EXAMINING SEX DIFFERENCES IN GRATITUDE, PSYCHOLOGICAL WELL-BEING, AND NEGATIVE AFFECTIVITY

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ABSTRACT

This study investigated the relationships among gratitude, variables associated with well-being, and negative affectivity. Specifically, this study addressed sex differences among gratitude, psychological well-being, and negative affectivity. It also addressed whether the prediction of gratitude by psychological well-being and negative affectivity was different for women and men. Two hundred and sixty-four participants were included in the data analysis. Women had higher scores on negative affectivity and higher scores on gratitude than men. Higher scores on gratitude were positively correlated with higher scores on life satisfaction, well-being, authentic-durable happiness, positive affect and attending to emotions. Higher scores on gratitude were negatively correlated with higher scores on subjective fluctuating happiness. Results indicated different predictor variables for gratitude for men and women. Future research should include the use of longitudinal data as well as studies on techniques that increase gratitude and decrease negative affectivity for men and women.

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CHAPTER I

Introduction

Gratitude has been described by Emmons and Shelton (2002) as a feeling of wonder and appreciation for one's life. It is rooted in perceiving that another person has taken an action to cause a positive outcome for oneself. Maslow stated that life is "vastly improved if we could count our blessings as self-actualizing people do" (Maslow, 1970, p. 137). Gratitude has been described as an attitude, emotion, virtue, a personality trait or even a coping response (Emmons & McCullough, 2003).

Gratitude and its Correlates

Numerous studies have been conducted examining the effects of gratitude in people's lives. Studies have shown that trait-based gratitude not only enhances well-being, but it also has the ability to reduce psychopathology (Wood, Froh, & Geraghty, 2010). In gratitude therapy, one has to recognize that he or she has received something positive from someone who behaved in a way that was valuable, intentional, and costly (Bryant, 1989; Langston, 1994). Wood et al. (2010) also mentioned that most interventions based on gratitude are one of three types: "1) daily listing of things of which to be grateful 2) grateful contemplation 3) behavioral expressions of gratitude" (p. 8). These interventions have been used to show effects of gratitude on a variety of different aspects of a person's life.

Positive and negative affect. Increased gratitude has been shown by many intervention studies to produce an increase in positive affectivity and a decrease in

negative affectivity. Emmons and McCullough (2003) compared gratitude expressed on a weekly basis by young adults in three different conditions: gratitude, hassles, and control. In the gratitude condition, participants recorded gratitude-inducing experiences; in the hassles condition, participants recorded hassles or problems they had to face. In the control group, participants recorded neutral life events that happened in the past week. The initial study did not find any differences in positive or negative affectivity in the different conditions. However, in a second and third study performed on different samples and on a daily basis, it was found that participants reported increased levels of gratitude and positive affect in the gratitude condition, compared to those in the hassles or control conditions. The second and third studies also showed lower negative affectivity in the gratitude condition as compared to the control condition. Overall, it was found that there were increased rates of gratitude reported when daily recordings of gratitude-inducing experiences were taken rather than weekly recordings (Emmons & McCullough, 2003).

Similar results were found in a study conducted by Froh, Sefick, and Emmons (2008). Middle school students were instructed to list five things they were grateful for in the gratitude condition, or five hassles that occurred in the previous day in the hassles condition; a third group of the control students did not receive instructions to write anything. It was found that the students expressing gratitude and those in the control group had significantly lower rates of negative affect than students expressing hassles. Unlike Emmons and McCullough (2003), there were no differences found in positive

affect. In contrast, research by McCullough, Emmons, and Tsang (2002) found that gratitude is significantly related to positive affect. A study by McCullough, Tsang, and Emmons (2004) had participants complete mood diaries for a period of 14 days in which they recorded how they felt each day. They found that people with high levels of gratitude had significantly higher rates of positive affectivity than those with lower levels of gratitude. Similarly, Sheldon and Lyubomirsky (2006) instructed undergraduates to either cultivate a sense of gratitude or think about how they could be their best possible selves. Results showed that the participants in both groups had higher levels of positive affect, higher levels of gratitude, and lower negative affect as compared to participants who did not complete exercises.

Proctor, Linley, and Maltby (2010) used the Positive and Negative Affectivity Scale (PANAS) to measure adolescents' positive and negative affectivity. They found that adolescents who reported themselves as being very happy had lower levels of negative affect and higher levels of both positive affect and gratitude than adolescents who reported themselves as being very unhappy. Watkins, Woodward, Stone, and Kolts (2003) also used the PANAS in research with undergraduate students. Participants were instructed to think about someone they were grateful for, asked to write about someone they were grateful for, or asked to write a letter to a living person to whom they were grateful (and that the person would be notified of the letter). All of the gratitude conditions showed that higher levels of gratitude correlated with high levels of positive affect and lower levels of negative affect as compared to pre-intervention. Interestingly,

it was found that less grateful people had higher increases of positive affect than the more grateful people. This demonstrates a possible ceiling effect for people with already high rates of positive affect, as they are not able to have increases as high as those starting out with low positive affect (Watkins et al., 2003).

Life satisfaction. There is a strong relationship between gratitude and life satisfaction. Most studies conducted to examine this relationship find that there is a positive correlation between these two components (Froh, Yurkewicz, & Kashdan, 2009; McCullough et al., 2002; 2004; Wood, Joseph, & Maltby, 2008). A study by Emmons and McCullough (2003) found that participants asked to record gratitude-inducing experiences had higher rates of gratitude and life satisfaction as compared to participants who were asked to record hassles and problems or nothing at all. Froh, Bono, and Emmons (2010) measured middle school students' gratitude and life satisfaction over a period of 6 months; they instructed the students to rate the amount of gratitude they felt during the past few weeks. The middle school students with high levels of gratitude at baseline continued to exhibit high levels of gratitude and high rate of life satisfaction at a 3 month follow-up. This fits a model of gratitude that hypothesizes that social integration and life satisfaction are related to each other. Wood, Joseph, and Linley (2007) used the Satisfaction with Life Scale (SWLS) and found that participants with higher levels of gratitude also had higher levels of life satisfaction.

Some studies examining the relationship between gratitude and life satisfaction have not found as promising results. Along with research on gratitude, Froh et al. (2008)

showed that middle school students expressing gratitude did not have a higher rate of life satisfaction than those recording life events in the control group and hassles in the hassles group. However, the middle school students in the hassles group had lower rates of life satisfaction than those in the control group. This supports the hypothesis that dwelling on problems by ruminating may, in fact, decrease satisfaction with one's life. Similarly, a study by Flinchbaugh, Moore, Chang, and May (2012) found that classroom interventions, including gratitude interventions, did not significantly increase life satisfaction in the students.

Well-being and happiness. There is a significant amount of research that finds gratitude produces higher levels of well-being in people (Kashdan, Uswatte, & Julian, 2006; Wood, Maltby, Gillett, Linley, & Joseph, 2008). Research also suggests that gratitude positively correlates with increased levels of happiness and vitality in addition to well-being (McCullough et al., 2002; Proctor et al., 2010; Wood et al., 2007).

Although most studies show gratitude steadily increasing along with happiness and well-being, McCullough et al. (2004) found different results. This study instructed participants to keep a mood diary for 21 days, and although they found that well-being increased throughout the study, gratitude was decreasing slightly every day. A reduction in gratitude was somewhat surprising. It may have occurred because the initial exciting effects of participating in the study wore off, or it may be explained by hedonic adaptation. This is a tendency to habituate to a continuously present positive or negative stimulus to a point where the effects of the stimulus become normal and are no longer

attended to (Larsen & Prizmic, 2008). Other research suggests that hedonic adaptation neutralizes the effects of happiness fluctuating on a day-to-day basis (Brickman, Coates, & Janoff-Bulman, 1978). This fluctuating happiness is associated with self-centered thinking and emotions (Dambrun & Ricard, 2011). However, Dambrun and Ricard (2011) proposed that gratitude is not a self-centered emotion. Instead, gratitude is a self-less component of how a person views the world that provides that person with a method of achieving stability in happiness and inner-peace (Dambrun et al., 2012). Research by Dambrun et al. (2012) created a new measure known as the Subjective Authentic-Durable Happiness Scale (SA-DHS) to measure authentic and durable happiness within a person's life. However, there has been very little research on the relationship between gratitude and authentic-durable happiness.

Psychosocial functioning. Studies have shown that gratitude can help improve a person's overall physical and social aspects of life. Algoe, Gable, & Maisel (2010) looked at the daily behaviors involving gratitude that people in a coupled relationship exhibit towards one another. They found that feelings of gratitude felt on a previous day improve relationship quality with one's partner on the next day. The researchers found that gratitude also caused an increase in relationship quality in romantic partners. Another study focusing on relationships and gratitude was performed by Lambert and Fincham (2011). It was found that people expressing high amounts of gratitude also expressed higher amounts of relationship comfort in confiding in their friends or partners, when compared to those expressing lower amounts of gratitude. Gratitude correlates

with good physical functioning as well. Froh et al. (2009) measured gratitude in middle school students and found that gratitude had a significant correlation with physical ailments. Students with higher levels of gratitude had lower levels of physically problematic symptoms.

Gratitude can also help a person's cognitive processes and self-esteem. Flinchbaugh et al. (2012) showed that a combination treatment of stress management techniques in a classroom and gratitude journals aided in increasing undergraduate students' levels of meaningfulness and enjoyment in their class. Research done by Lambert, Graham, Fincham, and Stillman (2009) showed that people with a higher rate of gratitude also have a higher sense of coherence. The sense of coherence is the belief that life is manageable, meaningful, and comprehensible (Antonovsky, 1993). A study by Sheldon and Lyubomirsky (2006) looked at self-concordant motivation, or motivation to reach goals related to one's true values and interests, in undergraduates instructed to cultivate gratitude or think of their best possible selves. Results showed that participants in both conditions had higher levels of self-concordant motivation than participants not instructed to perform either task (Sheldon & Lyubomirsky, 2006).

Sex differences across the correlates of gratitude. Research examining sex differences in the correlates of gratitude has been somewhat mixed. Froh et al. (2009) measured gratitude via the Gratitude Adjective Checklist and found that levels of gratitude do not differ significantly between sexes. The researchers proposed that this lack of difference may have been due to focusing on middle school students who are of a

young age. In contrast, most research on adults has indicated that men have lower levels of gratitude than women as a result of being socialized to view gratitude expression as being effeminate (Levant & Kopecky, 1995). However, there are some studies that have not found any sex differences in gratitude levels among adults (Lambert & Fincham, 201l; Sood & Gupta, 2012).

Other research has shown clear differences in gratitude levels between the sexes that are caused by attention to interpersonal cues. Algoe et al. (2010) examined whether thoughtful gestures perceived by one's partner in a relationship affect a person's expression of gratitude. They found that women who perceived their partner's gestures as thoughtful were more likely to express gratitude than men. Algoe et al. (2010) proposed that this may be because women have a higher sensitivity to interpersonal cues compared to men. This may be because men have mixed emotions, not just positive, in reacting to receiving a benefit from another person (Algoe et al., 2010).

Some research proposes that sex differences in gratitude may be due to differences in the amount and intensity of emotions expressed by women and men. Fujita, Diener, and Sandvik (1991) examined the differences in positive and negative affectivity in male and female college students. Using a memory performance intensity measure, participants were asked to recall positive and negative emotional experiences from their past. The researchers found that women remembered more emotions, reported more positive affect, reported more intense positive events, and experienced negative events significantly more than men. Fujita et al. (1991) proposed that the high rates of

negative affectivity that women experience are balanced by the high rates of positive affectivity. They postulated that this is why women have higher rates of depressive symptoms, yet high rates of gratitude as well. Research by Grossman and Wood (1993) also found that women experience increased or more intense emotional feelings than men. They proposed this is the result of sex-differentiated expectations that are formed as a result of the social roles that men and women take on. The researchers concluded that women express more emotional feelings than men because they must do so as required by them in their jobs, homes, and daily lives.

Another set of studies proposed that sex differences in gratitude levels are due to a difference in malleability of emotions, or how likely emotions are to fluctuate. A study showing sex differences in the fluctuations of emotions was performed by Kashdan, Mishra, Breen, and Froh (2009) in which trait-based gratitude and appraisals of life narratives were measured in 200 young adults. In the first study, college students were instructed to express gratitude to someone in their life; in the second study, they instructed students to provide a meaningful experience of gratitude in the past week. Female students had higher rates of gratitude compared to male students. Female students were more likely to rate gratitude as being more beneficial, as increasing feelings of belonging, and as increasing autonomy, than male students. On the other hand, more male students rated gratitude expression to be a burden or an obligation. Kashdan et al. (2009) proposed that this may be due to men not wanting to experience gratitude because the emotion causes them to be more open and vulnerable. They also

proposed that women have higher emotional fluctuations and mobility, or the ease of moving from one emotional state to another, which causes them to be more affected by interpersonal events. Something that research studies have not focused on is whether the burden and obligatory feelings felt by the male college students may be a result of the men simply not attending to their emotions as much as women.

Negative Affectivity

Research suggests that anxiety and depression are two of the most highly correlated comorbid internalizing disorders that affect a person's well-being. Watson and Clark (1984) believe that these two disorders share basic symptoms to such an extent that they should be combined into one term: negative affectivity. This construct combines anxiety and depressive symptoms into a group of emotionally negative symptoms: "distress, sadness, negative view of self, low self-esteem, unhappiness, guilt, worry, tension, and nervousness" (p. 465). Studies have found this mixture of anxiety and depressive symptoms to be the most commonly occurring combination of mental symptoms found in the population (Tyrer & Baldwin, 2006).

It is important to conduct research on treatment methods for depression and anxiety. In American psychiatric hospitals, depression has the second highest frequency of admission compared to all other psychological disorders (Olfson & Mechanic, 1996). Despite the numerous treatments, depression is increasing. Each generation exhibits higher rates of depression than the previous one (Burke, Burke, Rae, & Regier, 1991; Klerman, 1990). Treatments for depression involving prescription medications and

cognitive-behavioral therapy can be very expensive and time consuming. Similarly, the treatment of anxiety disorders has been found to be the most expensive compared to all other mental disorders in the society (Rovner, 1993). It is important for researchers to study other methods of treating these internalizing disorders that may be less costly for individuals needing treatment.

Symptomatology.

Anxiety. In the twentieth century, Freud proposed that anxiety disorders arise due to a person using neurotic behavior as a defense mechanism against anxiety. He believed anxiety is brought on by fears that one's ego would break down when attempting to satisfy demands of the id, all the while trying to please the superego (Alloy, Riskino, & Manos, 2005). The revised fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*) lists the criteria for the different types of anxiety disorders; some of these disorders include generalized anxiety disorder (GAD), panic disorder, and post-traumatic stress disorder (PTSD) (American Psychiatric Association [APA], 2000).

Although each anxiety disorder has a different set of criteria for diagnosis, there are general symptoms of anxiety that are present in all of the anxiety disorders. Excessive anxiety and worry usually occur for a majority of the time, with substantial impairment in functioning; these feelings of worry may be due to a stimulus or in the absence of one. The diagnostic criteria for GAD states that “the person must find it difficult to control the worry ... the anxiety and worry must be associated with some of

the following symptoms: restlessness or feeling keyed up or on edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension, and sleep disturbance" (APA, 2000, p. 476). Although the presence of one or two anxiety symptoms and a lack of impairment in functioning do not merit a formal diagnosis of an anxiety disorder, the symptoms of anxiety still present risks to one's well-being if they are not relieved in a healthy way.

Depression. Depressive symptoms have been recognized since as early as the fourth century B.C.E. (Alloy et al., 2005). The *DSM-IV-TR* (APA, 2000) classifies depressive symptoms as essential and associative features of the mood disorders. The essential symptoms of depression are the same in the diagnostic criteria for all of the types of depressive disorders.

According to the *DSM-IV-TR* (APA, 2000), one of the most recognized mood disorders is major depressive disorder (MDD). The most important symptoms of MDD are having a depressed mood, or a loss of pleasure in previously pleasurable activities, having significant weight loss when the person may not be intending to lose weight or weight gain due to an increase in appetite, insomnia or hypersomnia, psychomotor agitation that can be observed by others, fatigue or loss of energy, feelings of worthlessness or excessive guilt, and a diminished ability to think, concentrate or make decisions. Recurrent thoughts of death, suicidal thoughts, or a previous suicide attempt also may cause clinically significant impairment in functioning (APA, 2000). Although a person experiencing one or two of the symptoms and no significant impairment in

functioning would not meet the criteria for a depressive episode or disorder, the beginning of symptoms and/or a low number of symptoms still present risks for a person's well-being. These premorbid symptoms, which are symptoms found in the beginning stages before a diagnosis is made, may develop into a full blown mood disorder if they are not contained or dealt with in a healthy way. Premorbid symptoms are found significantly more in people who later develop depression than in people who do not develop depression (Iacoviello, Alloy, Abramson, & Choi, 2010).

Prevalence and persistence.

Anxiety disorders. The lifetime prevalence of GAD in Europe is 4.3-5.9%, and the 12-month prevalence is 1.2-1.9% (Tyrer & Baldwin, 2006). Fichter, Quadflieg, Fischer, and Kohlboeck (2010) estimated the prevalence of all anxiety syndromes from a sample in rural Bavaria to be 12.8% in adults and adolescents above the age of 15 years in a longitudinal study. Over a span of 25 years, there was an overall decrease in the syndromes. A study done by Rhebergen et al. (2011) in the Netherlands, followed participants over a 7 year period. At a 12-month follow-up, 60.7% of the participants with either anxiety or depression no longer met the diagnostic criteria for the disorder. Researchers also found that, as compared to people with depression (64.8%), people diagnosed with anxiety have a lower rate of complete remission (46.5%). This suggests that anxiety symptoms are somewhat more stable than depressive symptoms (Rhebergen et al., 2011).

Studies done in the U.S. find higher rates than in Europe. It is estimated that about 30% to 40% of the population in the U.S. has developed or will develop an anxiety disorder at some point in life (Shepherd, Cooper, Brown, & Kalton, 1996). In a study focusing on GAD prevalence in the U.S., researchers found a lifetime prevalence of 5.1% and a 12 month prevalence of 3.1%; the study found that the prevalence in adolescents increases with age for GAD (Carter, Wittchen, Pfister, & Kessler, 2001). In general, most studies on anxiety disorders have found that worry increases with age (Wittchen & Hoyer, 2001).

Depressive disorders. The *DSM-IV-TR* states the estimated lifetime risk prevalence of MDD is from 10% to 25% for women and 5% to 12% for men (APA, 2000). A review by Üstün (2001) found similar rates in numerous studies. Kessler et al. (2003) found the lifetime risk prevalence for MDD to be 16.2%. The study found that depressive symptoms increase in late adolescence, as the highest lifetime risk for developing MDD is between ages 18 and 59 years. In contrast to the findings of Rhebergen et al. (2011), Fichter et al. (2010) followed participants over the span of 25 years and found that the depression syndrome without any comorbidity has greater stability over time than anxiety disorders. Murray and Lopez (1996) have found major depression to be the fourth leading cause of premature death and disability worldwide.

Impairment.

Social and relational impairment. There is a significant amount of social and relational impairment in functioning that occurs as a result of anxiety and depressive

syndromes. Many studies have found that compared to people without major depression, people with major depression had greater impairment in their social functioning (Kessler et al., 2003; Kessler, DuPont, Berglund, & Wittchen, 1999). Romera et al. (2010) used social and occupational functioning assessments (SOFAS) and found that participants with completely remitted depression scored higher. That is, the participants with complete remittance exhibited a more optimum level of functioning than the participants that had only partial remittance. When controlling for sociodemographic variables, Stein and Heimberg (2004) found a higher rate of dissatisfaction with activities and family life for people diagnosed with either GAD or MDD than those without either diagnosis. This emphasizes the social and relationship functionality problems that people with anxiety and depression experience.

Occupational impairment. Impairments are not limited only to the social life of a person with depression or anxiety symptoms. Another area of impairment for these people may be in their occupational setting. A study by Kessler et al. (1999) demonstrated that, compared to people without GAD and MDD, people with GAD and MDD have higher impairment in their work environment. Kessler et al. (1999) also found that people with both GAD and MDD have a higher level of impairment than those with only one of the two disorders. This demonstrates the greater disruption of functioning that comes from the comorbidity of depression and anxiety. Another research study examined time taken off from work by people with MDD. Romera et al. (2010) measured the amount of sick leave and absences from work over a period of 3

months for people in partial or complete remission of MDD. The researchers found that participants with partial remission had higher rates of sick leave and absences from work than participants with complete remission of MDD.

Physical impairment. Anxiety and depressive syndromes may be associated with mild to severe physical impairment as well. Ormel and Costa e Silva (1995) found that of the participants with physical disabilities, 26% to 53% had depression or anxiety as compared to 7% to 12% who had no psychiatric diagnosis. Although it was not explained whether the psychological symptoms were present before the disabilities or after, this study emphasized the correlation between physical problems and psychological health. Another study showing correlations between physical disability and depression was conducted by Romera et al. (2010). The researchers found that participants with partial remission of depression reported higher rates of disability in the previous month than participants who were in complete remission (Romera et al., 2010). Research has shown correlations between depressive syndromes and health problems. Many studies have found that depression may heighten the risk of a person developing cardiovascular disease (Ford et al., 1998; Sesso, Kawachi, Vokonas, & Sparrow, 1998). Wells et al. (1989) commented on the Medical Outcome Study, which found "that the physical functioning of patients with depressive symptoms was significantly worse than that of patients with hypertension, diabetes, arthritis, and gastrointestinal problems" (p. 6). Research also has shown that, as compared to those with low negative affectivity, people with high negative affectivity are more likely to catch a cold (Cohen et al., 1995).

Emotional and cognitive impairment. There can also be significant impairment in a person's cognitive processes due to psychological distress. Although most research finds that anxiety and depressive symptoms increase with age (e.g., Wittchen & Hoyer, 2001), some research suggests that these symptoms are more intense at younger ages. Carter et al. (2001) found that participants between 18 and 34 years of age had significantly higher amounts of mental or cognitive distress due to their anxiety than the participants 35 years and older. Other research has shown that people diagnosed with MDD combined with low autonomy exhibit higher amounts of cognitive distortions such as fortune telling (predicting the future without any regard for considering other, more likely options) and selective abstraction (an all-or-nothing thinking that jumps to conclusions by emphasizing certain details and ignoring others) than those without MDD (Schwartzman et al., 2012). Conversely, Legerstee, Garnefski, Verhulst, and Utens (2011) did not find any cognitive differences in adolescents with anxiety disorders and those without. There were no differences in adolescents' methods of cognitive coping strategies.

Research on emotionality shows that people with GAD have more negative emotional expression and greater difficulty in identifying and describing emotions than those without psychiatric disorders (Mennin, Heimberg, Turk, & Fresco, 2005). Compared to people without MDD or GAD, those with MDD or GAD have lower perceived well-being (Stein & Heimberg, 2004; Wood & Joseph, 2010). Research indicates that those with depression have higher rates of maladaptive cognitive patterns.

A study by Spasojević and Alloy (2001) found that people with depressive symptomatology have higher negative cognitive styles involving rumination than those without any depressive symptomatology. Similarly, Morrow and Nolen-Hoeksema (1990) conducted research on undergraduates in the U.S. They found that, as compared to people who distract themselves passively or actively, those who ruminate on their internal feelings or on external events have the most stability in their level of sadness.

Sex differences.

Anxiety. Most of the research performed on anxiety symptoms has shown discrepancy between the sexes. Abdel-Khalek and Alansari (2004) used The Kuwait University Anxiety Scale (KUWAS) and found that anxiety was much higher among female undergraduate students than male undergraduate students from universities in 10 countries across the Middle East. Similarly, research done on adolescents has found that female adolescents exhibit higher rates of negative affect and anxiety disorders than male adolescents (Brady & Kendall, 1992; Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998).

Studies performed on older adults have found similar results. Regier et al. (1993) and Kessler et al. (1994) found that women are two times more likely to have anxiety disorders than men. Leach, Christensen, Mackinnon, Windsor, and Butterworth (2008) also found that across the age range of 20–64 years, women exhibit higher rates of rumination, neuroticism, and overall anxiety than men. Research also shows that there are higher lifetime rates and incidences of anxiety disorders, as well as more psychosocial

stressors and feelings of anxiety, for women than men (McLean, Asaani, Litz, & Hofmann, 2011; Shepperd & Kashani, 1991; Simon & Nath, 2004). Although Yonkers, Bruce, Dyck, and Keller (2003) found that the severity of GAD was the same for men and women, they found that the age of onset for men was much earlier than for women.

Depression. Most of the research examining depressive symptoms has shown a discrepancy between sexes. Many studies have shown that female adolescents experience higher levels of sadness, shame, guilt, and other depressive symptoms than male adolescents (Auerbach, Abela, Zhu, & Yao, 2010; Stapley & Haviland, 1989). Essau, Lewinsohn, Seeley, and Sasagawa (2010) used the Schedule for Affective Disorders and Schizophrenia to find that female participants exhibited higher rates of major depressive episodes occurring from adolescence until follow-up at their 24th and 30th birthdays. There was a higher correlation found between number of episodes and age of first depressive episode for the female participants, as compared to the male participants. Female participants having their first episode at a younger age were at greater risk for developing a higher number of episodes throughout their lives than the male participants (Essau et al., 2010). Additional research also suggests that adolescent girls show depressive symptoms at a younger age and also have higher rates of depression than adolescent boys, once the girls reach puberty (Ge, Conger, & Elder, 2001; Hankin et al., 1998). A study by Nolen-Hoeksema (2001), likewise shows similar findings and indicates that the depressive symptoms occur because girls ruminate by focusing on inner distress feelings more than boys. The trend continues for adults, as

Simon and Nath (2004) also found that women report negative and sad feelings more often than men.

The high prevalence rates of depression and anxiety disorders demonstrated across numerous studies (Carter et al., 2001; Fichter et al., 2010; Shepherd et al., 1996) indicate the vast amount of people who are affected by these disorders. These disorders have been demonstrated to cause a great deal of impairment in one's social life (Kessler et al., 2003), occupational life (Romera et al., 2010), cognitive processes (Schwartzman et al., 2012) and physical aspects of life (Ormel & Costa e Silva, 1995). Treating these disorders to alleviate impairment may cost thousands of dollars and usually requires people to have health insurance. There are people whose insurance companies will only pay for a specific number of treatment sessions, regardless of whether they have improved or not. In addition, some people may not require intense therapy after they have recovered; however, they may still benefit from therapeutic interventions that may prevent them from relapsing. A less expensive and convenient form of therapy can impact these people's lives in a positive way. In recent years, the concept of gratitude has surfaced as a complementary tool for not only alleviating negative symptoms, but increasing positive symptoms as well (Wood et al., 2010).

Gratitude Related to Anxiety and Depressive Symptoms

Studies on gratitude have shown that there are generally low levels of anxiety and depressive symptoms in participants with high levels of gratitude. One specific study on anxiety symptoms was performed by Kashdan et al. (2006). The researchers measured

daily gratitude and trait-based gratitude using the 6-item Gratitude Questionnaire (GQ-6) created by McCullough et al. (2002). They tested war veterans diagnosed with PTSD as well as veterans who were not diagnosed with PTSD. The war veterans with PTSD had lower trait-based gratitude, well-being, and positive affect than those who were not diagnosed.

Most of the studies examining how gratitude correlates with depression have shown an inverse relationship. Proctor et al. (2010) found that adolescents who report themselves as being very happy also express more gratitude, less depression, and less social stress than adolescents who are very unhappy. Other research uses different types of measures to find similar results. Each of the following three studies found that decreased levels of stress and depression in the participants corresponded with higher levels of gratitude. Watkins et al. (2003) measured gratitude using the Gratitude, Resentment and Appreciation Test on undergraduate students and correlated it with depression, as measured by the Beck Depression Inventory. Research on undergraduate students by Wood, Maltby, et al. (2008) and Wood et al. (2007) measured gratitude using the GQ6 and depression using the Centre for Epidemiological Studies Depression Scale.

Summary and Purpose of Study

Research on gratitude shows that it is not only correlated with lower negative affectivity (Kashdan et al., 2006; McCullough et al., 2002; Sheldon & Lyubomirsky, 2006; Watkins et al., 2003), but it is also positively correlated with the positive factors of life such as positive affect (Emmons & McCullough, 2003; Froh et al., 2008; Sheldon & Lyubomirsky, 2006; Watkins et al., 2003), life satisfaction (Froh et al., 2008; McCullough et al., 2004; Wood, Joseph, et al., 2008), well-being (Kashdan et al., 2006; Wood, Maltby, et al., 2008), and happiness (Proctor et al., 2010; Wood & Joseph, 2010; Wood, Maltby, et al., 2008). Gratitude is also positively correlated with better physical health and greater psychosocial adjustment (Algoe et al., 2010; Lambert & Fincham, 2011), as well as healthy cognitive and emotional aspects of life (Flinchbaugh et al., 2012; Froh et al., 2009; Lambert et al., 2009; Sheldon & Lyubomirsky, 2006). Additionally, some studies have found sex differences in how these variables are related to gratitude (Fuijita et al., 1991; Grossman & Wood, 1993; Kashdan et al., 2009), while others have not (Froh et al., 2009; Lambert & Fincham, 2011; Sood & Gupta, 2012).

Anxiety and depressive symptoms, or negative affectivity, can greatly affect areas of functioning. Research has linked negative affectivity with social and relational impairment (Kessler et al., 1999; Kessler et al., 2003; Stein & Heimberg, 2004), problems in the occupational setting (Kessler et al., 1999; Romera et al., 2010), physical and health problems (Cohen et al., 1995; Ford et al., 1998; Ormel & Costa e Silva, 1995; Sesso et al., 1998), maladaptive cognitive processes (Carter et al., 2001; Schwartzman et

al., 2012; Stein & Heimberg, 2004), and emotional problems (Mennin et al., 2005). There are sex differences in impairment, distress, and intensity caused by anxiety symptoms (Abdel-Khalek & Alansari, 2004; Brady & Kendall, 1992; Leach et al., 2008; McLean et al., 2011) and depressive symptoms (Auerbach et al., 2010; Essau et al., 2010; Ge et al., 2001; Spasojević & Alloy, 2001).

Studies conducted on levels of gratitude have assessed different reasons for differences in gratitude levels between sexes. No studies have assessed whether psychological well-being constructs that are correlated with gratitude and negative affectivity differ in their ability to predict levels of gratitude for each sex. No study to date has assessed whether higher levels of attending to one's emotions may be correlated with higher levels of gratitude. Gratitude may have a greater impact on authentic-durable happiness rather than fluctuating happiness (Dambrun et al., 2012). No previous studies have used the new measure of the subjective authentic-durable happiness scale developed by Dambrun et al. (2012) to examine sex differences in authentic-durable happiness compared to subjective fluctuating happiness.

Hypotheses

1. There would be sex differences in gratitude (as measured by the GQ-6); women would have higher scores than men.
2. Higher scores of gratitude (as measured by the GQ-6) would be significantly positively correlated with higher scores of life satisfaction (as measured by the SWLS), well-being (as measured by the Scale of Psychological Well-being

[PWB]), authentic-durable happiness (as measured by the SA-DHS), positive affect (as measured by the PANAS), but not positively correlated with subjective fluctuating happiness (as measured by the SFHS).

3. Higher scores of attending to emotions (as measured by the Attending to Emotions Scale) would be correlated with higher scores of gratitude (as measured by the GQ-6)
4. Psychological well-being variables (i.e., life satisfaction [as measured by the SWLS], well-being [as measured by the PWB], authentic-durable happiness [as measured by the SA-DHS], positive affect [as measured by the PANAS]), attending to emotions (as measured by the Attending to Emotions Scale) and negative affectivity (as measured by the SAS and the SDS), would predict gratitude differently for women and for men.
5. There would be significant sex differences in anxiety and depressive symptoms, with women having higher anxiety and depressive symptoms (as measured by the Zung Self-Rating Anxiety Scale [SAS] and Zung Self-Rating Depression Scale [SDS]) than men.

CHAPTER II

Method

Participants

The participants were 276 undergraduate psychology students from Middle Tennessee State University and were obtained from the Psychology research pool. Students participated in the research pool in order to fulfill a course requirement or to receive extra credit in their psychology class. To be included in the study, participants were at least 18 years old. Responses of 12 students were dropped by the researcher due to missing data. This resulted in a loss of 4% of total participants and the total number of participants included in data analysis was 264. See Table 1 for frequencies of categorical demographic variables.

Table 1

Frequencies for Categorical Demographic Variables

Variable	*N*	Percentage
Gender		
Men	91	34.5
Women	173	65.5
Age		
18-21 years	219	83.0
22-25 years	31	11.7
26 years or above	13	4.9
No Response	1	.4

Note. $N = 264$.

Measures

Demographics. Participants were asked to provide their age and sex. See Appendix D.

Gratitude. The Gratitude Questionnaire (GQ-6) was created by McCullough et al. (2002) to assess the disposition of a person to experience gratitude. The current study used the GQ-6 scale to measure gratitude. There are six items on the GQ-6, and participants rate each item on a 7-point Likert type scale ranging from *strongly disagree* to *strongly agree*. Two of the items are reverse-scored to prevent response bias from occurring. The GQ-6 is a self-report scale and contains items such as "I have so much in life to be thankful for" and "long amounts of time can go by before I feel grateful to something or someone." The internal reliability coefficients for the GQ-6 are good. The alpha coefficients are between .82 and .87 (McCullough et al., 2002). According to McCullough et al. (2002), the GQ-6 shows strong evidence of being highly correlated with life satisfaction, while being negatively correlated with depression and anxiety.

Positive and negative affect. The Positive and Negative Affectivity Schedule (PANAS) was created by Watson, Clark, and Tellegen (1988) to measure affectivity. It measures a person's feeling or basic disposition at different specific times, such as at the moment, today, past few days, past few weeks, year, or general. The current study used this to measure positive and negative affect during the past week. There are 20 items on the PANAS, which involve descriptive words such as "irritable," "ashamed," and "enthusiastic." There are 10 positive and 10 negative descriptors. The participants rated

each item on a 5-point Likert type scale ranging from *very slightly or not at all* to *extremely*. The scale measures the extent to which a person expresses positive affective traits and negative affective traits. This study measured the scores separately for positive affect and for negative affect by adding up the scores for each section.

According to Watson et al. (1988), the internal consistency for the PANAS is moderately good. It has very good convergent and discriminant correlations with stability of mood over a long period of time as well. The alpha coefficients for the PANAS are .89 and .85 for the Moment time frame, .90 and .87 for the Today time frame, .88 and .85 for the Past Few Days time frame, .87 for the Past Few Weeks time frame, .86 and .84 for the Year time frame, and .88 and .87 for the General time frame. The PANAS has moderate to high correlations with related constructs on the following scales: Hopkins Symptom Checklist (.74 with negative affect, -.19 with positive affect), Beck Depression Inventory (.56 with negative affect, -.35 with positive affect), and State Anxiety Scale (.51 with negative affect, -.35 with positive affect) (Watkins et al., 1988).

Life satisfaction. The Satisfaction with Life Scale (SWLS) was developed by Diener, Emmons, Larson, and Griffin (1985) to assess general satisfaction in people's lives. The current study used this measure for the same purpose. There are 5 items on the SWLS with phrases such as “In most ways my life is close to my ideal” and “I am satisfied with life.” The participants rated each item on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. According to Pavot and Diener (1993), the SWLS has good convergent validity and has discriminant validity from other well-being

measures. The SWLS has been shown to have a reliability of .92 (Shevlin, Brunsden, & Miles, 1998).

Fluctuating happiness. The Subjective Fluctuating Happiness Scale (SFHS) was developed by Dambrun et al. (2012) to assess a self-centered happiness. This type of happiness fluctuates according to temporary experiences of pleasure or displeasure. The current study used this measure to assess fluctuating happiness as well. There are 10 items on the SFHS, which include statements such as "I have had satisfaction and also great disappointments" and "In the same day, I can sometimes be happy and sometimes sad" (Dambrun et al., 2012). Participants rated each item on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. Test-retest reliability has shown a very high correlation between two different time periods of taking the test ($r = 0.85$). According to Dambrun et al. (2012), the SFHS has high internal consistency. The alpha coefficient is 0.89. In addition, the scale has positive correlations with subjective well-being and negative correlations with depression and psychological distress.

Authentic-durable happiness. The Subjective Authentic-Durable Happiness Scale (SA-DHS) was developed by Dambrun et al. (2012) to assess authentic and durable happiness. This type of happiness is not determined by outside pleasures and displeasure; instead, it is affected by a person's abilities to deal with the outer world using inner resources, such as hope and gratitude. The current study used this scale to measure authentic-durable happiness as well. There are 16 items on the SA-DHS, and participants rate each item on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*.

The items on the test start off with “In your life, what is your regular level of ... ” and have phrases that end the sentence such as “pleasure” and “happiness.” The SA-DHS shows high test-retest reliability (r = 0.90) and high internal consistency with an alpha coefficient of 0.93. According to Dambrun et al. (2012), the SA-DHS positively correlates with subjective well-being and negatively correlates with depression and psychological distress.

Attending to emotions. The Attending to Emotions Scale was developed by Barchard (2001) to assess the extent to which one focuses attention on one's emotions. It is one part of the seven components that Barchard (2001) states are related to Emotional Intelligence (EI). The current study used only the attending to emotions portion of the Barchard (2001) Emotional Intelligence Test. There are 10 items on the Attending to Emotions Scale. Participants rated each item on a 5-point Likert-type scale ranging from *very inaccurate* to *very accurate* in describing oneself with phrases such as “think about the causes of my emotions” and “often ignore my feelings.” The Attending to Emotions Scale has good reliability with alpha coefficients of 0.81 and 0.83 for women and men, respectively (Barchard, 2001). According to Barchard (2001), the Emotional Intelligence Scale has good discriminant validity with the Emotional Management subscale on the Mayer-Salvoney-Caruso Emotional Intelligence Test and the Levels of Emotional Awareness Scale. The Barchard (2001) scale also has good convergent validity with the Regulation of Emotions in the Self subscale on the Tett Emotional Intelligence Scale.

Well-being. The Psychological Well-Being Scale (PWB) was developed by Ryff and Keyes (1995) to assess one's well-being based on six different subscales: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-acceptance. Each subscale has 9 or 14 items depending on whether the long form of 84 items or medium form of 54 items of the test is used. A shorter form of the test is available with 18 items; however, its psychometric properties are less reliable. Similar to the scale used by the Wisconsin Longitudinal study, as mentioned by Seifert (2005), the current study used the medium form of 54 items to assess well-being. Participants rated each item on a 6-point Likert scale ranging from *strongly disagree* to *strongly agree.* Examples of the items on the PWB include statements such as "I have confidence in my opinions, even if they are contrary to the general consensus" and "I like most aspects of my personality." According to Seifert (2005), the PWB has good internal consistency with alpha coefficients of 0.93, 0.91, 0.86, 0.90, 0.90, and 0.87 for each of the six subscales. The PWB has shown validity correlations with the following subscales: The Affect Balance Scale with Personal Growth (.25) and Environmental Mastery (.62); the Life Satisfaction Index with Autonomy (.28) and Self-acceptance (.73); the Rosenberg Self-esteem Scale with Personal Growth (.29) and with Self-acceptance (.62); the Zung Depression Scale with Environmental Mastery and Purpose in Life (-.60) and with Positive Relationships (-.33) (Akin, 2008).

Anxiety. The Zung Self-Rating Anxiety Scale (SAS) was developed by Zung (1971) to measure anxiety symptoms. The current study used the SAS to measure

anxiety symptoms as well. The SAS is a 20-item self-report scale. The SAS has items rated on a 4-point frequency scale that describes how often one feels or behaves in a certain way in the past several days such as "I feel more nervous and anxious than usual" and "I am bothered by dizzy spells." The feeling or behavior ranges from occurring *none or little of the time* to *most or all of the time*. The raw scores on the scale range from 20-80. These are then converted to one of four different types of Anxiety Indexes: normal range (20-44), mild to moderate anxiety levels (45-59), marked to severe anxiety levels (60-74), and extreme anxiety levels (75-80). The SAS has been reviewed for its psychometric properties. According to Jegede (1977), the psychometric attributes of this scale have good reliability and validity. Cronbach's alpha for the SAS is 0.77 (de la Ossa, Martinez, Herazo, & Campo, 2009). Scores on the SAS are strongly associated with scores on another measure of depression, the Center for Epidemiological Studies-Depression Scale ($r = .64$, $p < .001$) (Olatunji, Deacon, Abramowitz, & Tolin, 2006).

Depression. The Zung Self-Rating Depression Scale (SDS) was developed by Zung (1965) to measure depressive symptoms. The SDS is a 20-item self-report scale. The test has an equal number of positively worded items and negatively worded items rated on a 4-point frequency scale. The current study used the SDS scale to measure depressive symptoms as well. The SDS has items that describe how often one feels or behaves in a certain way in the past several days such as "I notice that I am losing weight" and "I get tired for no reason." The feeling or behavior ranges from occurring *none or a little of the time* to *most or all of the time*. The scores on the scale fall into four

different ranges depending on where the score falls in the range of 20-80: normal range (20-49), mildly depressed (50-59), moderately depressed (60-69), and severely depressed (70 and above). The internal reliability measures of the SDS are relatively high. Cronbach's alpha coefficient is .82, and the split-half reliability coefficient is .79 (De Jonghe & Baneke, 1989). The SDS correlated highly with the treating physician's global rating of depression in patients (r = .69) in a study done by Biggs, Wylie, and Ziegler (1978).

Procedure

The current study was approved by the Institutional Review Board (IRB) at Middle Tennessee State University prior to data collection (see Appendix A). Participants were recruited through the psychology research pool and accessed the study online using the MTSU Sona research pool server at http://mtsu.sona-systems.com/. See Appendix B for the study overview that was available to students on the Sona site prior to signing up for the study.

Participants were asked to complete the survey containing all the measures immediately following signing up for the study. Informed consent information was included in the opening text of the online survey. Consent was acknowledged by progressing to the next screen and answering items. Participants were allowed to withdraw from the study or opt out of answering individual items throughout the study without penalty. See Appendix C for the informed consent document.

The participants were asked to complete a short demographic survey with two questions about age and sex. Once the demographic questions were completed, the measures were presented in the following order: SAS, SDS, GQ-6, PANAS, SWLS, SFHS, SA-DHS, Attending to Emotions Scale, and PWB. Debriefing information was on the last page of the online survey. See Appendix E for the Debriefing document. The average completion time for the study was less than 30 minutes.

CHAPTER III

Results

Descriptive Statistics and Independent *t*-tests

Hypothesis 1 stated that women would have higher scores of gratitude than men. This was supported by the results: gratitude scores for men (M = 35.12, SD = 5.49) and women (M = 36.78, SD = 5.11) were significantly different $t(262) = 2.44$; $p < .05$. Table 2 displays the descriptive statistics and results of the *t*-tests.

Additional *t*-tests were conducted to examine differences between men and women for the following: life satisfaction, positive affect, authentic-durable happiness, subjective fluctuating happiness, psychological well-being and attending to emotions. These analyses found significant differences in attending to emotions: men (M = 36.22, SD = 9.12) and women (M = 40.03, SD = 7.22); $t(262) = 3.71$; $p < .01$. No significant differences were found in life satisfaction for men (M = 25.00, SD = 7.05) and women (M = 24.63, SD = 6.92); $t(262) = -.41$; $p = .68$; positive affect for men (M = 37.89, SD = 6.89) and women (M = 36.88, SD = 7.44); $t(262) = -1.08$; $p = .28$; authentic-durable happiness for men (M = 64.86, SD = 17.19) and women (M = 62.38, SD = 15.91); $t(262) = -1.17$; $p = .24$; subjective fluctuating happiness for men (M = 38.62, SD = 13.36) and women (M = 41.27, SD = 12.37); $t(262) = 1.61$; $p = .11$; and psychological well-being for men (M = 243.64, SD = 34.36) and women (M = 242.57, SD = 36.94); $t(262) = -.23$; $p = .82$. However, significant differences were found in negative affect between women (M = 22.47, SD = 9.02) and men (M = 19.86, SD = 7.48); $t(262) = 2.36$, $p < .05$.

Table 2

Descriptive Statistics and Independent t-tests for Men and Women

	Men (n = 91)		Women (n = 173)		
Variables	*M*	*SD*	*M*	*SD*	*t*
GQ-6	35.12	5.49	36.78	5.11	2.44*
Positive affect	37.89	6.89	36.88	7.44	-1.08
Negative affect	19.86	7.48	22.47	9.02	2.36*
SWLS	25.00	7.05	24.63	6.92	-.41
SFHS	38.62	13.36	41.27	12.37	1.61
SA-DHS	64.86	17.19	62.38	15.91	-1.17
PWB	243.64	34.36	242.57	36.94	-.23
Attending to emotions	36.22	9.12	40.03	7.22	3.71**
SAS	33.25	7.63	38.72	10.01	4.55**
SDS	35.89	7.85	39.65	9.09	3.34**

Note. GQ-6 = The Gratitude Questionnaire-Six Item Form; SWLS = Satisfaction with Life Scale; SFHS = Subjective Fluctuating Happiness Scale; SA-DHS = Subjective Authentic-durable Happiness Scale; PWB = Psychological Well-being Scale; SAS = Zung Self-Rating Anxiety Scale; SDS = Zung Self-Rating Depression Scale; *$p < .05$, ** $p < .01$.

Correlations with Gratitude

Hypothesis 2 and 3 stated that higher scores on gratitude would be significantly correlated with higher scores on life satisfaction, well-being, authentic-durable happiness, positive affect, and attending to emotions. Hypothesis 2 also stated that higher scores of gratitude would not be significantly correlated with higher scores on subjective fluctuating happiness. Both of these hypotheses are supported by the results (see Table 3). Positive correlations were found between gratitude and life satisfaction, $r = .49$, $p < .01$; between gratitude and well-being, $r = .59$, $p < .01$; between gratitude and authentic-

durable happiness, $r = .49$, $p < .01$; between gratitude and positive affect, $r = .41$, $p < .01$; and between gratitude and attending to emotions, $r = .15$, $p < .05$. A negative correlation existed between gratitude and subjective fluctuating happiness, $r = -.31$, $p < .01$.

Table 3

Pearson Correlations with Gratitude

	1	2	3	4	5	6	7	8	9	10
1. Gender										
2. GQ6	**.15**									
3. Positive Affect	-.07	**.41**								
4. Negative Affect	**.15**	**-.38**	**-.34**							
5. SWLS	-.03	**.49**	**.43**	**-.49**						
6. SFHS	.10	**-.31**	**-.28**	**.53**	**-.42**					
7. SADHS	-.07	**.49**	**.63**	**-.60**	**.75**	**-.55**				
8. PWB	-.01	**.59**	**.65**	**-.62**	**.63**	**-.49**	**.74**			
9. AttenEmotions	**.22**	**.15**	**.15**	-.03	**.11**	.09	**.13**	**.17**		
10. SAS	**.27**	**-.36**	**-.39**	**.74**	**-.40**	**.49**	**-.56**	**-.54**	.00	
11. SDS	**.20**	**-.48**	**-.54**	**.74**	**-.51**	**.53**	**-.66**	**-.65**	-.07	**-.82**

Note. $n = 264$. $p < .05$ are in boldface. GQ-6 = The Gratitude Questionnaire-Six Item Form; SWLS = Satisfaction with Life Scale; SFHS = Subjective Fluctuating Happiness Scale; SA-DHS = Subjective Authentic-durable Happiness Scale; PWB = Psychological Well-being Scale; AttenEmotions = Attending to Emotions Scale; SAS = Zung Self-Rating Anxiety Scale; SDS = Zung Self-Rating Depression Scale.

Linear Regression Analyses

Hypothesis 4 stated that the psychological well-being variables (i.e. life satisfaction [as measured by the SWLS], well-being [as measured by the PWB], authentic-durable happiness [as measured by the SA-DHS], positive affect and negative affect [as measured by the PANAS]), attending to emotion (as measured by the Attending

to Emotions scale) and negative affectivity (as measured by the SAS and SDS) would predict gratitude differently for men and for women. Separate equations for women and for men were created to assess the extent to which the independent variables loaded differently in predicting gratitude levels for women and for men.

The results of the analyses supported the hypothesis (see Table 4). The study found that 34% of the variance (R = .64, adjusted R^2 = .34, F (9, 90) = 6.21, p < .01) in gratitude for men could be predicted by the predictor variables. In the final equation, psychological well-being (as measured by the PWB), β = .29, p < .05 and life satisfaction (as measured by the SWLS), β = .26, p < .05 were found to be significant predictors of gratitude. Depressive symptomatology (as measured by the SDS) β = -.31, p = .05 was found to be a marginally significant predictor of gratitude. The results indicated that 43% of the variance (R = .68, adjusted R^2 = .43, F (9, 172) = 15.25, p < .01) in gratitude for women could be predicted by the predictor variables. In the final equation, well-being (as measured by the PWB), β = 0.50, p < .01, and depressive symptoms (as measured by the SDS), β = -0.27, p < .05, were found to be significant predictors of gratitude for women. Life satisfaction (as measured by the SWLS), β = -.18, p = 0.07 was found to be a marginally significant predictor of gratitude for women.

Table 4

Tests of Variables Predicting Gratitude Level

	Men			Women		
Predictor	*B*	*SE*	β	*B*	*SE*	β
Constant	23.29	6.05		25.03	4.68	
Positive affect	0.12	0.09	0.15	-0.05	0.06	-0.08
Negative affect	0.10	0.11	0.14	-0.05	0.06	0.09
SWLS	0.20	0.10	0.26*	-0.13	0.07	-0.18
SFHS	0.07	0.05	0.16	-0.03	0.03	-0.07
SA-DHS	-0.04	0.05	-0.13	-0.02	0.04	-0.05
PWB	0.05	0.02	0.29*	0.07	0.02	0.50**
AttenEmotions	0.02	0.05	0.03	-0.01	0.04	-0.02
SAS	-0.12	0.11	-0.17	0.04	0.06	0.07
SDS	-0.22	0.11	-0.31	-0.15	0.07	-0.27*

Note. SWLS = Satisfaction with Life Scale; SFHS = Subjective Fluctuating Happiness Scale; SA-DHS = Subjective Authentic-durable Happiness Scale; PWB = Psychological Well-being Scale; AttenEmotions = Attending to Emotions Scale; SAS = Zung Self-Rating Anxiety Scale; SDS = Zung Self-Rating Depression Scale; ** $p < .01$; * $p < .05$.

Hypothesis 5 stated that women would have higher anxiety and depressive symptoms than men. This was supported by the independent t-tests. These analyses found significant differences between anxiety symptoms for men ($M = 33.25$, $SD = 7.63$) and women ($M = 38.72$, $SD = 10.01$); $t(262) = 4.55$, $p < .01$; and between depressive symptoms for men ($M = 35.89$, $SD = 7.85$) and women ($M = 39.65$, $SD = 9.09$); $t(262) = 3.34$, $p < .01$ (see Table 2). However, the means for men and women were in the normal range on both SAS and SDS.

Post-hoc analyses. The relationships among the variables were explored further in a series of post-hoc analyses. As an additional test and extension of hypothesis 5, a forward regression was run with all the predictor variables listed in Table 4 (positive

affect, negative affect, life satisfaction, subjective fluctuating happiness, authentic-durable happiness, well-being, attention to emotions, anxiety symptoms and depressive symptoms) as the independent variables predicting gratitude. Since many of the independent variables were highly correlated with each other, this equation was run in order to examine which variables would enter the regression equation first and would, therefore, have the strongest correlations with gratitude. The results indicated that the variables entered in the following order: well-being (as measured by the PWB), $R = .59$, $F\ (1, 263) = 136.32$, $p < .01$; life satisfaction (as measured by the SWLS), $R = .61$, $F\ (2, 263) = 76.17$, $p < .01$; gender, $R = .63$, $F\ (3, 263) = 56.46$, $p < .01$; and depressive symptoms (as measured by the SDS), $R = .65$, $F\ (4, 263) = 46.52$, $p < .01$.

CHAPTER IV

Discussion

General Findings

The results from this study supported Hypothesis 1 and found that women have higher scores on gratitude than men. Similar results have been found in some studies (Fuijita et al., 1991; Grossman & Wood, 1993; Kashdan et al., 2009), but not by others (Froh et al., 2009; Lambert & Fincham, 2011; Sood & Gupta, 2012). The results from this study supported Hypothesis 2. Again, previous findings are consistent with the results showing positive correlations between gratitude and certain positive factors of life such as life satisfaction (Froh et al., 2008, McCullough et al., 2004; Wood, Joseph, et al., 2008), well-being (Kashdan et al., 2006; Wood, Maltby, et al., 2008), and positive affect (Emmons & McCullough, 2003; Froh et al., 2008; Sheldon & Lyubomirsky, 2006; Watkins et al., 2003).

Studies have also found that happiness is positively correlated with gratitude (Proctor et al., 2010; Wood & Joseph, 2010). Results from two different measures of happiness were examined to determine whether gratitude is associated with types of happiness differently. The results supported Hypothesis 2, and previous research by Dambrun et al. (2012), that higher rates of gratitude are associated with higher rates of authentic-durable happiness and that subjective fluctuating happiness is negatively correlated with gratitude. This finding has not been reported in other studies. Additional

analyses were conducted to determine sex differences in authentic-durable happiness and subjective fluctuating happiness; however no significant differences were found.

Results from this study also supported Hypothesis 3 that higher levels of attending to emotions are correlated with higher levels of gratitude. This finding has not been reported in other studies. The results also showed that attending to emotions was significantly correlated with gender such that women attended to their emotions more than men. However, attending to emotions did not have a significant loading in the regression equations for either women or men. Therefore, it is concluded that attending to emotions does not have a significant moderating effect on the relationship between gender and gratitude. A failure to find significant sex differences in the relationship between attending to emotions and gratitude in the regressions may signify that there may be other confounding variables which account for the differences in attending to emotions between women and men.

Results supported Hypothesis 4 that the well-being variables and negative affectivity predict gratitude levels differently for women and men. Psychological well-being was found to be a significant predictor for both women and men. Depressive symptomatology was a significant predictor for women but not for men. On the other hand, life satisfaction was a significant predictor of gratitude for men but not for women. These findings have not been reported in other studies. A possible explanation for this may be the presence of a buffering effect that is found in both regression equations for predicting gratitude for each gender. Well-being may serve to buffer the effects of

anxiety symptoms for women; whereas, well-being and life satisfaction may serve to buffer the effects of both anxiety and depression for men. The possibility of a buffering effect is an important factor to consider for therapeutic reasons. In order to increase gratitude for women, it may be important to increase psychological well-being as well as decrease depression. In contrast, to increase gratitude for men, increasing feelings of psychological well-being and life satisfaction may be most beneficial.

The post-hoc analysis was a forward regression with all the predictor variables used in Hypothesis 4 (i.e. positive affect, negative affect, life satisfaction, subjective fluctuating happiness, authentic-durable happiness, well-being, attention to emotions, gender, anxiety and depression) entered as the independent variables predicting gratitude. When deleting gender as a selection factor in the regression model, the post-hoc analyses revealed that psychological well-being was the most significant predictor of gratitude, followed by life satisfaction, gender, and depressive symptoms. Therefore, life satisfaction and psychological well-being, at least as PWB is measured by Ryff and Keys (1995), may be more important to gratitude than happiness and positive emotionality. This suggests that a sense one's life is working well in a number of life domains may be more important to gratitude than a general feeling of happiness.

The results of the post-hoc analysis also suggested that while gender is important to gratitude, well-being and life satisfaction may be somewhat more important to gratitude. This may help explain the different results found in the literature for the relationship between gratitude and gender. That is, previous studies may have neglected

to measure differences in well-being and life satisfaction. Therefore, samples with higher well-being may have not shown gender differences, while samples with lower well-being may have found significant gender differences.

Consistent with Hypothesis 5 and previous findings on anxiety symptoms (Abdel-Khalek & Alansari, 2004; Brady & Kendall, 1992; Leach et al., 2008; McLean et al., 2011), this study found significant sex differences showing that women have higher rates of anxiety symptoms than men. Consistent with previous findings (Auerbach et al., 2010; Essau et al., 2010; Ge et al., 2001; Spasojević & Alloy, 2001), this study also found significant sex differences in depressive symptoms, indicating that women have higher rates of depressive symptoms than men. However, the means examined in this study are in the normal range and not characteristic of anxiety or depressive disorders.

Limitations

The current study had a couple of limitations. First, the sample was not representative of the typical university population, as it was a convenience sample of students in psychology courses recruited using a research pool. Ideally, the sample would have consisted of equal numbers of women and men. However, of the participants, 65.5% were women and only 34.5% were men.

A second limitation was the time frame involved in the scales describing anxiety symptoms, depressive symptoms, positive affect, and negative affect. These scales used the time frame of one week. The data were collected during the first two weeks of classes for the fall semester. The responses may be confounded due to the start of school

being a stressful adjustment time for some students, or a time of unusually high positive feelings due to seeing friends again and optimistic outlooks.

Future Research

Despite its limitations, the results of this study may have important implications for understanding the sex differences in gratitude and negative affectivity. It would be beneficial to further explore whether employing techniques to increase levels of gratitude, such as gratitude journaling, may lead to increases in the psychological constructs correlated with gratitude: life satisfaction, positive affect, well-being, authentic-durable happiness and attending to emotions.

It would also be beneficial to explore whether increases in gratitude will lead to a decrease in anxiety and depressive symptoms. These techniques would be particularly important for prevention of anxiety and depressive disorders. Since the current study did not examine whether participants have been diagnosed with anxiety or depressive disorders, it may be advantageous to gather significant medical history stating diagnoses for future research. Additionally, someone close to the student, (e.g., family or friend) could verify the student's current symptoms. Gathering data from multiple sources would allow verification of the validity of the student's report and the reliability across raters.

Anxiety and depressive disorders have been described as having great risk for impairments in social functioning (Kessler et al., 1999; Kessler et al., 2003), occupational functioning (Kessler et al., 1999; Romera et al. 2010), physical functioning (Ormel &

Costa e Silva 1995; Sesso et al., 1998), cognitive functioning (Carter et al., 2001; Stein & Heimburg, 2004) and emotional functioning (Mennin et al., 2005). It may also be valuable to explore the extent of impairment existing due to negative affectivity in college students. Future research involving longitudinal studies could be beneficial in determining how much the anxiety and depressive symptoms influence the functioning of students throughout their lives.

The results from this study found that attending to one's emotions is positively correlated with gratitude levels. The analyses also found that women have significantly higher levels of attending to emotions than men. For women, these levels of attending to emotions may be associated with higher levels of gratitude as well. Although this relationship is only shown to be correlational and not causal, it may be beneficial to conduct further analyses to determine if there are other variables that may moderate the effect that attending to emotions has on gratitude such as well-being or depressive symptoms.

Interestingly, the current study found that there were no significant correlations between attending to emotions and any indicators of psychological distress: negative affect (-.03), subjective fluctuating happiness (.09), anxiety (.00), and depression (-.07). In contrast, studies have reliably found that rumination is associated with symptoms of depression (Nolen-Hoeksema, 2001). This suggests that a person's cognitive style may be more important to negative emotionality than whether the person pays attention to

their own emotions. Alternatively, this may be because the means of the anxiety symptoms and depressive symptoms were in the normal range.

In addition, the current study examined significant predictors of gratitude for each sex by creating multiple linear regression equations using all of the predictors in the same equation. Although this study did not find all of the predictors of gratitude to be significant in the equations, all of the psychological variables of gratitude significantly correlated with gratitude. The study also found that when gender is not taken into account, well-being variables are the most significant predictors of gratitude. It may be beneficial to examine each significant positive correlate of gratitude, while keeping attending to emotions and gender as independent variables, to examine which correlate contributes the most to gratitude and, consequently, to overall well-being.

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APPENDICES

Appendix A

IRB Approval

August 21, 2013

Shazia Ansari
Psychology Department
sa4a@mtmail.mtsu.edu, dbkelly@mtsu.edu

Protocol Title: "Examining sex differences in gratitude and negative affectivity"

Protocol Number: **13-362**

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies for an expedited review under 45 CFR 46.110 Category 7.

Approval is granted for one (1) year from the date of this letter for **250** participants.

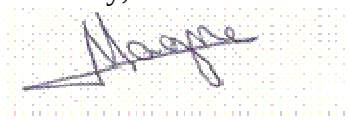
According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance (Box 134) before they begin to work on the project.** Any change to the protocol must be submitted to the IRB before implementing this change.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Your study expires **August 20, 2014**.

Also, all research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,



Cyrille Magne
IRB representative
Middle Tennessee State University

IRB Approval

September 8, 2013

Shazia Ansari
Psychology Department
sa4a@mtmail.mtsu.edu

Protocol Title: "Examining sex differences in gratitude and negative affectivity"

Protocol Number: **13-362**

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposed changes to the research proposal identified above. The MTSU IRB or its representative has determined that the changes outlined below poses minimal risk to participants and qualifies for an expedited review under 45 CFR 46.110 Category 7.

1) An additional 50 participants.
2) New inclusion criteria: male only (in order to balance for gender with already acquired data)

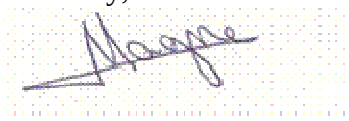
Below is a reminder of the conditions of your initial approval that will remain the same:
"According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance (Box 134) before they begin to work on the project.** Any change to the protocol must be submitted to the IRB before implementing this change.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Your study expires **August 20, 2014**.

Also, all research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me."

Sincerely,



Cyrille Magne
IRB representative
Middle Tennessee State University

Appendix B

Online Study Information

Study Name: 1902 Examining sex differences in gratitude and negative affectivity

Abstract: This study examines sex differences in anxiety and depressive symptoms and their relationship to gratitude and the psychological constructs usually correlated with gratitude such as life satisfaction, well-being, happiness, emotional attention.

Description: You will complete an anonymous survey about your anxiety and depressive symptoms as well as your levels of life satisfaction, positive affect, well-being, happiness, and emotional attention. This survey should take less than 30 minutes. The only cost to you is the time spent on the survey, and the potential benefits from the study are the credit to be assigned upon completion and learning more about research. The only risk is that some questions may make you feel uncomfortable. In that case, you do not have to answer them. Contact information regarding agencies providing counseling will also be provided in case that you feel the study has caused you any concern or distress.

Web Study: This study is an online survey administered by the system. Participants are only identified to researchers with a unique numeric ID code.

Duration: 30 minutes

Credits: 1 Credit

Researchers:

Shazia Ansari
Email: sa4a@mtmail.mtsu.edu

David Kelly
Email: dbkelly@mtsu.edu

Online (web) study administered by the system IRB Approval Code 13-362 (expires

August 20, 2012)

Appendix C

Informed Consent

Principal Investigator: Shazia Ansari
Study Title: Examining sex differences in gratitude and negative affectivity
Institution: Middle Tennessee State University

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

1. Purpose of the study:
   The current research is seeking to gather information about the difference in levels of gratitude between sexes and how these levels relate to negative emotions as well as other factors of life such as life satisfaction, positive affect, well-being, and happiness.

1. Description of procedures to be followed and approximate duration of the study:
   You will be asked to complete a series of questionnaires regarding your anxiety and depressive symptoms, gratitude level, life satisfaction, happiness, attention to emotions, and overall psychological well-being. Your responses will be anonymous. It should take less than 30 minutes to complete the questionnaires. You will receive 1 research credit for your participation.

2. Expected costs:
   There are no expected costs to you for participating in the current research.

3. Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:
   The only risk is that some questions may make you feel uncomfortable. In that case, you do not have to answer them. Contact information regarding agencies

providing counseling will also be provided in case that you feel the study has caused you any concern or distress.

4. Unforeseeable risks:
   There are no unforeseeable risks associated with participating in the current research.

5. Compensation in case of study-related injury: N/A

6. Anticipated benefits from this study:
   a) The potential benefits to science and humankind that may result from this study are greater knowledge and understanding of the reasons for and the extent of sex differences in gratitude that may occur and how these differences relate to negative affectivity.
   b) The potential benefits to you from this study is learning more about the research process.

7. Alternative treatments available: N/A

8. Compensation for participation:
   You will receive 1 research credit for participating in the current research.

9. Circumstances under which the Principal Investigator may withdraw you from study participation: N/A

10. What happens if you choose to withdraw from study participation:
    Although I hope that you choose to participate in the current research, please know that you are not required to participate or complete the questionnaires if at any time you become uncomfortable. You must answer all questions (or click NR for no response) to move to the next page of the questionnaire. If you decide to withdraw from the study, please do so by skipping to the end of the questionnaire using the option at the end of each page. You will still receive credit for participating in the research.

11. Contact Information:
    If you should have any questions about this research study or possibly injury, please feel free to contact Shazia Ansari at sa4a@mtmail.mtsu.edu or my Faculty Advisor, Dr. Kelly at 898-2584 or David.Kelly@mtsu.edu.

12. Confidentiality:
    All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your

information may be shared with the Middle Tennessee State University Institutional Review Board or Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document and the material contained in it. I understand each part of the document and I freely and voluntarily choose to participate in this study. I have read this informed consent document for this study and understand my rights as a research participant. Further, I understand that information I provide is only intended for research purposes and is not intended to establish a patient/psychologist relationship between me and the researchers/university or to be used for diagnostic purposes. A list of referral counseling services will be provided to me. Should I become distressed at any time while participating in this study and feel the need that I need psychiatric/medical or other emotional assistance, I will contact one of the referral counseling services.

Your consent to participate in this research will be given by clicking below.

Would you like to participate in the survey?

1. YES, Start Survey

2. NO, Decline to Participate

Appendix D

Demographic Questionnaire

Answer each of the following items, keeping in mind what best describes or classifies you.

1. Sex

___ Male

___ Female

___ No response

2. Age

___ 18 – 21

___ 22 – 25

___ 26 or above

___ No response

Appendix E

Debriefing Information

This survey is now complete and all responses have been saved. Please read the following information.

This study is attempting to examine sex differences in gratitude and negative emotions. It is specifically looking at whether the different components that are correlated with gratitude such as life satisfaction, positive affect, psychological well-being, and subjective authentic-durable happiness influence the level of gratitude a person has differently for women than men. It is also looking at whether paying attention to one's emotions is highly correlated with the amount of gratitude a person expresses. If answering the research question caused you any concern and you would like to speak to someone, you can contact the following agencies for counseling or support:

MTSU Counseling and Testing Center (free to MTSU students) – located in KUC 239. Phone: 615-898-2670.

The Guidance Center (fee-based) – located at 2126 N. Thompson Ln., Murfreesboro, TN 37129. Phone: 1-877-567-6051.

National Crisis Hotline: 1-800-784-2433 or 1-800-273-8255

If you would like information concerning the outcome of this study, you may contact the researcher, Shazia Ansari, at: sa4a@mtmail.mtsu.edu.