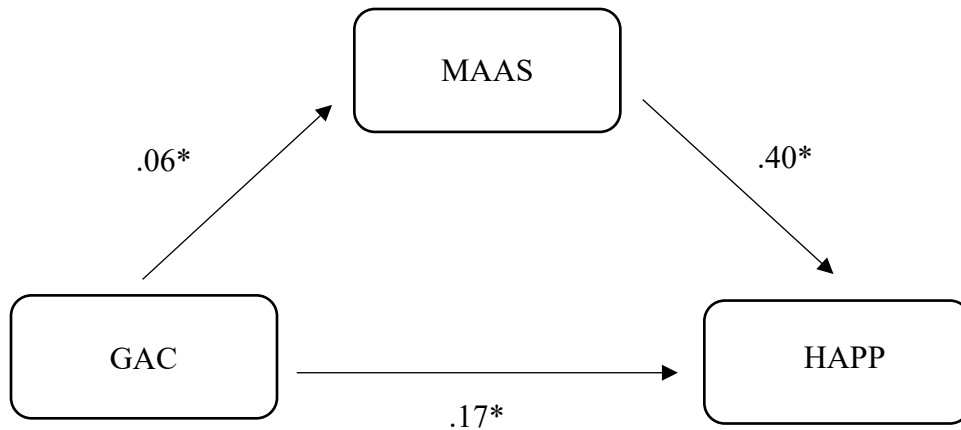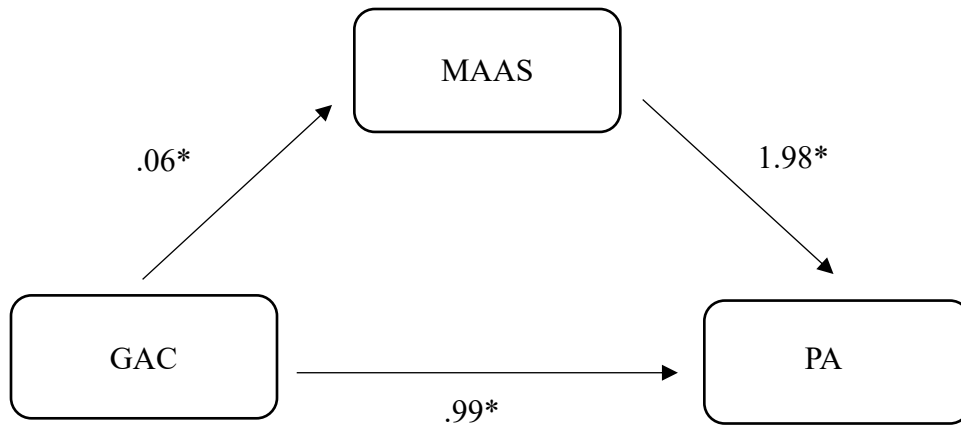
Figure 3. beta weights are shown in the figure above. * indicates $p < .05$.

Table 6 provides additional information from the mediation analysis for each model tested. Models with a confidence interval upper and lower limit outside of zero indicate a significant mediation effect. That is to say, gratefulness significantly predicted mindfulness, which then predicted the criterion variable. Full mediation takes place when the mediator variable accounts for all of the change between predictor and criterion variable. Partial mediation, a far more common occurrence, takes place when the mediator variable only accounts for a marginal portion of change between predictor and criterion. In regard to the present study, significant mediation was found in the models using criterion variables of happiness and positive affect.

Table 6

Mediation Analyses

Hypotheses	Path a	Path b	Path c	Path c'	Indirect Effect	Bootstrap CI (LL, UL)
GAC(X)→MAAS (M)→ HAPP (Y)	.06 (.022)*	.40 (.096)*	.19	.17 (.031)*	.02	.004, .049**
GAC(X)→MAAS (M)→ PA (Y)	.06 (.022)*	1.98 (.793)*	1.11	.99 (.248)*	.12	.003, .309**

Note: * indicates *p* < .05. ** indicates confidence interval outside of zero. Standard errors are in parentheses

Post-hoc analysis of alternative models found support for the viability of alternative mediation modeling.

Summary

        In chapter four, an overview of the present study and hypotheses were provided. The hypotheses were tested through mediation analysis described previously. Hypotheses one, two, three, four, and five were confirmed. Hypothesis (1) suggested that gratefulness will be significantly and positively associated with mindfulness; (2) offered that gratefulness will be significantly and positively associated with happiness; (3) posited that gratefulness will be significantly and positively associated with positive affect; (4) supposed that mindfulness will significantly mediate the relationship between gratefulness and happiness; and (5) predicted that mindfulness will significantly mediate the relationship between gratefulness and positive affect; all hypotheses were confirmed. Overall, the analysis supported the role of mindfulness as a

significant mediating variable between gratefulness and positive affect, and gratefulness and

happiness.

Chapter V

Discussion

In chapter four, results of the current study, including preliminary and primary data analyses, were presented. This chapter will provide an overview the present study, general findings, specific findings, implications for treatment, limitations and directions for future research, and a summary with final conclusions. General and specific findings related to data analyses and hypotheses will incorporate how the results compare and contrast to extant empirical and conceptual literature previously discussed. The chapter will conclude by addressing limitations of the current study and making suggestions for directions of future research.

Overview of the Present Study

The purpose of the current study was to investigate the relationship between gratefulness and subjective well-being (SWB) in college-aged individuals. As referenced in previous chapters, better understanding the relationship between gratefulness and SWB in a college-aged sample is of importance because of the need to establish preventative treatment approaches for a high-risk population (i.e., college-aged individuals). The extant literature has supported the role of gratefulness in predicting SWB (Emmons & McCullough, 2003; Emmons & Shelton, 2002; Fredrickson, 2004; Liao & Weng, 2018; McCullough et al., 2004). However, less is known about mechanism of action between gratefulness and SWB or whether differences exist depending on how SWB is conceptualized (Wood et al., 2010). To better understand the relationship between gratefulness and SWB, the current study investigated mindfulness as a mediating variable. Final survey data were collected from 197 traditionally aged college students at two points separated by 2 weeks to reduce common method variance. Instrumentation included validated measures for

gratefulness, mindfulness, and for the three dimensions of SWB. The SPSS and the PROCESS Macro were used along with bootstrapped confidence intervals to investigate direct and indirect effects of the variables in question. Specifically, gratefulness was found to be associated with higher levels of mindfulness, which was in turn associated with increased happiness and positive affect. That is to say, the current study found significant mediation between gratefulness, mindfulness, and happiness as well as positive affect. However, a manual instrumentation error regarding the measure for another variable, satisfaction with life (SWL), invalidated results pertaining to that specific variable; therefore, no reliable data related to SWL were collected and no SWL findings will be reported. Overall, results suggest that mindfulness may play a key role in explaining the relationship between gratefulness and positive outcomes such as SWB. Such findings highlight the importance of continued research informing clinical services and policy for how positive psychology and strength-based approaches may be used to improve work with high risk populations such as college-aged individuals.

Operational definitions and conceptual boundaries. The current study investigated variables associated with human functioning, including emotions. As such, the current study employed the definition of emotion as "Emotions are brief, multisystem responses to the way individuals appraise their current circumstances" (Isgett & Fredrickson, 2015, p. 864). Gratefulness was examined in the current study through the definition offered by McCullough and colleagues as "a general tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains" (McCullough et al., 2002, p. 112). As previously referenced, the definition employed by the current study differs from other definitions of gratefulness that are more discrete than temporal and better represent a state of being rather than a trait or trend. Cooke and colleagues (2016)

highlighted the large variance in measurement of well-being within the greater literature and underscored the importance of clearly articulating one's conceptualization of well-being. The current study applied the hedonic conceptualization of SWB (Diener et al., 1985) that includes dimensions of satisfaction with life, lack of negative affect, and manifestation of positive affect. In concert with a recent study from Liao and Weng (2018), the current study assessed SWB via measures of happiness, and positive affect. Aside from the utility of comparison by implementing similar instrumentation to previous studies, the measurement of SWB in the current study aligns with best practices in research by using multiple indicator measures within a variable to offer a more nuanced understanding (Cooke et al., 2016; Frazier et al., 2004). Lastly, the current study defined mindfulness as "the state of being attentive to and aware of what is taking place in the present" (Brown & Ryan, 2003, p. 822). The operational definition of mindfulness used by the current study also aligns with instrumentation that was selected and allows for comparison with previous studies examining similar variables and relationships (Liao & Weng, 2018). The definitions and conceptualizations endorsed in the current study allowed for investigation of two distinct mediation models: 1) gratefulness predicting mindfulness, which in turn predicts happiness, and 3) gratefulness predicting mindfulness, which in turn predicts positive affect.

During data analysis, an encoding error was found related to the five-item Satisfaction with Life Scale. It was determined that an error associated with entering the Likert-type scale led to participant confusion and, consequently, invalidated the data associated with the respective scale. Accordingly, data associated with the SWL measure were excluded from further analysis and hypotheses associated with SWL were discarded.

Empirical and theoretical support for the current study. Hoyle and Kenny (1999)

support that examining increasingly complex theory and explanation is one sign of advancement

within a discipline. Likewise, other scholars support the use of more complex analyses (e.g.,

mediation) within counseling psychology to further understanding of increasingly complex, yet

common, relationships between variables (Frazier et al., 2004; Jaccard et al., 1990). Preliminary

support for the current study was found through a number of empirical studies examining the

relationships between gratefulness and positive outcomes such as SWB (Emmons &

McCullough, 2003; Emmons & Shelton, 2002; Fredrickson, 2004; Liao & Weng, 2018;

McCullough et al., 2004; Peterson & Seligman, 2004). Wood and colleagues (2010) questioned

some previous findings and called for further research regarding gratefulness and associated

outcomes. Mindfulness, the variable investigated as a mediator in the current study, has also

been associated with positive outcomes (Bowen et al., 2006; Brown & Ryan, 2003; Carmody &

Baer, 2008; Samuelson et al., 2007).

Whereas preliminary empirical support is a best practice in research, Frazier and

colleagues (2004) also highlighted the value of theory-based research investigation within

quantitative studies to reduce the likelihood of spurious findings. Accordingly, the current study

derived theoretical support from broaden-and-build theory (Fredrickson, 1998, 2001).

Fredrickson's theory provides a framework for the way variables associated with positive

emotions interact; this differs from previous studies, which typically limited research

investigation to negative emotions (Lazarus, 1991; Leveson, 1994). Broaden-and-build theory

(Fredrickson, 1998, 2001) posits that as individuals experience positive emotions, their thought-

action repertoires broaden, and their psychological resources build. Due to associations with

positive outcomes and positive psychology, the constructs investigated in the current study are

congruent with the theorized relationships of broaden-and-build theory. Accordingly, broaden-and-build theory offers a useful model that conceptually and empirically aligns with how gratefulness may interact with mindfulness and SWB as hypothesized in the current study.

Summary and critique of previous research. As previously referenced, existing empirical and theoretical research provides foundational support for the benefits associated with gratefulness and mindfulness such as increased well-being (Brown & Ryan, 2003; Carmody & Baer, 2008; Emmons & McCullough, 2003; Emmons & Shelton, 2002; Fredrickson, 2004; McCullough et al., 2004; Peterson & Seligman, 2004). However, there are a number of notable limitations associated with previous research, as well as gaps in the literature, that offer opportunities for advancing understanding. Current research calls attention to the need for increased use of advanced analysis to better understand variables in counseling and social sciences (Cooke et al., 2016; Frazier et al., 2004). Whereas a number of studies have examined gratefulness and mindfulness independently, no known study has specifically investigated the relationship between gratefulness and SWB with mindfulness as a potential mediating variable. In fact, the authors of a recent study examining the relationship between gratefulness and SWB called for future research to investigate alternative resources such as mindfulness (Liao & Weng, 2018). Other limitations include the way gratefulness has been measured in previous research, and the lack of clarity pertaining to how gratefulness exerts effects on to other variables. Most markedly, Wood and colleagues (2010) have questioned the efficacy of gratitude interventions, citing lack of equitable comparison groups, while also drawing attention to lack of clarity relating to mechanisms of action between gratefulness and outcome variables. Other researchers highlighted that studies of gratefulness have not been tested on large scales or successfully integrated and evaluated within a psychoeducational group format (Davis et al., 2016). In

addition, much of the extant literature applies an amalgam of constructs to represent SWB

without justification of how or why said variables were selected or combined. The current study

provides a justification for the use of the hedonic model of SWB and, in alignment with previous

research, uses multiple indicator measures of the SWB to provide a more nuanced understanding

of the relationships examined (Cooke et al., 2016). Research inquiry, such as conducted by the

current study, seeks to address many limitations of previous studies while also informing clinical

work and policy associated with the college-aged individuals. The following will highlight

general findings from the current study to set a foundation before delving into more specific

findings and implications.

General Findings

General findings of the current study are intended to provide the reader a base or

framework to better understand specific findings related to respective hypotheses. After data

collection was completed and the data sets were cleaned, a simple bivariate regression was

conducted between gratefulness and each of the criterion variables for SWB (i.e., HAPP, PA)

before proceeding to the mediation analysis. Results indicated a significant positive association

between gratefulness and happiness, as well as between gratefulness and positive affect.

Using the results of the bivariate regression as a guide, the outcome variables (i.e.,

HAPP, PA) were examined in independent mediation models. A mediation analysis was

conducted using the PROCESS model (Hayes, 2013) to examine the potential role of

mindfulness as a mediating variable between gratefulness and the outcome variables. The

bootstrapping method was used to resample the data 5,000 times to create a confidence interval

to test the significance of the indirect effects. Overall findings indicated that mindfulness was a

significant mediator between gratefulness and the outcome variables of happiness (beta = .02,

[.004, .049]) and positive affect (beta = .12, [.003, .309]) as indicated by bootstrapped

confidence interval ranges that excluded zero. Taken together, the findings suggest that

gratefulness increases mindfulness, which in turn increases happiness and positive affect. These

findings underscore the importance of the potential role that gratefulness and mindfulness play in

the SWB of college-aged individuals.

Specific Findings

      Hypothesis 1: Findings related to gratefulness predicting mindfulness. Prior to

testing the role of mindfulness as a mediating variable, it was important to examine the baseline

relationship between gratefulness and mindfulness. The baseline relationship was established by

regressing gratefulness scores on mindfulness scores. The regression found that scores for

gratefulness significantly predict scores for mindfulness (beta = .06, $p < .001$). The results of the

current study were consistent with previous research linking gratefulness and mindfulness

(Emmons, 2012; Emmons & Stern, 2013). In addition, these findings are in support of

Hypothesis 1 stating gratefulness will be significantly and positively associated with

mindfulness. That is to say, as scores for gratefulness increase, so too do scores for mindfulness.

As previously discussed, gratefulness and mindfulness both require conscious attention and

awareness (Brown & Ryan, 2003; Emmons & Stern, 2013), which may provide some insight as

to their positive association. The findings also align with the broaden-and-build theoretical

framework, as both gratefulness and mindfulness appear to broaden awareness (Brown & Ryan,

2003; Carmody & Baer, 2008; Emmons, 2012) as well as build additional psychological

resources (Emmons & McCullough, 2003; Fredrickson, 1998, 2001; McCullough et al., 2002).

Taken together, the findings related to Hypothesis 1 provide a foundation for investigating

multiple models with mindfulness representing a potential mediating variable. The results

pertaining to Hypothesis 1 also offer valuable insight as to how scholars and practitioners may

design strength-based intervention aimed at improving gratefulness and, as a result, also increase

mindfulness.

Hypothesis 2: Findings related to gratefulness predicting happiness. Before

examining the potential role of mindfulness as a mediating variable, it was important to

investigate the direct effect between gratefulness and the remaining criterion variables within the

hedonic SWB model used in the current study. Accordingly, scores for gratefulness were

regressed on scores for happiness to establish a baseline relationship. Results indicated a

statistically significant positive relationship between gratefulness and happiness (beta = .19, *p* <

.001). That is to say, the results from the current study support that as scores for gratefulness

increase, so too do scores for happiness. These findings support Hypothesis 2 that gratefulness

with be significantly and positively associated with happiness. Such results also align with

previous research that has documented the positive relationship between gratefulness and

happiness (Emmons & McCullough, 2003; Seligman et al., 2005; Watkins et al., 2003). In

addition, the results of Hypothesis 2 are also consistent with prior research findings of the

broaden-and-build theory, which contend that positive experiences broaden awareness and build

our psychological resources (Fredrickson, 1998, 2001). Findings related to Hypothesis 2 also

align with previous models that denote recognition of a positive outcome as a prerequisite for

gratefulness (Emmons & McCullough, 2003; Lazarus & Lazarus, 1994; Weiner, 1986).

Hypothesis 3: Findings related to gratefulness predicting positive affect. Positive

affect represents the final dimension of SWB within the hedonic model conceptualized in the

current study (Cooke et al., 2016; Diener et al., 1985; Ryan & Deci, 2001). Bivariate regression

of gratefulness on positive affect indicated a statistically significant positive relationship (beta =

1.11, $p < .001$). That is to say, as scores for gratefulness increase, so too do scores for positive

affect. These findings support Hypothesis 3 that gratefulness will be significantly and positively

associated with positive affect. Such findings also align with previous research concerning

gratefulness and positive affect (Froh et al., 2009; Watkins et al., 2003). The results pertaining to

Hypothesis 3 regarding the relationship found between gratefulness and positive affect also serve

to bolster support for the broaden-and-build theoretical framework (Fredrickson, 1998, 2001).

       Hypothesis 4: Findings related to mindfulness mediating the relationship between

gratefulness and happiness. Mindfulness was also examined as a potential mediating variable

in the relationship between gratefulness and happiness. An initial direct effect between

gratefulness and happiness was established and found to support Hypothesis 2 (beta = .19, $p <$

.001). Mindfulness was introduced into the model as a mediating variable between gratefulness

and happiness. The model allowed for investigation examining whether gratefulness predicted

mindfulness, which then predicted happiness. The bootstrapped confidence interval from the

mediation model did not include zero (CI = [.004, .049]), indicating support for statistically

significant mediation. The results of the analysis support Hypothesis 4 that mindfulness will

significantly mediate the relationship between gratefulness and happiness. This is the first

investigation of mindfulness as a mechanism of action between gratefulness and happiness found

in the literature. These findings align with the broaden-and-build theory framework such that the

positive experience of gratefulness expands attention and awareness (i.e., mindfulness) that then

predicts happiness (Fredrickson, 1998, 2001). These findings also expand upon previous research

that has called for further research on potential mediation between gratefulness and SWB (Liao

& Weng, 2018). In addition, the findings provide information that may inform clinical

interventions aimed at increasing happiness as well as future research concerning the

mechanisms of action amongst positive psychology constructs.

        Hypothesis 5: Findings related to mindfulness mediating the relationship between gratefulness and positive affect. As previously referenced, mindfulness was examined as a potential mediating variable between gratefulness and the three indicators of SWB. Positive affect represents the final indicator of SWB that was tested via the mediation analyses of the current study. An initial direct effect was found between gratefulness and positive affect via Hypothesis 4 (beta = 1.11, $p < .001$), supporting that as scores for gratefulness increase, so too do scores for positive affect. Mindfulness was introduced as a mediating variable in the model between gratefulness and positive affect. That is to say, this model investigated whether gratefulness predicted mindfulness, which then predicted positive affect. The bootstrapped confidence interval from the mediation model did not include zero (CI = [.003, .309]), indicating support that statistically significant mediation was found. The findings support Hypothesis 5 that mindfulness will significantly mediate the relationship between gratefulness and positive affect. This is the first investigation of mindfulness as a mechanism of action between gratefulness and positive affect found in the literature. These findings expand previous research examining other variables as potential mediators between gratefulness and SWB (Liao & Weng, 2018), as well as extend the literature on the nature of the relationship between gratefulness and positive affect, which was examined by Watkins and colleagues (2003). These findings align with the broaden-and-build theory framework (Fredrickson, 1998, 2001) and provide additional information regarding how mindfulness may represent part of a mechanism of action between gratefulness and positive affect. Results of the current study pertaining to Hypothesis 5 may be used to inform and develop strength-based clinical services related to gratefulness, mindfulness, and SWB. The

findings also may serve to help inform future research concerning mechanisms of action between positive psychology constructs.

Implications

  Clinical applications pertaining to the current study. The current study advanced the literature surrounding positive psychology constructs and offered valuable implications for practitioners and policy makers in the realm of college and university mental health. MacKinnon and Dwyer (1993) contended that investigating latent constructs and mechanisms of action between counseling psychology and social science may lead to better understanding factors of effective treatments. Further, Frazier and colleagues (2004) have encouraged counseling psychologists to consider investigating the frequent role that interacting variables (e.g., mediators or moderators) may take in social science research.

  Current approaches to college-aged mental health, particularly within clinical and counseling psychology, reside in remedial approaches that are more indicative of the medical model approach than the values of counseling psychology (Gelso et al., 2014; Gerstein, 2006; Packard, 2009). This, in part, may be due to the increased usage of healthcare delivery systems on college campuses that rely on integrated care models predisposed to observe functioning through a symptomology or deficit-based lens (Mitchell et al., 2019). Beyond the absence of a strength-based framework, current trends in college counseling also appear to prioritize service access and efficiency over treatment, a practice that researchers indicate may have negative impacts for college-aged individuals (CCMH, 2019). Despite ongoing changes to college and university counseling center service delivery models, service utilization and client acuity continue to increase (CCMH, 2019; Gallagher, 2012; Mattanah, 2016a/b; NAMI, 2012; Vespia,

2007). Such paradigm shifts in the landscape of college counseling open the door for counseling

psychology to play a role in helping explore possible solutions.

In line with the strength-based values of counseling psychology, the positive psychology

movement has come to develop numerous interventions aimed at increasing flourishing, well-

being, and quality of life, among other constructs (Gelso et al., 2014). Among interventions

examined, Seligman and colleagues (2005) found that those aimed at increasing gratitude were

some of the most effective and long-lasting. More recently, Wood et al. (2010) called into

question the efficacy of gratitude interventions, mainly citing lack of equitable comparison

groups. When compared to equivalent psychologically active conditions, Davis and colleagues

(2016) found that gratitude interventions performed at least as well as psychologically active

groups but called for additional research to further investigate the efficacy of gratitude

interventions in comparison to other psychological interventions. Despite the scarcity of

additional research pertaining to the efficacy of interventions, clinicians have routinely

incorporated gratitude interventions or components of gratitude into positive psychotherapy. In

fact, Rashid (2015) developed a positive psychotherapy treatment plan that includes an entire

session specifically aimed at increasing gratitude. Likewise, applications of mindfulness and

mindfulness-based interventions continue to expand in counseling practice (Brown & Ryan,

2003; Carmody & Baer, 2008; Kabat-Zinn et al., 1985; Kabat-Zinn et al., 1992). Whether in the

context of individual psychotherapy or group counseling, mindfulness practices continue to be

evaluated for their role in increasing well-being (Carmody & Baer, 2008).

One potential means of addressing the high demand for counseling services among

college-aged individuals is to employ a positive, strength-based preventative approach that seeks

to improve well-being and functioning. However, before introducing positive, strength-based

preventative interventions to a population, scholars and practitioners must first better understand the relationship between positive psychology constructs, how they interact, and with what outcomes they are associated. The current study contributes to better understanding the role of strength-based and positive constructs in clinical work through outlining how mindfulness helps to explain the relationship between gratefulness and SWB. Namely, clinicians and policymakers can use this information to inform direct interventions (e.g., psychotherapy, psychoeducation, group therapy) as well as design and develop community-based initiatives to improve the well-being of college-aged individuals beyond college and university counseling services.

Research applications pertaining to the current study. Overall, the current study offers novel findings by investigating the relationship among positive psychology constructs as they pertain to SWB in a sample of college-aged individuals. The study at hand also expands previous research by examining the unique contribution of mindfulness as a potential mediating variable, which serves to help explain "how" or "why" one variable exerts an impact on an outcome. Findings from the current study also provide a more nuanced understanding of SWB. Operationalizing the hedonic conceptualization of SWB while isolating two dimensions within the model (i.e., HAPP and PA) allowed for more precise understanding of how gratefulness and mindfulness operate than a single amalgamated variable. In alignment with the suggestion of MacKinnon and Dwyer (1993), the findings can serve to inform future research on the relationship among positive psychology constructs as well as provide groundwork for the development of strength-based, preventative interventions aimed at improving the well-being and functioning of college-aged individuals. Taken together, the findings from the current study also offer a response to the call from researchers to further investigate mechanisms of action

between positive psychology constructs (Davis et al., 2016; Liao & Weng, 2018; Wood et al., 2010).

          Applications to other areas of psychology and social science. Whereas the current study was designed to directly advance and inform understandings relevant to counseling psychology research and practice, the results also offer valuable insights that are applicable to other fields of study. For example, better understanding the connection between gratefulness, mindfulness, and SWB may aid industrial/organizational psychologists in implementing positive or strength-based initiatives in the workplace. Scholars in the area of religious and spiritual studies may also find the results of the current study to be useful. Previous work has drawn on the connection between gratefulness, SWB, and religion, and as a result, better understanding relationships among variables has implications to advance research in such areas (Diener et al., 2018; Emmons, 2005). Likewise, sociologists, anthropologists, and scholars of philosophy may find the results of the current study to be valuable and informative. Researchers have long debated the purpose or reason for constructs such as gratefulness, mindfulness, and SWB amongst civilizations and societies; better understanding their connections and interactions maintains implications relevant to such areas of study. Lastly, the connections between mental health, physical health, and education have been well-established in the literature. In particular, the findings of this study may be used to develop larger scale public health and educational interventions in the service of improving SWB of larger populations.

Limitations and Recommendations for Future Research

          The current study presented a number of limitations that warrant further discussion and provide implications for future research of the subject matter. First, the current study made use of a convenience sample to collect data. Whereas the convenience sample employed by the current

study directly aligned with the population of interest described in the research questions, the

sampling method decreases the likelihood that results can be generalized to larger groups. The

study's sample was also limited to mostly European American college-aged individuals due to

the original research questions. As such, findings may have limited application beyond the

individuals who identify with demographic characteristics of the sample population. That is to

say, the findings may have limited generalizability to older individuals, those with differing

levels of education, and those of non-majority ethnic or racial groups. Also, whereas the study

employed components of tailored design method (Dillman et al., 2014) in an effort to improve

data quality and response rates, participants were informed that the study was concerning

gratefulness, SWB, and mindfulness. Consequently, participant bias or demand characteristics

may have impacted responses in the final data set. Future research may consider logistical

barriers and strategies involved in accessing a larger sample that is more representative of the

college-aged individual population. Such sampling may provide more nuanced data, including

the experiences of more diverse individuals.

Another limitation to the current study resides in the lack of methodological rigor

required for causal inferences. The study at hand used sample data from two periods of time,

which is only sufficient to infer correlation. This limitation is primarily due to logistical

restrictions based upon the academic calendar and maintaining access to participants. Future

research could sample at least three waves of panel data to create a sequence between criterion,

mediator, and outcome variables that justifies use of causal conclusions. Additional research may

also employ an experimental design in the interest of justifying causal conclusions. The issue of

directionality may limit findings from the current study as well. Of note, future research may

further examine directionality between variables within a model. For example, happiness may be associated with mindfulness, which then predicts gratefulness.

Third variable concerns and the potential for alternative modeling may also limit some of the findings, interpretations, and generalizability of the current study. The focus of the current study was on examining gratefulness, mindfulness, and SWB. Inclusion of additional variables (e.g., social connection, spirituality) into an increasingly complex model may offer a more comprehensive understanding of the relationship amongst constructs. For example, Emmons (2005) noted commonalities between religion and gratitude that may warrant exploration of the nature of relation between constructs. Likewise, Myers (2000) highlighted that those who identify as religious generally report stronger social bonds. Thus, an increasingly complex model may better explain the relationships among variables. Future research may also consider investigating moderating variables. Moderating variables answer research questions related to "when" or "for whom" a variable predicts an outcome (Frazier et al., 2004). One manner of investigating increasingly complex models is through use of structural equation modeling (SEM), a statistical technique to model the relationship among variables while accounting for latent error.

An additional limitation to the current study pertains to the type of statistical analysis and tools used. Whereas there is no uniform strategy to accurately account for statistical error, SEM may serve as a helpful statistical tool in future research regarding gratefulness, mindfulness, and SWB. SEM would allow for more precise model estimates, better measurement of error, and the ability to test other types of variable roles such as moderation. Future research may also use full information maximum likelihood (FIML) as an option to account for missing data and provide a more robust data set.

Lastly, whereas the current study used multiple indicators to measure SWB, future research may consider expanding instrumentation for multiple measures of mindfulness and gratefulness to offer a more comprehensive picture of the variables of interest. With limitations being expounded upon and suggestions made for future research, the following will provide a final summary and conclusion of the current study.

Conclusion

The current study responded to a need to better understand how constructs within positive psychology relate to one another in an effort to inform policy and practice surrounding the increased acuity and demand for services among college-aged individuals. Better understanding and developing interventions or policy aimed at improving the SWB of college-aged individuals is critical due to the increased rates of severe distress, transitional concerns, and the corresponding increase in service utilization within college and university counseling settings (Gallagher, 2012; Mattanah, 2016a/b; NAMI, 2012; Vespia, 2007). The field of counseling psychology offers a strengths-based approach that is distinct from other fields addressing the severity of need for mental health services among college-aged individuals. Gratefulness is a construct that has been examined for centuries and more recently tied into the work of positive psychology. Research on the subject of gratefulness has provided promising results related to human functioning (Emmons & McCullough, 2003; Emmons & Stern, 2013; McCullough et al., 2004; Seligman et al., 2005), yet some researchers are skeptical of the efficacy of gratefulness in practice (Davis et al., 2016; Wood et al., 2010). Whereas it is a common outcome variable, SWB is a complex construct that maintains numerous conceptualizations and means of measurement (Cooke et al., 2016). The current study specified the hedonic model of SWB as an outcome measure using two separate indicator measures (i.e., HAPP, PA), in an effort to provide a more

nuanced understanding of how gratefulness and mindfulness may impact college-aged individuals (Diener et al., 1985; Ryan & Deci, 2001). Lastly, mindfulness was identified as a potential mediating variable due to centuries of association with positive outcomes and similar characteristics of attention and conscious awareness as are seen in gratefulness (Brown & Ryan, 2003; Carmody & Baer, 2008). The broaden-and-build theory (Fredrickson, 1998, 2001) provided a guiding conceptual framework for the interrelation between positive constructs. Grounding the research inquiry in established empirical results and a theoretical framework aligned with best practices in research methodology and served to decrease the likelihood of spurious findings (Frazier et al., 2004).

The current study employed a quantitative design, collecting survey data from a sample of college-aged individuals from two public universities on two separate occasions. Over 500 participants completed the Time 1 survey and over 200 participants completed both Time 1 and Time 2 surveys. Prior to primary data analysis, the data set was cleaned to only include surveys that were 100% complete. Preliminary analysis led to a final sample of 197 participants who fully completed Time 1 and Time 2 surveys at the respective 2-week interval. Primary data analysis began with simple bivariate regressions between gratefulness and the two SWB indicators (i.e., HAPP, PA), as well as between gratefulness and mindfulness. Statistically significant positive relationships were found between gratefulness and both variables. Accordingly, all hypotheses in the current study were supported. Further analysis used the PROCESS macro (Hayes, 2013) to investigate mindfulness as a mediating variable between gratefulness and happiness and positive affect. Results supported Hypotheses 6 and 7 that mindfulness significantly mediated the relationship between gratefulness and happiness, as well as gratefulness and positive affect. The study had a number of limitations previously addressed

including convenience sampling, lack of design for causal inference, and potential third variable

concerns. Future research may expand on these findings by using more complex models and

analysis such as structural equation modeling to account more accurately for error. Continued

research in this area is important to advancing counseling psychology, positive psychology, and

informing policy and practice that impact the well-being of college-aged individuals.

References

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social

psychological research: Conceptual, strategic, and statistical considerations. *Journal of*

Personality and Social Psychology, 51, 1173-1182.

Bar-Tal, D., Bar-Zohar, Y., Greenberg, M. S., & Hermon, M. (1977). Reciprocity behavior in the

relationship between donor and recipient and between harm-doer and victim. *Sociometry,*

40, 293-298. http://doi.org/10.2307/3033537

Bartlett, M. Y., Condon, P., Cruz, J., Baumann, J., & Desteno, D. (2012) Gratitude: Prompting

behaviours that build relationships. *Cognition & Emotion, 26*, 2-13.

http://doi.org/10.1080/02699931.2011.561297

Bowen, S., Witkiewitz, K., Dillworth, T. M., Chawla, N., Simpson, T. L., Ostafin, B. D.,

Larimer, M. E., Blume, A. W., Parks, G. A., & Marlatt, G. A. (2006). Mindfulness

meditation and substance use in an incarcerated population. *Psychology of Addictive*

Behaviors, 20(3), 343-347. http://doi.org/10.1037/0893-164X.20.3.343

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in

psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822-848.

http://doi.org/10.1037/0022-3514.84.4.822

Carlson, L., Ursuliak, Z., Goodey, E., Angen, M., & Speca, M. (2001). The effects of a

mindfulness meditation-based stress reduction program on mood and symptoms of stress

in cancer outpatients: 6-month follow-up. *Support Care in Cancer, 9***,** 112-123.

https://doi.org/10.1007/s005200000206

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of

mindfulness, medical and psychological symptoms and well-being in a mindfulness-

based stress reduction program. *Journal of Behavioral Medicine*, *31*(1), 23-33.

http://doi.org/10.1007/s10865-007-9130-7

Chang, Y. P., Lin, Y. C., & Chen, L. H. (2012). Pay it forward: Gratitude in social networks.

Journal of Happiness Studies, *13*(5), 761-781. http://doi.org/10.1007/s10902-011-9289-z

Cheng, S. T., Tsui, P. K., & Lam, J. (2015). Improving mental health in health care practitioners:

Randomized controlled trial of a gratitude intervention. *Journal of Counseling and*

Clinical Psychology, *83*(1), 177-186. http://doi.org/10.1002/gps.1314

Chaplin, W. F., John, O. P., & Goldberg, L. R. (1988). Conceptions of states and traits:

Dimensional attributes with ideals as prototypes. *Journal of Personality and Social*

Psychology, *54*(4), 541-557. http://doi.org/10.1037/0022-3514.54.4.541

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation*

analysis for the behavioral sciences (3rd ed.). Erlbaum.

Center for Collegiate Mental Health. (2019, January). *2018 Annual Report*. Retrieved from

https://ccmh.psu.edu/files/2019/09/2018-Annual-Report-9.27.19-FINAL.pdf

Cooke, P. J., Melchert, T. P., & Connor, K. (2016). Measuring well-being: A review of

instruments. *The Counseling Psychologist, 44*(5), 730-757.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* Harper Collins.

Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook, J., Van

Tongeren, D. R., Griffin, B., & Worthington, E. L. (2016). Thankful for the little things:

A meta-analysis of gratitude interventions. *Journal of Counseling Psychology*, *63*(1), 20-

31. https://doi.org/10.1037/cou0000107

Deberard, S. M., Julka, G. I., & Deana, L. (2004). Predictors of academic achievement and retention among college freshman: A longitudinal study. *College Student Journal, 38,* 66-81.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95,* 542-757. http://doi.org/10.1037/0033-2909.95.3.542

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, 31, 103-157. http://dx.doi.org/10 .1007/BF01207052

Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49,* 71-75. http://dx.doi.org/10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Oishi, S. (2018). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 63-73). Oxford University Press.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The Tailored Design Method*. Wiley.

Drążkowski, D., Kaczmarek, L. D., & Kashdan, T. B. (2017). Gratitude pays: A weekly gratitude intervention influences monetary decisions, physiological responses, and emotional experiences during a trust-related social interaction. *Personality and Individual Differences, 110,* 148-153. https://doi.org/10.1016/j.paid.2017.01.043

Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, *6*(3-4), 169-200. http://doi.org/10.1080/02699939208411068

Emmons, R. A. (2004). The psychology of gratitude: An introduction. In R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 3-16). Oxford University Press.

Emmons, R. A. (2005). Striving for the sacred: Personal goals, life meaning, and religion. *Journal of Social Issues*, *61*(4), 731-745. https://doi.org/10.1111/j.1540-4560.2005.00429.x

Emmons, R. A., & Crumpler, C. A. (2000). Gratitude as a human strength: Appraising the evidence. *Journal of Social and Clinical Psychology*, *19*(1), 56-69.

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

Emmons, R. A., & McCullough, M. E. (2004). *The psychology of gratitude.* Oxford University Press.

Emmons, R. A., & Shelton, C. M. (2002). Gratitude and the science of positive psychology. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 459-471). Oxford University Press.

Emmons, R. A., & Stern, R. (2013). Gratitude as a psychotherapeutic intervention. *Journal of Clinical Psychology: In Session*, *69*(8), 846-855. http://doi.org/10.1080/J294v01n02_06

Farrell, A. D. (1994). Structural equation modeling with longitudinal data: Strategies for examining group differences and reciprocal relationships. *Journal of Consulting and Clinical Psychology, 62,* 477-487.

Follette, V., Palm, K. M., & Pearson, A. N. (2006). Mindfulness and trauma: Implications for treatment. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, *24*(1), 45-61. http://doi.org/10.1007/s10942-006-0025-2

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effect in counseling psychology research. *Journal of Counseling Psychology, 51,* 115-134.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2,* 300-319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. *American Psychologist*, *56*(3), 218-226. http://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, B. L. (2004). Gratitude, like other positive emotions, broadens and builds. In R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 145-166). Oxford University Press.

Froh, J. J., Yurkewicz, C., & Kashdan, T. B. (2009). Gratitude and subjective well-being in early adolescence: Examining gender differences. *Journal of Adolescence*, *32*(3), 633-650. https://doi-org.lib-proxy.radford.edu/10.1016/j.adolescence.2008.06.006

Gallagher, R. P. (2012). Thirty years of the National Survey of Counseling Center Directors: A personal account. *Journal of College Student Psychotherapy*, *26*(3), 172-184. http://doi.org/10.1080/87568225.2012.685852.

Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review*, *30*(7), 849-864. https://doi.org/10.1016/j.cpr.2010.03.002

Garland, E. L., & Roberts-Lewis, A. (2013). Differential roles of thought suppression and dispositional mindfulness in posttraumatic stress symptoms and craving. *Addictive Behaviors*, *38*(2), 1555-1562. http://doi.org/10.1016/j.addbeh.2012.02.004

Gelso, C. J., Nutt-Williams, E. N., & Fretz, B. R. (2014). *Counseling psychology*. American Psychological Association.

Gerstein, L. H. (2006). Counseling psychology's commitment to strengths: Rhetoric or reality? *The Counseling Psychologist, 34,* 276-292.

Greenberg, M. S., Bar-Tal, D., Mowrey, J., & Steinberg, R. (1982). *Cross-cultural comparisons in the perception of indebtedness.* Unpublished manuscript, University of Pittsburgh.

Hardin, E. E., Weigold, I. K., Robitschek, C., & Nixon, A. E. (2007). Self-discrepancy and distress: The role of personal growth initiative. *Journal of Counseling Psychology, 54,* 86-92. http://doi.org/10 .1037/0022-0167.54.1.86

Harpham, E. J. (2004). Gratitude in the history of ideas. In R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 19-36). Oxford University Press.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408-420. http://doi.org/10.1080/03637750903310360

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* (White paper). Retrieved from http://www.afhayes.com/public/process2012.pdf

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* Guilford Press.

Heider, F. (1958). *The psychology of interpersonal relations.* Wiley.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study

of mediators and moderators: Examples from the child-clinical and pediatric psychology

literatures. *Journal of Consulting and Clinical Psychology, 65,* 599-610.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and

social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on

Psychological Science*, *10*(2), 227-237. http://doi.org/10.1177/1745691614568352.

Hoyle, R. H., & Kenny, D. A. (1999). Sample size, reliability, and tests of statistical mediation.

In R. Hoyle (Ed.), *Statistical strategies for small sample research* (pp. 195-222). Sage.

Isgett, S. F., & Fredrickson, B. L. (2015). The broaden-and-build theory of positive emotions.

International Encyclopedia of the Social and Behavioral Sciences, 2nd Edition, *2*, 864-

869. https://doi.org/10.1098/rstb.2004.1512

Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression.* Sage.

James, L. R., & Brett, J. M. (1984). Mediators, moderators, and tests for mediation. *Journal of

Applied Psychology, 69*, 307-321.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face

stress, pain, and illness*. Delacourt.

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation

for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8,* 162-190.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L.,

Lenderking, W. R., & Santorelli, S. F. (1992). Effectiveness of a meditation-based stress

reduction program in the treatment of anxiety disorders. *The American Journal of

Psychiatry*, *149*(7), 936-943. http://doi.org/10.1176/ajp.149.7.936

Kaczmarek, P. (2006). Counseling psychology and strength-based counseling: A promise yet to

    fully materialize. *The Counseling Psychologist*, *34*(1), 90-95.

    http://doi.org/10.1177/0011000005282371.

Kenny, D. (2003). *Mediation.* Retrieved from http:// davidakenny.net/cm/mediate.htm

Kessler R.C., Berglund, P., & Delmer, O. (2005) Lifetime prevalence and age-of-onset

    distributions of DSM-IV disorders in the National Comorbidity Survey Replication.

    Archives of General Psychiatry, *62*(6), 593-602.

Kline, R. A. (2016). *Principles and practices of structural equation modeling* (4th ed.). The

    Guilford Press.

Lambert, N. M., & Fincham, F. D. (2011). Expressing gratitude to a partner leads to more

    relationship maintenance behavior. *Emotion*, *11*(1), 52-60.

    http://doi.org/10.1037/a0021557

Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues,*

    56(1), 1-9. https://doi.org/10.1111/0022-4537.00148

Larsen, R. J., Diener, E., & Emmons, R. A. (1985). An evaluation of subjective well-being

    measures. *Social Indicators Research, 17*, 1-17. http://doi.org/10.1007/BF00354108

Lazarus, R. S. (1991). *Emotion and adaptation.* New York, NY: Oxford University Press.

Lazarus, R. S., & Lazarus, B. N. (1994). *Passion and reason: Making sense of our emotions.*

    Oxford University Press.

Lee, L.-N., Tong, E. M. W., & Sim, D. (2015). The dual upward spirals of gratitude and basic

    psychological needs. *Motivation Science, 1*(2), 87-97. http://doi.org/10.1037/mot0000018

Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on wellbeing

    and psychosocial adjustment. *Journal of Counseling Psychology, 51*(4),

482-509. http://doi.org/10.1037/0022-0167.51.4.482

LeRoy, A. S., Murdock, K. W., Jaremka, L. M., Loya, A., & Fagundes, C. P. (2017). Loneliness

predicts self-reported cold symptoms after a viral challenge. *Health Psychology*, *36*(5),

512-520. https://doi.org/10.1037/hea0000467

Levenson, R. W. (1994). Human emotions: A functional view. In P. Ekman & R. Davidson

(Eds.), *The nature of emotion: Fundamental questions* (pp. 123-126). Oxford University

Press.

Liao, K. Y-H., & Weng, C-Y. (2018). Gratefulness and subjective well-being: Social

connectedness and presence of meaning as mediators. *Journal of Counseling Psychology,*

65(3)*,* 383-393.

Linehan, M. M., Cochran, B. N., & Kehrer, C. A. (2001). Dialectical behavior therapy for

borderline personality disorder. In D. H. Barlow (Ed.), *Clinical handbook of*

psychological disorders: A step-by-step treatment manual (pp. 470-522). The Guilford

Press.

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-

sectional research designs. *Journal of Applied Psychology*, *86*(1), 114-121.

http://doi.org/10.1037/0021-9010.86.1.114

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary

reliability and construct validation. *Social Indicators Research, 46*(2)*,* 137-155.

http://doi.org/10.1023/A:1006824100041

MacKinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies.

Evaluation Review, 17, 144-158.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A

comparison of methods to test mediation and other intervening variable effects.

Psychological Methods, 7, 173-181.

Magyar-Moe, J. L., Owens, R. L., & Scheel, M. J. (2015). Applications of positive psychology in

counseling psychology: Current status and future directions. *The Counseling Psychologist,*

43, 494-507. http://doi.org/10.1177/0011000015581001

Marlatt, G. A. (2006). Mindfulness meditation and substance use in an incarcerated population.

Psychology of Addictive Behaviors, *20*(3), 343-347. http://doi.org/10.1037/0893-

164X.20.3.343

Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational

type inferences in organizational behavior. *Journal of Organizational Behavior*, *27*(8),

1031-1056. http://doi.org/10.1002/job.406

Mattanah, J. (2016a). *College student psychological adjustment: Exploring relational dynamics*

that predict success. Momentum Press.

Mattanah, J. (2016b). *College student psychological adjustment: Theory, methods, and statistical*

trends. Momentum Press.

McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A

conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*(1),

112-127.

McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a

moral affect? *Psychological Bulletin*, *127*(2), 249-266.

McCullough, M. E., Tsang, J., & Emmons, R. A. (2004). Gratitude in intermediate affective

terrain: Links of grateful moods to individual differences and daily emotional experience.

Journal of Personality and Social Psychology, 86, 295-309.

McGovern, L. P., Ditzian, J. L., & Taylor, S. P. (1975). The effect of positive reinforcement on

helping with cost. *Psychonomic Society Bulletin, 5*, 421-423.

Mitchell, S. L., Oakley, D. R., & Dunkle, J. H. (2019). White paper: A multidimensional

understanding of effective university and college counseling center organizational

structures. *Journal of College Student Psychotherapy, 33*(2), 89-106.

Modifi, T., El-Alayli, A., & Brown, A. A. (2014). Trait gratitude and grateful coping as they

relate to college student persistence, success, and integration in school. *Journal of College

Student Retention: Research, Theory & Practice, 16*, 325-349.

http://doi.org/10.2190/CS.16.3.b

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation

analysis: A path-analytic framework. *Psychological Methods*, *22*(1), 6-27.

http://doi.org/10.1037/met0000086

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist,

55*(1), 56-67. https://doi.org/10.1037/0003-066X.55.1.56

National Alliance on Mental Illness (2012). *College student speaks: A survey report on mental

illness.* Retrieved from https://www.nami.org/About-NAMI/Publications-Reports/Survey-

Reports/College-Students-Speak_A-Srvey-Report-on-Mental-H

Nezlek, J. B., Newman, D. B., & Thrash, T. M. (2017). A daily diary study of relationships

between feelings of gratitude and well-being. *The Journal of Positive Psychology, 12,* 323-

332. http://doi.org/10.1080/ 17439760.2016.1198923

Nguyen, M. (2012). Degreeless in debt: What happens to borrowers who drop out. *Education Sector*. Retrieved from https://www.newamerica.org/documents/668/degreeless-in-debt

Okamoto, S., & Robinson, W. P. (1997). Determinants of gratitude expressions in England. *Journal of Language and Social Psychology, 16*, 411-433. https://doi-org/10.1177/0261927X970164003

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions.* Cambridge University Press.

Packard, T. (2009). The 2008 Leona Tyler Award address. Core values that distinguish counseling psychology: Personal and professional perspectives. *The Counseling Psychologist*, *37*(4), 610-624. http://doi.org/10.1177/0011000009333986

Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: Mental health problems and treatment considerations. *Academic Psychiatry*, *39*(5), 503-511. http://doi.org/10.1007/s40596-014-0205-9

Peterson, C., & Seligman, M. E. P. (2004). Gratitude. In *Character strengths and virtues: A handbook and classification system* (pp. 553-568). American Psychological Association.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. http://doi.org/10.1037/0021-9010.88.5.879

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731. http://doi.org/10.3758/BF03206553

Rashid, T. (2015). Positive psychotherapy: A strength-based approach. *Journal of Positive Psychology*, *10*(1), 25-40. http://doi.org/10.1080/17439760.2014.920411

Rind, B., & Bordia, P. (1995). Effect of server's "thank you" and personalization on restaurant tipping. *Journal of Applied Social Psychology*, *25*(9), 745-751. https://doi-org/10.1111/j.1559-1816.1995.tb01772.x

Roscoe, L. J. (2009). Wellness: A review of theory and measurement for counselors. *Journal of Counseling and Development, 87*(2), 216-226.

Russell, E., & Fosha, D. (2008). Transformational affects and core state in AEDP: The emergence and consolidation of joy, hope, gratitude and confidence in the (solid goodness of the) self. *Journal of Psychotherapy Integration, 18*(2)*,* 167-190. https://doi.org/10.1037/1053-0479.18.2.167

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Samuelson, M., Carmody, J., Kabat-Zinn, J., & Bratt, M. A. (2007). Mindfulness-based stress reduction in Massachusetts correctional facilities. *The Prison Journal*, *87*(2), 254-268. http://doi.org/10.1177/0032885507303753

Schwartz, B. (1967). The social psychology of the gift. *American Journal of Sociology*, *73*(1), 1-11. https://www-jstor-org.lib-proxy.radford.edu/stable/2776124

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

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410-421.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods, 7,* 422-445.

Simmel, G. (1950). *The sociology of Georg Simmel*. Free Press.

Smith, A. (1982). *The theory of moral sentiments*. (A. L. Macfie & D. D. Raphael, Eds.). Liberty

    Classics. (Original work published in 1790)

Smith, E. J. (2006). The strength-based counseling model. *The Counseling Psychologist*, *34*(1),

    13-79. http://doi.org/10.1177/0011000005277018

Speca, M., Carlson, L., Goodey, E., & Angen, M. (2000). A randomized, wait-list controlled

    clinical trial: The effect of a mindfulness meditation-based stress reduction program on

    mood and symptoms of stress in cancer outpatients. *Psychosomatic Medicine, 62*(5)*,* 613-

    622. http://doi.org/10.1097/00006842-200009000-00004

Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A.

    (2000). Prevention of relapse/recurrence in major depression by mindfulness-based

    cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*(4), 615-

    623. https://doi.org/10.1037/0022-006X.68.4.615

Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology, 46*, 35-

    57. https://www-jstor-org.lib-proxy.radford.edu/stable/2822435

Tsang, J. (2006). Gratitude and prosocial behavior: An experimental test of gratitude. *Cognition*

    and Emotion, 20(1), 138-148.

Vespia, K. M. (2007). A national survey of small college counseling centers: Successes, issues,

    and challenges. *Journal of College Student Psychotherapy*, *22*(1), 17-40.

    http://doi.org/10.1300/J035v22n01

Watkins, P., Woodward, K., Stone, T., & Kolts, R. (2003). Gratitude and happiness:

    Development of a measure of gratitude and relationships with subjective well-

    being. *Social Behavior and Personality: An International Journal*, *31*, 431-452.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070. http://dx.doi.org/10.1037/0022-3514.54.6.1063

Weiner, B. (1986). *An attributional theory of motivation and emotion.* Springer-Verlag.

Westin, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist, 34*(5), 719-751.

Wilber, K. (2000). *Integral psychology: Consciousness, spirit, psychology, therapy*. Shambhala.

Williams, K. A., Kolar, M. M., Reger, B. E., & Pearson, J. C. (2001). Evaluation of a wellness-based mindfulness stress reduction intervention: A controlled trial. *American Journal of Health Promotion*, *15*(6), 422-432. https://doi.org/10.4278/0890-1171-15.6.422

Wong, Y. J., McKean Blackwell, N., Goodrich Mitts, N., Gabana, N. T., & Li, Y. (2017). Giving thanks together: A preliminary evaluation of the Gratitude Group Program. *Practice Innovations*, *2*(4), 243-257. https://doi.org/10.1037/pri0000058

Wood, A. M., Froh, J. J., & Geraghty, A. W. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 30,* 890-905. http://doi.org/10.1016/j.cpr.2010.03.005

Wood, A. M., Joseph, S., Lloyd, J., & Atkins, S. (2009). Gratitude influences sleep through the mechanism of pre-sleep cognitions. *Journal of Psychosomatic Research, 66*, 43-48.

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

Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in

    the development of social support, stress, and depression: Two longitudinal studies.

    Journal of Research in Personality, *42*(4), 854-871.

    http://doi.org/10.1016/j.jrp.2007.11.003

Zaleski, Z. (1988). Attributions and emotions related to future goal attainment. *Journal of*

    Educational Psychology, *80*, 563-568. http://doi.org/10.1037/0022-0663.80.4.563

Appendix A

Instrumentation

The Gratitude Adjective Checklist (GAC)

The GAC is a three-item measure comprised of the sum of affect adjectives: grateful, thankful,

    and appreciative. It can be framed over short or longer time, by varying the time specified

    in the instructions, e.g. right now, think about "yesterday," or think about "the past few

    weeks."

Instructions: Think about how you [felt yesterday/have felt during the past few weeks]. Using a

    scale from 1 (not at all), 2 (a little), 3 (moderately), 4 (quite a bit), to 5 (extremely),

    please choose a number to indicate your level of feeling the following:

_____ 1. Grateful

_____ 2. Thankful

_____ 3. Appreciative

Scoring: Sum responses to the 3 items.

McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A

    conceptual and empirical topography. *Journal of Personality and Social Psychology,*

    82(1), 112-127. doi:10.1037//0022-3514.82.1.112

The Mindful Attention Awareness Scale (MAAS)

Day-to-Day Experiences

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what *really reflects* your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in

psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822-848.

http://doi.org/10.1037/0022-3514.84.4.822

The Four Item Subjective Happiness Scale (HAPP)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

   1   2   3   4   5   6   7
   not a very   a very
   happy   happy
   person   person

2. Compared with most of my peers, I consider myself:

   1   2   3   4   5| 6   7
   less   more
   happy   happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

   1   2   3   4   5   6   7
   not at   a great
   all   deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

   1   2   3   4   5   6   7
   not at   a great
   all   deal

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary

reliability and construct validation. *Social Indicators Research, 46*(2), 137-155.

http://doi.org/10.1023/A:1006824100041

The Positive and Negative Affect Schedule (PANAS)

Worksheet 3.1   The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988)

PANAS Questionnaire

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. **Indicate to what extent you feel this way right now, that is, at the present moment *OR* indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure)**

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

_____	1. Interested	_____	11. Irritable
_____	2. Distressed	_____	12. Alert
_____	3. Excited	_____	13. Ashamed
_____	4. Upset	_____	14. Inspired
_____	5. Strong	_____	15. Nervous
_____	6. Guilty	_____	16. Determined
_____	7. Scared	_____	17. Attentive
_____	8. Hostile	_____	18. Jittery
_____	9. Enthusiastic	_____	19. Active
_____	10. Proud	_____	20. Afraid

Scoring Instructions:

Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect. Mean Scores: Momentary = 29.7 (*SD* = 7.9); Weekly = 33.3 (*SD* = 7.2)

Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect. Mean Score: Momentary = 14.8 (*SD* = 5.4); Weekly = 17.4 (*SD* = 6.2)

Appendix B

IRB Approval

RU RADFORD UNIVERSITY

Radford University's Institutional Review Board
P.O. Box 6926 Radford, VA 24142 I Phone: (540) 831-5290 I Fax: (540) 831-6636 I irb-iacuc@radford.edu

MEMO DATE:	14-Dec-2018
TO:	Riding-Malon, Ruth
FROM:	Brooke Blevins bblevins6@radford.edu
	Radford University IRB
RE:	Approval for FY19-044: Gratefulness and Subjective Well-Being: Mindfulness as a Mediator.
STUDY TITLE:	Gratefulness and Subjective Well-Being: Mindfulness as a Mediator.
IRB REFERENCE #:	FY19-044
SUBMISSION TYPE:	Initial Application
ACTION:	Approved
EFFECTIVE DATE:	14-Dec-2018
EXPIRATION DATE:	13-Dec-2019
REVIEW TYPE:	Expedited Review

This is to confirm that the above-referenced study submitted for Expedited Review to Radford University's Institutional Review Board (IRB) has been granted approval.

Your IRB-sanctioned approval ends on 13-Dec-2019, by which date a closure report is due. If you wish to continue your research beyond this date, you must request a continuance no later than 10 days prior to the expiration of this approval. Because your study requires documentation of informed consent, you must use the stamped copy of your approved consent document.

If you should need to make changes in your protocol, please submit a request for modification before implementing the changes. Modifications are made via the InfoEd system. Please contact our office for assistance, if needed.

As the principal investigator for this project, you are ultimately responsible for ensuring that your study is conducted in an ethical manner. You are also responsible for filing all reports related to this project.

If you have any questions, please contact Brooke Blevins at (540) 831-5290 or bblevins6@radford.edu. Please include your study title and reference number in all correspondence with this office.

Good luck with this project!

Radford University's Institutional Review Board
P.O. Box 6926 Radford, VA 24142 | Phone: (540) 831-5290 | Fax: (540) 831-6636 | irb-iacuc@radford.edu

MEMO DATE:	18-Mar-2019
TO:	Riding-Malon, Ruth
FROM:	Brooke Blevins bblevins6@radford.edu
	Radford University IRB
RE:	Approval of Modifications for FY19-044: Gratefulness and Subjective Well-Being: Mindfulness as a Mediator.
STUDY TITLE:	Gratefulness and Subjective Well-Being: Mindfulness as a Mediator.
IRB REFERENCE #:	FY19-044
SUBMISSION TYPE:	Amendment
ACTION:	Approved
EFFECTIVE DATE:	18-Mar-2019
EXPIRATION DATE:	13-Dec-2019
REVIEW TYPE:	Expedited Review

This is to confirm that modifications to the above-referenced study have been granted by Radford University's Institutional Review Board (IRB).

The study has been granted approval for its original term ending on 13-Dec-2019, by which date a closure report is due. If you wish to continue your research beyond this date, you must request a continuance no later than 10 days prior to the expiration of this approval. Because your study requires documentation of informed consent, you must use the stamped copy of your approved consent document.

If you should need to make changes in your protocol, please submit a request for modification before implementing the changes. Modifications are made via the InfoEd system. Please contact our office for assistance, if needed.

As the principal investigator for this project, you are ultimately responsible for ensuring that your study is conducted in an ethical manner. You are also responsible for filing all reports related to this project.

If you have any questions, please contact Brooke Blevins at (540) 831-5290 or bblevins6@radford.edu. Please include your study title and reference number in all correspondence with this office.

Good luck with this project!

Appendix C

Informed Consent

RADFORD UNIVERSITY

You are invited to participate in a research survey entitled "Gratefulness and Subjective Well-being: Mindfulness as a Mediator." The study is being conducted by Dr. Riding-Malon, Department of Counseling Psychology, of Radford University; CHBS 5101, 540-831-6892, rridingmalon@radford.edu. The purpose of this study is to examine gratefulness, mindfulness, and subjective well-being in college-aged individuals. Your participation will contribute to a better understanding of these topics. We estimate that it will take about five minutes of your time to complete the questionnaire. You are free to contact the investigator at the above address and phone number to discuss the survey.

Risks to participants are considered minimal. There will be no costs for participating, nor will you directly benefit from participating. Identification numbers associated with emails addresses will be kept during the data collection phase for tracking purposes only. A limited number of research team members will have access to the data during data collection. Identifying information will be stripped from the final dataset.

Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty. If you wish to withdraw from the study or have any questions, contact the investigator listed above.

If you have any questions or wish to update your email address, please call Dr. Riding-Malon at 540-831-6892 or send an email to rridingmalon@radford.edu. You may also request a hard copy of the survey from the contact information above.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Laura J. Jacobsen, Interim Dean, College of Graduate Studies and Research, Radford University, ljacobsen@radford.edu, 1-540-831-5470.