ALTRUISM AND DEPRESSION: EXPLORING THIS RELATIONSHIP
AND THE MECHANISMS BEHIND IT

Brittney C. Wright, M.S.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

August 2013

APPROVED:

Sharon R. Jenkins, Major Professor
Charles A. Guarnaccia, Committee Member
Camilo J. Ruggero, Committee Member
Jennifer L. Callahan, Director of Clinical Training
Vicki L. Campbell, Chair of the Department of Psychology
Mark Wardell, Dean of the Toulouse Graduate School
Wright, Brittney, C., *Altruism and depression: Exploring this relationship and the mechanisms behind it.* Doctor of Philosophy (Clinical Psychology), August 2013, 75 pp., 9 tables, references, 94 titles.

The impact of environmental influences on depression has been well established by research. In particular, it is known that receiving/perceiving adequate social support has a protective influence on depression. Less is known about the protective benefits of providing support to others, namely in the form of altruistic, empathetic, or prosocial behavior. While research has shown that having altruistic attitudes and engaging in altruistic behaviors has a positive impact on physical health and mental well-being, studies on the association between altruistic attitudes and/or behavior and depression are limited. The present study examined the relationship between altruism and depression, and hypotheses were tested that allow for explanation of why altruism may protect against depression. A sample of 303 participants was recruited from the University of North Texas and the surrounding community. Participants completed an online survey that examined their altruistic activities, details regarding these activities, their prosocial attitudes, and their current level of depression. Results did not support that level of involvement in altruistic activities is directly related to depression severity. However, outcomes from involvement in altruistic activities, including sense of overburden from participating in altruistic activities, level of social interaction with other helpers and those helped during altruistic activities, and sense of life satisfaction and purpose gained from participating in altruistic activities, were significantly related to depression severity. These results suggest that participating in altruistic activities that are not perceived as overburdening may lead to outcomes that could positively impact depression. Limitations and directions for future research are discussed.
Copyright 2013

by

Brittney C. Wright
TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................................ iv

Chapters

I. INTRODUCTION ...................................................................................................1

   Social Risks for Depression .................................................................2

   Helping and Supporting Others ....................................................4

   Definitions of Altruism .................................................................5

   Benefits of Altruism .................................................................7

   Altruism and Depression ..........................................................14

   The Quandary of Causality .......................................................17

   Unresolved Issues .................................................................18

   The Present Study .................................................................20

II. METHOD ..............................................................................................................24

   Participants .....................................................................................24

   Measures .........................................................................................25

   Design and Procedure ..................................................................31

III. RESULTS ..............................................................................................................33

   Descriptive Analyses .....................................................................33

   Results of Hypothesis Tests .........................................................36

   Results of Exploratory Research Questions .................................39

IV. DISCUSSION ........................................................................................................44

   Interpretation of Results ............................................................44

   Limitations .......................................................................................49

   Implications and Directions for Future Research .........................50

APPENDIX: INFORMED CONSENT NOTICE .................................................................62

REFERENCES ..............................................................................................................................65
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequencies for Demographic Variables</td>
<td>53</td>
</tr>
<tr>
<td>2. Frequencies for Categorical Predictor Variables</td>
<td>54</td>
</tr>
<tr>
<td>3. Descriptive Statistics for Continuous Predictors</td>
<td>55</td>
</tr>
<tr>
<td>4. Descriptive Statistics for Outcome Variables</td>
<td>56</td>
</tr>
<tr>
<td>5. Intercorrelations among Demographic Variables</td>
<td>56</td>
</tr>
<tr>
<td>6. Associations between Demographic Variables and Variables of Interest</td>
<td>57</td>
</tr>
<tr>
<td>7. Associations Among Predictor Variables</td>
<td>58</td>
</tr>
<tr>
<td>8. Results of Hypothesis Tests</td>
<td>59</td>
</tr>
<tr>
<td>9. Results of Research Question Analyses</td>
<td>60</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

The prevalence of depression in the United States has more than doubled over the past few decades (Compton, Conway, Stinson & Grant, 2006), an increase that cannot be fully explained by greater awareness or higher rates of diagnosis. This rise in depression has led researchers and practitioners to question the influences behind the increase so as to understand how depression can be addressed and treated. Social factors are widely regarded as strong influences on depression. In particular, social support, or perceiving and/or receiving help or support from others, is thought to strongly influence the development and progression of depression (Dean & Ensel, 1982). Less established is the impact of providing support to others.

One way of providing support to others is through altruistic, empathetic, or prosocial behavior. Altruism in its various forms is known to provide positive outcomes to helpers. Research has established that engaging in altruistic activity can improve physical health and mental well-being (Post, 2005). Less is known about its impact on depression, and findings thus far have been mixed. The current study was designed to resolve the mixed findings on the altruism-depression relationship, as well as to explore the dynamics of this relationship in order to provide meaning as to why specifically these experiences might be related to each other. Having a better understanding of this relationship will shed light on how and/or why altruistic behavior may address or protect from depression. To further explain the current status of this area of study, the following sections will outline: a) social impacts on depression, b) definitions of altruism, c) empirical support for the benefits of altruism, including its positive relationship with mental and physical health, d) empirical evidence related to altruism’s relationship with
depression, e) the quandary of causality in this relationship and potential mediating variables, and f) remaining or currently unanswered questions in this area of research.

Social Risks for Depression

Although it is empirically evident that depression is influenced by various etiological risks, including biological and psychosocial elements (Luyten & Blatt, 2007; Luyten, Blatt, Van Houdenhove, & Corveleyn, 2006; Nydegger, 2008; Parker, Roy, Wilhelm, Mitchell, Austin, & Hadzi-Pavlovic, 1999; Schotte, Van Den Bossche, De Doncker, Claes, & Cosyns, 2006; Simons, Gordon, Monroe, & Thase, 1995), one must consider the distinct impact of social influences since the rise in depression prevalence appears in ways to be universal across demographic and medical factors.

The influence of social factors on depression is well established by research, but social risks can take many forms. Brown and Harris (1978) point out that relational loss and disappointment are central features of many life events that bring about depression. In fact, Brown and Harris identified several social risks for depression that involved relatedness or connectedness to others. Such risk factors include the death of or separation from a loved one, a life-threatening illness of someone close, and experiencing a major negative revelation about someone close that leads to loss of trust in a relationship. Research has also examined the impact of the individualistic culture of the United States in how it relates to the development of depression. In particular, the United States’ individualistic culture tends to isolate or even alienate individuals from one another due to the emphasis placed on oneself and one’s own achievements above others (Post, 2005). Levine (2007) noted that in societies where depression is less prevalent, there is typically less emphasis on technology and consumerism and more emphasis on family and community. Moreover, Scott, Ciarrochi, and Deane (2004) determined
that idiocentrism in participants was associated with smaller and less satisfying social support networks, as well as higher levels of hopelessness and suicide ideation.

Along this line, the specific social factor that strongly involves connection to others – social support – has stood out due to its particularly strong influence on depression. Consequently, the relationship between social support and depression has become a frequent focus of study. Out of this line of research has emerged the conclusion that social support can be an important buffer against depression in that it tends to prevent experiences of loss, disconnection, and isolation. Specifically, studies have shown that individuals with better perceived or actual social support are less likely to experience depression, whereas individuals who perceive they have few close relationships or that their relationships are inadequate are more likely to experience depression (Billings, Cronkite & Moos, 1983; Dean & Ensel, 1982; Dean, Lin, & Ensel, 1981). Also, Dean and Ensel (1982) found that among the social variables they evaluated (i.e., life events, social support, self-competence) social support was the most significant predictor of depression, regardless of age or gender.

As evidenced by the literature mentioned above, there is a clear and empirically-supported relationship between receiving social support and depression. However, much less research has evaluated the relationship between providing social support and depression. This line of research has asked the question – if receiving social support is beneficial for mental health and preventative for depression, does it follow that providing social support would also have the same protective effect (Brown et al., 2003; Thomas, 2010)? In terms of empirical support there is not yet a definite answer. Another important question to consider is that if this relationship can be established, what would be the mechanisms behind the positive influence of providing social support? On one side of the argument is the “social” aspect; that is, being in contact with
others buffers against depression regardless of the direction of the support (Thomas, 2010). On the other side of the argument is the positive outcome of the “support” function. That is, perhaps providing support gives individuals a sense of meaning/purpose/well-being that would aid feelings of depression such as worthlessness (Reismann, 1965; Weinstein & Ryan, 2010). To this end, it would seem to follow that providing any form of support – even beyond that which is social in nature – would protect the provider against depression due to its providing a sense of purpose. However, before addressing these questions it is necessary to determine what would qualify as providing social support or engaging in helping behavior.

Helping and Supporting Others

Behavior that exists for the purpose of helping or supporting others has been defined in many ways. Terms that have resulted include but are certainly not limited to selflessness, empathetic behavior, prosocial behavior, heroism, self-sacrifice, charity, benevolence, and altruism. Perhaps no one term can tie the nuances of such behavior together, but this study will focus on the term ‘altruism’ since it seems to come closest. Altruism involves the act or intention of helping others without regard for the self. More specific definitions will be discussed in a later section.

Altruism in itself has been widely researched, and we now understand situations in which it is likely to occur, people who are more likely to evidence it, and varying theories on why it occurs (Baston, 2011). It has less often been examined in the context of its clinical usefulness, which would be particularly advantageous given its potentially positive effect on mood. Currently, existing clinically-based research on altruism has focused on altruism’s influence on mental health in general, with fewer studies focusing specifically on the altruism-depression relationship. Furthermore, these studies have shown mixed findings and few firm
conclusions have been made. Thus, the aspects of the altruism-depression relationship are not yet clear. Even less clear are the specifics that would explain why the altruism-depression relationship would exist.

Clarifying the altruism-depression relationship and identifying the mechanisms behind it could provide significant clinical, as well as societal, benefits. As part of treatment, practitioners often encourage coping mechanisms to prevent or address depression. Treatment studies for depression have shown that behavioral activation significantly reduces the severity of depression (Dimidjian et al., 2006; Jacobson et al., 1996). Understanding mental health benefits of altruism could allow for another behavioral buffer against depression to be encouraged for patients suffering from depression. More broadly, considering the increasing evidence that depression appears to be a societal epidemic, such information could benefit the community at large.

Definitions of Altruism

As stated previously, altruism can be conceptualized in many ways. First coined by the French sociologist Comte, the original definition of altruism was simply “an unselfish regard for the welfare of others” (Wispe, 1978). Such a definition overlaps with many other similar terms, most notably including: a) empathy, which is closely associated with an altruistic attitude, and b) prosocial behavior, which is closely associated with altruistic behavior. Researchers have, however, differentiated altruism as a concept that goes beyond both empathy and prosocial behavior alone.

For instance, Baston (2011) defines altruism as, “a motivational state with the ultimate goal of increasing another’s welfare” (p. 20), and this author goes on to clarify components of this definition. Baston explains that the motivation must be goal-directed rather than impulsive, that there is only one goal involved (i.e., no hidden agendas), and that this goal must be focused
on the welfare of someone else rather than the self. Bar-Tal (1976) defines altruism as behavior that “(1) must be carried out voluntarily, (2) must aim to benefit another, and (3) must be carried out without expectation of a reward (p. 5).” Midlarsky (1968) differentiated altruism from other forms of aiding by clarifying that altruistic actions incur some cost to the individual and bring very little or nothing by way of gain relative to the magnitude of the investment. Walster and Piliavin (1972) believed altruism occurs ‘out of the goodness of one’s heart.’

When considering these definitions, it becomes more evident how strict definitions of altruism are said to differ from empathy and/or prosocial behavior. Altruism is thought to differ from empathy in that an individual engaging in altruism intends for an action to take place. However, some authors believe that empathy is an essential condition for altruistic behavior to occur (Aronfreed, 1970; Cohen, 1972). This raises the question as to whether empathetic attitudes that promote altruistic behavior would qualify as a form of altruism. Certainly they are strongly related.

Altruism is said to differ from prosocial behavior in that the intended action is primarily meant to benefit the receiver rather than the person performing it. Prosocial behavior can include any action that helps another, regardless of the motive. Bar-Tal (1976) makes an important distinction between altruism and restitution, or behavior intended to reciprocate or compensate for some previous behavior, in that altruistic outcomes would not include any personal benefits. Baston (2011) differentiates altruistic behavior from behavior performed in order to reduce aversive arousal caused by witnessing the suffering of another. Baston also goes so far as to assert that behavior that provides any benefit to the helper, even an improvement in mood or well-being, is not purely altruistic. Andreoni (1990) proposes a similar idea by differentiating “pure altruism” from “impure altruism.” According to Andreoni, pure altruism involves helping
others for the benefit of society and impure altruism involves helping others because it is personally rewarding. However, such strict conceptualizations of altruistic behavior may rule out actions that are motivationally altruistic, but have added positive benefits for the helper. While these perceived potential benefits may be incentives for the altruistic behavior to take place, they are probably not the sole driving force behind altruistic behavior, and thus such types of altruism will not be overlooked in the current study. The perceived benefits of altruistic behavior will be discussed in the next section.

Differentiating rather than disregarding different types of attitudes and behaviors under the altruism umbrella might give indication of what could be behind its influence on depression. As such, this study will examine altruism in a broader context than that described by some of the authors who adhered to more strict motivationally-based definitions (Andreoni, 1990; Baston, 2011). However, altruistic/empathetic concerns or attitudes will be differentiated from altruistic/prosocial behavior. Of note, from this point forward the author will differentiate between altruistic activities and altruistic attitudes. When both are reported or assumed to take place, the term altruism will be used.

Benefits of Altruism

Many known benefits of engaging in altruistic activities are already empirically-established. They include both internal and external benefits. External benefits are discussed first.

External Benefits of Altruism

Externally, participation in altruistic activities is associated with improvements in one’s reputation, one’s genetic survival, and/or one’s social relationships. Hardy and Van Vugt (2006) conducted experiments that examined the relationship between altruistic activities and status.
hierarchies in high school and college students who were put into groups. They found that students who performed more altruistically during the experiment tended to enjoy higher status in the groups and were most often preferred as cooperative interaction partners, supporting the idea that “nice guys finish first” as opposed to last.

Evolutionary psychologists have attempted to explain some forms of altruism in terms of gene survival. The idea of kin selection explains that parents or other relatives may sacrifice their own interests in order to benefit their children or relatives and in doing so increase the likelihood that their genes or genes similar to theirs will continue to be passed down to subsequent generations (McAdams, 2009). Barrett, Dunbar and Lycett (2002) determined that the likelihood of altruistic activities increased as a function of the closeness of the blood relationship between the helper and the individual they helped. Thus, the benefit to the individual is that their genes survive even if they themselves do not.

There is evidence that altruism can increase cooperation and care in conflict situations, ultimately benefitting all involved parties. Through a ‘prisoner dilemma’ situation (originally created by Rapoport & Chammah, 1965), Baston and Ahmad (2001) found that inducing empathetic concern resulted in increased cooperation in participants who assumed they were competing with another participant. Consequently, even when participants believed they were in conflict with another participant, they were more likely to cooperate anyway because they felt empathy toward the other participant. To test this effect in real life situations, Galinsky et al. (2008) conducted experiments that examined altruistic activity in more realistic negotiations, such as a job interview or a purchasing negotiation. When empathetic concern was introduced, participants tended to give into negotiations that benefitted their opponent at cost to themselves.
Therefore, people who behave more altruistically may experience better cooperation in those with whom they interact.

Other evidence suggests that altruistic actions also benefit closer relationships, such as friendships and romantic partnerships. Crocker and Canvello (2008) found that college students who self-reported other-oriented, compassionate goals for their developing relationships also self-reported more closeness, support, and trust in their relationships. This would suggest that altruistic motives have the potential to increase the likelihood of gaining better social support for oneself, but causal direction from this study is not clear. In other studies that examined social support in romantic relationships, Feeney and Collins (2001, 2003) found that need-responsive social support by one partner was associated with less sadness and anxiety in the second partner as well as more positive ratings of relationship quality; but again, a causal relationship was not established.

**Internal Benefits of Altruism – Reduced Aggression**

Internally, altruism is associated with reduced aggression in the helper, better physical health, and improved well-being. Regarding reduced aggression, the research findings are mixed, but one study provides clear evidence that altruistic concern inhibits aggression and hostility. This study, by Harmon-Jones et al. (2004), assessed the effect of empathetic concern on anger-related left-frontal cortical electroencephalographic (EEG) activity as well as self-reported hostile attitudes. College students were induced to feel either high or low empathetic concern for a hypothetical student who was said to be suffering from multiple sclerosis. The participants were also asked to write an unrelated essay. Later, the hypothetical student provided either insulting feedback on the participants’ essay or neutral feedback. The EEG was performed immediately after the participants received this feedback. The results showed that participants in
the high empathetic concern group showed inhibited left-frontal cortical EEG activity (increases in this area are associated with aggressive behavior) and showed inhibited hostile attitudes toward the hypothetical student regardless of the type of feedback they received. Such results strongly suggest that empathetic concern can directly reduce the desire to act or feel aggressively. However, as discussed previously, empathetic concern does not fully encompass the concept or experience of altruism.

Internal Benefits of Altruism – Physical Health

A number of studies have shown that engagement in altruistic activities benefits physical health, though much of the evidence is circumstantial. In a longitudinal study, Moen, Dempster-McCain, and Williams (1993) found that after a 30 year period, 52% of women who did not belong to a volunteer organization had a major illness, compared to only 36% of women who did belong to one or more. Musick, Herzog, and House (1999) found similar results, determining that among adults 25 and older, moderate amounts of volunteerism were associated with lowered risk of death. This study brings up an important point noted by Post (2005) that too much altruism can have detrimental effects to the provider if the provider feels overwhelmed or overburdened. Musick et al. (1999) also noted that volunteering to the point of strain causes detriments that offset the benefits of the activity.

Perhaps in an effort to examine this effect, Oman et al. (1999) compared the effects of “high volunteerism” (volunteering for more than one helping organization), “moderate volunteerism” (volunteering for one helping organization) and no volunteerism in older adults. The researchers found that participants who volunteered for two or more organizations had a 63% lower likelihood of dying during the study compared to participants who did not volunteer at all. After controlling for a number of factors like age, gender, chronic conditions, physical
mobility, exercise, general health, social support, religious factors, and psychological status, the likelihood of mortality was still 44% better for volunteers. In fact, the authors found that volunteering was actually slightly more protective for those with high religious involvement and perceived social support, suggesting that these were mediating factors. They determined that any level of volunteering, high or moderate, reduced mortality by 60%, but only for weekly attenders of church services. Thus, there was little difference in mortality rates between high and moderate volunteers, but much difference between these groups and non-volunteers. Brown et al. (2003) found an association between reduced risk of dying and giving help, but found no association between receiving help and reduced death risk among older couples. Hence, these researchers found that altruism was protective against mortality, but social support was not. These researchers also controlled for a number of factors including health, health satisfaction, and health behaviors. Krause et al. (1999) determined that the beneficial health effects of altruism can also be seen in other cultures. These researchers found that older adults in Japan who provided more assistance to others were significantly more likely to report better physical health, but as this study was cross-sectional, no causal conclusions could be firmly made.

Though much of this research focused on older adults, health benefits among younger adults can also be seen. The study by Musick et al. (1999) examined participants 25 years or older and found the same protective effects on mortality. Ironson, Solomon, and Balbin (2002) compared the characteristics of long-term survivors with AIDS to individuals who were recently diagnosed with AIDS. They found that the long-term survivors were more likely to be spiritual or religious, but this effect was mediated by “helping others with HIV.” As such, it seemed that altruism accounted for the relationship between spirituality and long-term survival. A study by Zenmore and Pagano (2008) examined benefits of helpers in Alcoholics Anonymous (AA). The
researchers determined that helping behavior for members of AA was associated with better physical health as well as recovery from chemical dependency. Schwartz, Keyl, Marcum, and Bode (2009) found that providing help to family members was associated with better physical health for female teens but the same effect was not found for male teens.

Physical health benefits can also be seen following helping or caring that does not involve humans. Research has determined that caring for animals can lead to better physical health, less stress, lower blood pressure, and longer life (Allen, 2003; Dizon, Butler, & Koopman, 2007). Netting, Wilson, and New (1987) found that caring for companion animals was associated with health benefits for individuals in nursing homes and in prisons. However, the potential confound of “social” interaction and perceived support from the animals was not examined in these studies.

These studies show that altruism can provide or is at least associated with important health benefits, such as longer life and perception of better physical health. This effect can potentially be seen across ages and cultures, and appears to be independent of other factors like previous physical health and need for social connection (in most cases). Is the effect the same for mental health as well? The discussion now turns to associations between altruism and mental health.

Internal Benefits of Altruism – Mental Health

Mental health can be defined in a number of ways. Sometimes it is defined as a specific type of mental health, such as positive affect, self-efficacy, self-acceptance, or depression (discussed more extensively in the next section). It can also be defined more generally as well-being. The following section examines the positive mental health benefits of altruism according to the type of benefit examined.
Several studies have examined the association between altruism and positive affect or emotionality. Krueger, Hicks, and McGue (2001) found that altruism was associated with positive emotionality. Similarly, Dulin and Hill (2003) found that among lower income adults aged 65 and up altruism was associated with positive affect. This effect was still found after controlling for demographic variables, social support, and income.

A few studies have examined the relationship between altruism and life satisfaction. Dulin et al. (2001) examined outcomes among older adult, low income, community service providers who were paid to perform their community service. The authors found that participants who remained in community service for altruistic rather than economic reasons reported higher levels of life satisfaction. This study emphasized the importance of the motivational component of altruism by illustrating that altruistic activity performed for economic gain was not as satisfying. Similarly, Hunter and Lin (1980-1981) found that, after controlling for level of disability among participants, those who volunteered reported higher life satisfaction.

Positive mental health benefits are also seen among adolescents who perform altruism. Schwartz et al. (2009) found that altruism, divided into family helping and general helping, showed positive benefits based on gender for adolescents. For male adolescents, family helping was associated with positive social relations, purpose in life, and self-acceptance. For females general helping was associated with positive social relations and purpose in life. Benson et al. (2007) found that prosocial activities, such as community service, in adolescents were associated with thriving behaviors, such as school success, leadership, delaying gratification, and overcoming adversity.

Aspects of positive mental health involving improved self-perception have also been examined. Reismann (1965) found that providing support to others provides a strong likelihood
of improved self-image. Similarly, Wuthnow (1991) found a positive relationship between volunteering and self-esteem. In an experimental study, Weinstein and Ryan (2010) found that autonomous, or internally motivated, helping resulted in higher levels of positive affect, vitality, and self-esteem compared to controlled, or externally motivated, helping and no helping. A cohort study by Greenfield (2009) found that participants who felt an obligation to help others were less likely to show decline in personal growth and self-acceptance later in life. This study would suggest that merely possessing altruistic attitudes can be beneficial for mental health.

As with physical health, many studies have shown that altruism is also associated with improved mental health, even after controlling for outside factors. However, in relation to depression, such studies would more likely indicate a buffering effect or indirect relationship with depression rather than support a direct relationship between altruism and depression. Yet, studies have seemed to show that altruism is in fact related specifically to depression, even though evidence is minimal.

Altruism and Depression

The current status of research on the relationship between altruism and depression does not appear to be as clear as the associations described so far. Several studies do identify a positive relationship between altruism and lower depression rates. Musick and Wilson (2003) examined several hypotheses related to the relationship between volunteering and depression including the mediating effect of psychological (providing meaning, sense of purpose) and social (social support) variables, the moderating effect of age (i.e., the elderly will benefit more greatly from volunteering), the effect of the duration of volunteering, and the effect of type of volunteering (religious or secular based). Depression was measured using the CES-D and volunteering was measured by asking about the type, frequency, and duration of volunteering.
done by the participants. Data was collected over three periods to examine change. The authors found that volunteering was associated with lower depression levels for individuals over 65 years of age, but an effect that was not found among the younger samples assessed. Also, among the elderly sample, volunteering for religious causes was more beneficial than volunteering for secular causes. The authors believed that these effects may be explained by the fact that volunteering may be more helpful for someone whose roles have been diminished. In another study that examined older adults, Brown et al. (2008) found that among bereaved participants who had experienced high loss-related grief, helping behavior was associated with an accelerated decline over time in depressive symptoms for the helper. This effect was not explained by social or demographic factors.

A study by Schwartz et al. (2003) examined helping behaviors among members (of various ages) of Presbyterian churches across the United States. The authors showed that after adjusting for age, gender, general health, income, stressful life events, religious coping, and asking God for healing, giving help was more significantly associated with lower depression and anxiety than was receiving help. However, these authors added an important caveat that was previously mentioned. In this study, feeling overwhelmed by the demands of others was more strongly associated with poor mental health than was moderate altruism with positive mental health. This illustrates the potential importance of the level of altruism and its differential effect on depression. Other researchers have indicated similar caveats, including characteristics of the people being helped (Coyne & Smith, 1991), the length of altruistic activity (Windsor, Anstey, & Rodgers, 2008), and the setting where helping behavior takes place (Brunier et al., 2002). These caveats and others will be discussed in more detail in the next section.
The role of altruism has also been examined in treatment studies for depression. Spek et al. (2008) examined characteristics that might predict treatment outcome of group and internet-based interventions for sub-threshold depression. The authors found that in the group intervention, participants with higher altruism scores showed significantly reduced Beck Depression Inventory scores after treatment. This effect was not seen in the internet-based intervention. Mason (2004) examined the effect of prosocial behavior as an adjunct to short-term psychotherapy for depression for college students. Groups included participants who engaged in therapy and prosocial behaviors and participants who engaged in therapy alone. The results showed that participants who engaged in adjunct prosocial behaviors showed slightly fewer depression symptoms, but this effect was not significant. This may have been due to low sample sizes for the groups (therapy + prosocial behaviors = 24, therapy alone = 16). As such, the magnitude of what such results would mean should not be overlooked.

The effect of altruism on depression in adolescents has also been examined. The Commission on Children at Risk (2003) found that among adolescents, helping behavior contributed to diminished depression rates. The study by Schwartz et al. (2009) showed similar effects (increased well-being and self-acceptance) but did not specifically address depression as an outcome for the adolescents in their study.

Not all associations between altruism and depression have shown the positive benefit of altruism. Some previously mentioned studies (Schwartz et al., 2003) showed the detrimental effect of altruism if it places too much burden on the caregiver. Fujiwara (2007) examined associations between altruistic behaviors and major depression in adults aged 25-74. Altruistic behaviors were examined based on a self-report survey and major depression was examined based on the Composite International Diagnostic Interview (CIDI). After controlling for
demographic variables like age, gender, marital status, and working status, the author found that altruistic behaviors were significantly correlated with higher levels of major depression. As this study was cross-sectional, a causal relationship could not be established. This points to an important caveat among much of the research presented so far, discussed next.

The Quandary of Causality

Several of the studies that have been presented were cross-sectional. Thus, based on the research presented so far, it is difficult to establish that altruism has an effect on depression rather than the effect being the other way around. In fact, some researchers have conceptualized this relationship in terms of depression causing lowered altruism. Morris and Kanfer (1983) believed that negative mood states (specifically depression) would negatively affect altruistic behavior. Altruistic behavior was measured based on questions generated by the researchers that assessed the incidence of altruistic activities, such as donating money to charity. The authors did not find the predicted effect – depressed and non-depressed participants did not show differences in altruistic behavior. However, these groups did differ on altruistic standards (degree to which participants thought they should help others), with depressed participants showing significantly higher altruistic standards. This study brings up a potential moderating effect of the altruism-depression relationship – perhaps depression results when one’s altruistic standards do not match their altruistic behavior, creating unresolved cognitive dissonance.

Studies that examined biological outcomes following altruism may provide indication of the causal nature of this relationship. Luks (1988) identified a “helper’s high” among people who volunteered. The author determined that two-thirds of helpers reported a distinct physical sensation associated with helping. Among these people, about 50% reported a “high” feeling, 43% felt stronger and more energetic, 28% felt warm, 22% felt calmer and less depressed, 21%
experienced greater self-worth, and 13% experienced fewer headaches and pains. Moll et al. (2006) examined physiological responses after charitable giving. They determined that costly donations to charities are associated with an activation of an area in the brain involving social bonding and attachment that regulates oxytocin, a hormone that depresses stress (HPA) activity. These studies are promising, but none so far have examined altruism’s effect on the biological processes associated with depression.

Other variables have also been mentioned that may mediate or moderate the relationship between altruism and depression, most notably psychological factors, such as the sense of purpose or meaning altruism might give someone, and social factors, such as the social support someone might receive due to the fact that they are engaging with others by helping them (Musick & Wilson, 2003). Other factors include outside motivations for behaving altruistically. Musick and Wilson (2003) determined that religious-based altruism had a stronger impact on mental health than secular-based altruism, perhaps because aligning more closely with one’s religious beliefs reduces negative feelings. Similarly, people might behave altruistically for social desirability reasons, and doing so reduces negative feelings or worries involving social rejection.

Unresolved Issues

From the research, it seems clear that there is some kind of relationship between altruism and depression. However, as illustrated, many unresolved questions still exist that make the relationship between altruism and depression less than clear. These unresolved questions do not aid in allowing for altruism to be considered as a method of addressing or preventing depression, and should be addressed in order for this to occur.
Musick and Wilson (2003) raised a number of still unanswered issues regarding this relationship. They first identified causal issues and mediating or moderating factors that would affect how we think about the direction or directness of the relationship, factors that were discussed in the previous section. Therefore, it will be important to establish whether these factors do in fact seem to mediate or moderate the relationship between altruism and depression.

The authors also pointed out several areas where the data are still unclear, including a potential threshold effect wherein too much altruism is no longer beneficial, the question of how much motivation to engage in altruism is necessary for positive benefits to occur, and if the type of altruistic activity matters. These issues should also be addressed. Although a threshold for the positive impact of altruism has been supported in research, it is not clear what this threshold is, either in terms of frequency, duration, or intensity.

Motivation for altruism could mediate or moderate its relationship with depression but also may go beyond that. If one is motivated to behave altruistically for knowingly egoistic reasons, should the resulting behavior even be considered altruism? Andreoni (1990) theorized that altruistic activities performed for egoistic reasons are more accurately defined as benevolent activities. Is benevolence what is actually behind the relationship between altruism and depression?

The impact of the type of altruistic activity brings up a significant weakness in the existing literature. Altruism has not been consistently measured, perhaps because operational definitions have remained too strict, narrow, or specific. Many studies focused on the effects of volunteerism, several focused on providing social support to friends, family or the community, and some focused on altruistic attitudes regardless of activity. The problem with focusing on a
specific type of altruism (i.e., volunteering) is that it would not capture other altruistic activity or attitudes that might also be beneficial, such as unorganized or spontaneous altruistic acts.

Overall, a number of issues remain to be clarified in order for altruism to be considered a protecting factor or treatment for depression. This study was designed to resolve the presented issues so that the mechanisms behind altruism’s potential effect on depression can be better understood. If outside variables better predict altruism’s relationship with depression, then it is these that should be of focus when examining treatments or preventive methods for addressing depression. If an altruism-depression relationship exists, but is contingent on certain factors, these factors must be identified so that they could be considered if altruism is to be used to aid in treating or preventing depression. Further, if this relationship exists, we must consider how altruistic motivation and/or behaviors might fit into a treatment plan, especially for those who experience or are at risk for depression.

The Present Study

The current study was designed to answer the following general question: what factors might influence the relationship between altruism and depression? Answering this question adequately will allow for a better understanding of the relationship, and open new avenues for exploring how altruism can address depression. Several factors were examined. First, the impact of the frequency (i.e., how many time altruistic behaviors performed per week/month/year), and duration (i.e., how many consecutive years were behaviors performed) of altruism on depression were assessed. These factors have been inconsistently examined in the literature thus far and warranted clarification, especially with regard to their relationship with depression specifically. Second, the potential sense of overburden that altruism might cause was examined with regard to its possibly negative influence on depression. Sense of overburden has
been identified as a possible moderating influence in the relationship between altruism and positive outcomes (Post, 2005; Schwartz et al., 2003). The current study evaluated whether this moderating influence is also seen in the altruism-depression relationship. Finally, the potential moderating influence of the social benefits (i.e., social support) of altruism, and the mediating influence of the psychological benefits (i.e., life satisfaction, sense of purpose) of altruism were examined. These factors were pointed out by Musick and Wilson (2003) as further areas of study that would help explain altruism’s positive influence.

**Hypotheses**

To this end, the current study evaluated hypotheses involving these factors in order to provide some clarity beyond what the current literature offers. The hypotheses were as follows:

1. More frequent engagement in altruistic activities is significantly associated with lower levels of depression, after adjusting for possible confounding variables like demographic factors and health status.

2. Longer duration of engagement in altruistic activities is significantly associated with lower levels of depression, after adjusting for possible confounding variables like demographic factors and health status.

3. Feeling overburdened in altruistic activities moderates the relationship between engagement in altruistic activities and depression such that engagement in altruistic activities that are perceived as overburdening is associated with higher levels of depression.

4. Level of social interaction moderates the relationship between altruistic activities and depression such that altruistic activities involving direct contact with people are
associated more strongly with lower levels of depression in participants than altruistic activities that do not involve direct contact with people.

5. Psychological factors such as enhanced life satisfaction and enhanced sense of purpose or meaning in life mediate the relationship between altruistic activities and depression.

**Exploratory Research Questions**

Several unresolved questions remain in the literature. These involve aspects of altruistic behavior that might differentially influence depression outcome. As such, the current study evaluated the following exploratory research questions:

Research Question 1: Are there differences in levels of depression based on the motivation for behaving altruistically? In particular:

1A. Are there differences in depression between people who are compensated in any way for performing altruistic activities and people who voluntarily perform altruistic activities?

1B. Are there differences in depression between altruistic activities that are done without regard for what others will think of the helper and altruistic activities that are done with regard to what others will think of the helper?

1C. Are there differences in depression between people who perform altruistic activities for religious reasons and people who perform altruistic activities for non-religious reasons?

Research Question 2: No study has yet examined differences in outcomes between altruistic activities involving humans and altruistic activities involving animals. Are there any noticeable differences in depression?
Research Question 3: No study has yet examined differences in outcomes among altruistic activities based on the targets of altruism (i.e., family, acquaintances, strangers).
Are there any noticeable differences in depression?

Research Question 4: Is increased engagement in altruistic activities associated with lower levels of any particular symptoms of depression?
CHAPTER II

METHOD

Participants

The sample consisted of 266 undergraduate student participants from the University of North Texas and 37 participants from the surrounding urban community for a total sample of 303 participants. Table 1 presents demographic characteristics of the sample. The sample included 207 women (68.3%) and 96 men (31.7%), with participants’ age averaging 24 years (5% trimmed mean = 22, SD = 10.32, range = 18-77). The majority of participants identified as Anglo/Caucasian (56.4%), with 19.8% identifying as Hispanic/Latino, 11.6% identifying as African American, 6.9% identifying as Asian/Pacific Islander, 4.0% identifying as Biracial, 1.0% identifying as Middle Eastern, and 0.3% identifying as African. The majority of participants were single (58.1%), with 30.7% being in a committed relationship, 9.9% being married, and 1.3% being divorced, separated, or widowed. Educationally, 9.9% of participants had only high school degrees, 62.4% of participants had completed some college, 15.9% of participants had associates or technical degrees (participants with some college, associates degrees, and technical degrees were combined into one group and analyzed as such), 6.6% of participants had bachelor’s degrees, and 5.3% of participants had masters or doctoral level degrees. In terms of employment status, 43.2% of participants were not employed, 42.6% of participants were employed part-time, 9.6% of participants were employed full time, and 4.6% of participants were self-employed.

Overall, demographic analyses revealed a diverse sample. Participants were also asked about the presence of medical or psychological conditions. Descriptive analyses showed that
17.8% of participants identified that they were diagnosed with medical conditions and 11.6% of
participants identified that they were diagnosed with psychological or emotional conditions.

Participants were recruited through undergraduate psychology classes requiring SONA
credit for participation in research projects, as well as through flyers and emails dispersed to
members and organizations of the Denton, Dallas, and Fort Worth, TX communities asking for
assistance in completing university-supported research. Community service organizations were
targeted for recruitment so as to attain an adequate sample of participants who engage in
altruistic activities. Members of the community who were not associated with community
service organizations were also recruited through flyers posted around the community.

Inclusion criteria involved the following: 1) participants were at least eighteen years of
age; 2) participants were able to read and comprehend English; and 3) participants had access to
a computer and the internet, and d) participants demonstrated willingness to provide informed
consent.

Measures

Participants completed an online questionnaire that included a demographics section, an
altruistic activities inventory entitled the General Inventory of Volunteer Experiences (GIVE)
created for the current study’s purposes, open ended questions related to altruistic activities, the
Prosocial Tendencies Measure (PTM), and the Inventory of Depressive Symptomatology – Self
Report (IDS-SR). The PTM and IDS-SR are in the public domain and permission to reproduce
the measure was not required.

General Inventory of Volunteer Experiences (GIVE)

Much of the past research that has examined altruistic behavior has assessed current
altruistic or volunteering activities by either a positive or negative indication that these activities
were recently performed (Brown, 2003; Schwartz, 2003; Wilson & Musick, 2003), or by a
general and often vague indicator of time spent engaged in these activities (Musick & Wilson,
2003; Thoits & Hewitt, 2001). As these types of assessments do not adequately address the
breadth and depth of the current study’s questions, a new measure entitled the General Inventory
of Volunteer Experiences (GIVE) was created. The GIVE evaluates 33 volunteering/altruistic
activities that cover a wide variety of experiences, with the option of providing additional
information on experiences not already covered. The measure is introduced with the following
statement:

Many people are involved in activities that help someone besides themselves. This has
been called many things, like altruism, benevolence, volunteering, or just “helping
people.” What activities have you done or been a part of over the last year that fit this
description? Please answer the related questions for each activity you identify.

Experiences evaluated included but were not limited to volunteering with community service,
non-profit, or religious organizations or charities; volunteering with health or crisis
organizations; donating money, food, clothes, items, blood, or organs; providing help, support, or
money to family, friends, or strangers; performing child care or care to animals; and applying job
skills or teaching/mentoring. Participants first identified whether they engaged in each activity
listed over the past year. For each positive identification, a series of questions further delineated
participants’ experiences while engaged in the activity. These questions are outlined below.

To assess level of involvement in each altruistic activity, participants reported the
frequency of their involvement over the last year on the following scale: 1-2 times the past year,
1-2 times every 6 months, 1-2 times every 3 months, 1-4 times a month, 1-2 times a week.
Participants also identified the number of years altogether they engaged in each activity on the
following scale: 1-2 years, 3-5 years, 5-7 years, 7-10 years, more than 10 years. Frequency of performing activities and duration were averaged over all activities, standardized, and used as variables for Hypotheses 1 and 2 respectively. The $z$-scores for each were averaged to attain one variable indicating level of engagement in altruistic activities that was used for Hypotheses 3, 4, and 5 and Research Question 4.

The extent to which the altruistic activities involved others, as well as the types of others involved, were determined through the GIVE. The following questions were asked for each activity: “To what extent does this involve direct (in person) contact with the people intended to be helped?” and “To what extent does this involve direct (in person) contact with other volunteers or organization staff?” Participants responded on a 10 point scale indicating the proportion of time their activities involved others and the others they helped, with $0 = \text{no direct contact}$ and $10 = 100\% \text{ direct contact}$. The following question was utilized to identify relationships with those participants helped: “Who have you helped through this activity? Please check all that apply: family, friends, acquaintances, colleagues, general community, strangers, animals, unknown, other.” Answers for the two questions related to involvement with others were averaged over all activities and standardized. The resulting two variables were then averaged to create one variable relating to level of involvement with others, which was used for Hypothesis 4. Several variables were created from the question regarding who was helped through the activities. Participants who had engaged in any activities that involved helping animals were identified for Research Question 2. The number of activities involving helping family or friends was summed for each participant, as were the number of activities involving helping acquaintances or colleagues and the number of activities involving helping strangers or unknown parties. These three variables, now on continuous scales, were used for Research
Question 3. Participants also described the people they helped through each activity based on the following two options: “The people I have helped are similar to me in important ways or have had similar experiences as me” or “The people I have helped are different from me in important ways or have had different experiences than me.”

Participants identified the extent to which each altruistic activity in which they engaged overburdened them. Schwartz et al. (2003) have been the only authors to operationalize this concept and did so within the context of church-oriented altruism. In the GIVE, the following statement was rated for each activity participants identified: “Participating in this activity causes me stress and makes me feel overwhelmed.” This statement was rated on a 7-point Likert scale with the following anchors: strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, strongly agree. Scores on each item were averaged and the resulting variable was standardized to attain one scale score (extent of feeling overburdened scale) that was used for Hypothesis 3.

In order to gauge the extent to which engagement in the altruistic activities affected life satisfaction and sense of purpose, the following statements were rated for each activity participants identified: “I am more satisfied with my life in part because of this activity” and “In part because of this activity, I have discovered a satisfying new purpose in life.” These statements were based on a statement from the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) and a statement from the Purpose in Life Test (PIL; Crumbaugh & Maholick, 1964; Crumbaugh, & Maholick, 1981), both of which have shown good reliability and validity (Burgess-Wells, Bush & Marshall, 2002; Meier & Edwards, 1974; Pavot & Diener, 2009; Pavot, Diener, Colvin, & Sandvik, 1991; Reker, 1977; Sarvimaki & Stenbock-Hult, 2000). These statements were rated on a 7-point Likert scale with the following
anchors: strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, strongly agree. Scores on each item were averaged and the resulting variables were standardized to attain two scale scores (life satisfaction and purpose). These scales were averaged into one variable, which was used for Hypothesis 5.

Participants identified their motivations for engaging in altruistic activities through several open-ended questions asked at the end of the GIVE. The following statement introduced the open-ended questions:

Consider all of the activities you just identified over the past year, including any extra activities that you provided, when answering the following questions:

The following open-ended questions were then asked: “What led you to engage in the activities you listed,” “Why did/do you continue these activities,” “If you stopped an activity, why did you stop,” and “What did/do you like about doing these activities,” “Did/do your friends and acquaintances affect why you chose to participate in these activities? Please explain,” “Did/do your friends and acquaintances affect why you continue to participate in these activities? Please explain,” “Did you receive any money, gifts, or other rewards for these activities? If yes, please explain. (For example, do you perform any of these activities because they are part of your job?) What activities did you receive money, gifts, or other rewards for doing,” and “Did you receive any other type of compensation for these activities? (For example, was completing community service part of a court requirement?) If yes, please explain.” Participants’ responses from the first two questions were coded based on any mention of religious content. Final coding was dichotomous with the categories: ‘religiously motivated’ and ‘not religiously motivated.’ Participants whose responses on the first two open-ended questions included mention of religious content were identified as ‘religiously motivated.’ This variable was used for Research Question
1C. The final two questions regarding compensation were dichotomously coded with participants who answered positively to either of the two questions identified as ‘compensated.’ All other participants were identified as ‘not compensated.’ This variable was used for Research Question 1A.

**Prosocial Tendencies Measure (PTM)**

As an alternative method of examining possible motives for altruistic behavior, the Prosocial Tendencies Measure (PTM) was utilized (Carlo & Randall, 2002). Items for the PTM were based on previously developed prosocial disposition and behavior scales (Johnson et al., 1989; Rushton et al., 1981) and on responses to prosocial moral reasoning interviews with college-aged students (Eisenberg et al., 1995). The PTM is composed of 23 items and contains six subscales: public (4 items, Cronbach’s $\alpha = 0.84$), anonymous (5 items, Cronbach’s $\alpha = 0.83$), dire (3 items, Cronbach’s $\alpha = 0.74$), emotional (4 items, Cronbach’s $\alpha = 0.84$), compliant (2 items, Cronbach’s $\alpha = 0.82$), and altruism (5 items, Cronbach’s $\alpha = 0.81$). Reported Cronbach’s $\alpha$’s are from the current study. The PTM showed good validity and reliability (Carlo & Randall, 2002). Participants rated the extent to which statements described them on a 5-point Likert scale with the following anchors: *does not describe me at all*, *describes me a little*, *somewhat describes me now*, *describes me well*, *describes me greatly*. The six subscales were created, and the altruism subscale was used for Research Questions 1A and 1B and the public subscale was used for Research Question 1B.

**Depression**

Depression was assessed using the Inventory of Depressive Symptomatology (IDS). The IDS was developed by Rush et al. (1986, 1996) to measure the presence and severity of depressive symptoms according to DSM-IV criteria. This study utilized the IDS Self-Report...
form (IDS-SR). The IDS-SR consists of 30 items that rank the frequency and severity of individuals’ depressive symptoms. Each item is rated on a 4-point Likert scale with differing anchors for each item. Scores on the IDS-SR range from 0 - 84, with the following suggested cut off scores: 0 – 11 = normal; 12 – 23 = mildly depressed; 24 – 36 = moderately depressed; 37 – 46 = moderately to severely depressed; and 47 – 84 = severely depressed (Rush et al., 2008).

IDS-SR items were summed for each participant to create a depression severity score, which was used as the primary outcome for hypothesis testing. Reliability analysis revealed strong reliability for the IDS-SR in this study (30 items, Cronbach’s $\alpha = .86$). Three subscales for the IDS-SR were created which were based on a factor analysis of the IDS (Wardenaar, et al., 2010). The subscales were mood/cognitive symptoms (16 items, Cronbach’s $\alpha = .86$), anxiety/somatic symptoms (10 items, Cronbach’s $\alpha = .63$), and sleep symptoms (4 items, Cronbach’s $\alpha = .43$).

These three subscales were used as the outcomes for Research Question 4.

Design and Procedure

Prior to participant recruitment and data collection, this study was submitted and approved by the Institutional Review Board (IRB) of the University of North Texas. IRB approval was obtained in February 2012.

Following recruitment, all participants were informed of the objectives of the study and informed consent was obtained (see the appendix). Those who qualified for the study and agreed to participate were directed to a web address created through Limeservice (an online survey service) in order to complete the questionnaire, which included all of the information mentioned above. The survey ensured the confidentiality of participants by being hosted on a secure site and clearly asking participants not to type any part of their name. The participants submitted the
survey online without identifying information. Data collection took place from March 2012 to August 2012.

Most of the participants recruited through the university were given SONA credit to compensate their participation. All participants were given the option of entering into a raffle so as to provide further incentive for participation. One out of every 25 participants was randomly selected to receive a $25 Amazon gift certificate. To ensure confidentiality, participants’ identifying information obtained for the raffle was not linked with their responses to the questionnaire.
CHAPTER III

RESULTS

Descriptive Analyses

The sample originally included 321 participants. This sample set was checked for missing data and it was determined that 18 participants failed to answer more than 90% of items on the questionnaire. These participants were excluded from further data analysis for lack of adequate data, leaving a functional $N$ of 303 participants.

Histograms and tests of normality revealed positively skewed distributions for several altruistic activity variables and dependent variables, indicating that most participants fell on the lower end of the potential range for altruistic activities performed, frequency and duration of engaging in altruistic activities, and severity of depression. The positive skew for altruistic variables was expected given that the GIVE covered a vast number of activities of which most participants were likely to endorse only a few, and given that statistics show only about 27% of the U.S. population formally volunteers (Bureau of Labor Statistics, 2011). The positive skew for depression variables was also expected given that the sample appears to be representative of the general population and should therefore follow the national prevalence rate of depression (~20%). Thus, variables were not transformed to reflect more normal distributions. Table 2 presents frequencies for categorical predictor variables, Table 3 presents raw score means and standard deviations for continuous predictor variables, and Table 4 presents raw score means and standard deviations for dependent variables.

Associations Among Demographic Variables

Bivariate, point-biserial, and phi ($\Phi$) correlations were conducted to examine associations among the continuous/ordinal demographic variables – age, gender (coded 1 = women, 2 = men),
level of education (coded 1 = 8th grade or less, 2 = some high school, 3 = high school graduate, 4 = GED, 5 = some college, associates degree, or technical degree, 6 = bachelor’s degree, 7 = master’s degree, 8 = doctoral degree), presence of medical conditions (coded 0 = no diagnosed condition identified, 1 = diagnosed condition identified), and presence of psychological/emotional conditions (coded 0 = no diagnosed condition identified, 1 = diagnosed condition identified). Table 5 shows intercorrelations among these demographic variables. Age was positively correlated with level of education ($r = .42, p < .001$), and medical conditions ($r = .31, p < .001$), indicating that older respondents were more highly educated and more frequently diagnosed with medical conditions. Gender was negatively correlated with level of education ($r = -.17, p = .003$) indicating that women were more likely to be highly educated. Level of education was positively correlated with medical conditions ($r = .13, p = .03$), indicating that participants with higher levels of education were more likely to have medical conditions (though this is likely a function of age). Medical conditions and psychological/emotional conditions were positively correlated ($r = .16, p = .007$), indicating that participants with medical conditions were more likely to have psychological/emotional conditions.

Associations of Predictor and Outcome Variables with Demographics

Bivariate, point-biserial, and phi ($\Phi$) correlations, as well as one-way ANOVAs, were conducted to examine associations of predictor and outcome variables with demographic variables so as to determine if any of the demographic variables would need to be identified as controls in hypothesis testing. One-way ANOVAs revealed that ethnicity (coded 1 = African American, 2 = Anglo/Caucasian, 3 = Asian/Pacific Islander, 4 = Hispanic/Latino, 5 = Native American, 6 = Biracial, 7 = African, 8 = Middle Eastern), marital status (coded 1 = single, 2 = committed relationship, 3 = married, 4 = separated, 5 = divorced, 6 = widowed), and job status
were not significantly correlated with the variables of interest. Age, gender, and the presence of diagnosed medical conditions were related to a number of the predictor variables. Age in particular appeared to be significantly related to several of the predictor variables. Gender, the presence of diagnosed medical conditions, and the presence of diagnosed psychological conditions were related to the depression outcome variables. Age, gender, the presence of diagnosed medical conditions, and the presence of diagnosed psychological conditions were used as controls in hypothesis testing. Table 6 shows the associations of demographic variables with predictor and outcome variables.

**Associations Among Predictors**

Bivariate correlations were also conducted to examine associations among the predictor variables to determine relatedness. These associations are presented in Table 7. The correlations showed that frequency of engagement in altruistic activities was positively correlated with duration of engagement in altruistic activities, as well as level of engagement with those helped and other helpers. Duration of engagement in altruistic activities was also associated with level of engagement with those helped. Level of engagement with those helped and level of engagement with other helpers were positively correlated. Feeling overburdened by altruistic activities was negatively correlated with sense of life satisfaction and purpose gained from participation in altruistic activities. Level of engagement with other helpers was positively correlated with sense of life satisfaction and purpose gained from participation in altruistic activities. Life satisfaction and purpose were highly positively correlated.
Results of Hypothesis Tests

1. *More frequent engagement in altruistic activities is significantly associated with lower levels of depression, after adjusting for confounding variables like demographic factors and health status.*

Hypothesis 1 was analyzed using hierarchical multiple linear regression, with age, gender, medical conditions, and psychological conditions entered as control variables. Frequency of engagement in altruistic activities was entered as the independent variable and IDS-SR depression severity was entered as the dependent variable. The overall model was not statistically significant after adjusting for controls, $F$ change $(1, 279) = 2.20, p = .14$, and it accounted for only $1\%$ of the variance in depression severity (adjusted $R^2$ change $= .01$, small effect). Frequency of engagement in altruistic activities did not account for a significant portion of unique variance for the depression severity variable, $\beta = -.08, p = .14$.

2. *Longer duration of engagement in altruistic activities is significantly associated with lower levels of depression, after adjusting for confounding variables like demographic factors and health status.*

Hypothesis 2 was analyzed using hierarchical multiple linear regression, with age, gender, medical conditions, and psychological conditions entered as control variables. Duration of engagement in altruistic activities was entered as the independent variable and IDS-SR depression severity was entered as the dependent variable. The overall model was not statistically significant after adjusting for controls, $F$ change $(1, 278) = .554, p = .46$, and it accounted for only $.2\%$ of the variance in depression severity (adjusted $R^2$ change $= .002$, small effect). Duration of engagement in altruistic activities did not account for a significant portion of unique variance for the depression severity variable, $\beta = -.05, p = .46$. 
3. **Feeling overburdened in altruistic activity moderates the relationship between engagement in altruistic activities and depression such that engagement in altruistic activities that are perceived as overburdening is associated with higher levels of depression.**

Hypothesis 3 was analyzed according to the moderator model proposed by Baron and Kenny (1986) and used hierarchical multiple linear regression with age, gender, medical conditions, and psychological conditions entered as control variables. Level of engagement in altruistic activities (i.e., the average of frequency and duration), extent of feeling overburdened, and the interaction of these variables were entered as independent variables, and IDS-SR depression severity was entered as the dependent variable. The overall model was statistically significant after adjusting for controls, $F$ change $(3, 276) = 7.11, p < .001$, and it accounted for 6% of the variance in depression severity (adjusted $R^2$ change = .06, medium effect). Level of engagement in altruistic activities alone did not account for unique variance for the depression severity variable, $\beta = -.08, p = .14$. Sense of overburden created by engagement in altruistic activities alone accounted for a significant portion of unique variance for the depression severity variable, $\beta = .24, p < .001$, indicating that higher sense of overburden was associated with higher depression levels. The interaction term was not significant, $\beta = .07, p = .21$, showing that though sense of overburden significant predicts depression severity, it does not moderate the relationship between level of engagement in altruistic activities and depression severity.

4. **Level of social interaction moderates the relationship between altruism and depression such that altruistic activities involving direct contact with people will be associated more strongly with lower levels of depression in participants than altruistic activities that do not involve direct contact with people.**
Hypothesis 4 was analyzed according to the moderator model proposed by Baron and Kenny (1986) and used hierarchical multiple linear regression with age, gender, medical conditions, and psychological conditions entered as control variables. Level of engagement in altruistic activities (i.e., the average of frequency and duration), level of social interaction with others, and the interaction of these variables were entered as independent variables, and IDS-SR depression severity was entered as the dependent variable. The overall model was not statistically significant after adjusting for controls, $F$ change (3, 244) = 1.81, $p = .15$, and it accounted for 2% of the variance in depression severity (adjusted $R^2$ change = .02, small effect). Level of engagement in altruistic activities alone did not significantly account for unique variance for the depression severity variable, $\beta = -.02, p = .81$. Level of social interaction with others during altruistic activities alone significantly accounted for a portion of unique variance for the depression severity variable, $\beta = -.14, p = .03$, indicating that higher level of social engagement during altruistic activities was associated with lower depression levels. The interaction term was not significant, $\beta = -.01, p = .82$, showing that though level of social interaction during altruistic activities significantly predicted depression severity levels, it does not moderate the relationship between level of engagement in altruistic activities and depression severity.

5. **Psychological factors such as enhanced life satisfaction and enhanced sense of purpose or meaning in life mediate the relationship between altruistic behavior and depression.**

Hypothesis 5 was analyzed according to the mediator model proposed by Baron and Kenny (1986) and used hierarchical multiple linear regressions with age, gender, medical conditions, and psychological conditions entered as control variables. First, level of engagement in altruistic activities (i.e., the average of frequency and duration) was used to predict sense of
life satisfaction and purpose brought on by altruistic activities. Level of engagement was not found to significantly predict sense of life satisfaction and purpose, $F(1, 282) = 2.14, p = .15$, adjusted $R^2 = .004$. Second, level of engagement in altruistic activities was used to predict IDS-SR depression severity, and it was not significant, $F$ change $(1, 278) = 1.90, p = .17$, adjusted $R^2$ change = .01. Third, the final model with both level of engagement in altruistic activities and sense of life satisfaction and purpose gained was tested. The overall model was statistically significant after adjusting for controls, $F$ change $(2, 277) = 3.27, p = .04$, and it accounted for 2% of the variance in depression severity (adjusted $R^2$ change = .02, small effect). Level of engagement in altruistic activities alone did not significantly account for unique variance for the depression severity variable, $\beta = -.07, p = .21$. Sense of life satisfaction and purpose gained from altruistic activities alone significantly accounted for a portion of unique variance in the depression severity variable, $\beta = -.12, p = .03$, indicating that higher sense of life satisfaction and purpose gained from altruistic activities was significantly associated with lower depression levels. However, the mediation model was not supported. Results of the hypothesis tests are presented in Table 8.

Results of Exploratory Research Questions

Research Question 1: Are there differences in levels of depression based on the motivation for behaving altruistically? In particular:

1A. Are there differences in depression between people who are compensated in any way for performing altruistic activities and people who voluntarily perform altruistic activities?

Research Question 1A was analyzed using an independent samples $t$-test. Participants were divided into two groups: those who received compensation for performing altruistic activities and those who did not. This grouping variable was used as the independent variable
and IDS-SR depression severity was used as the dependent variable. The independent samples $t$-test revealed no significant differences in depression severity between groups, $t(298) = .21, p = .83$, compensated group $M = 14.36$, noncompensated group $M = 14.04$.

1B. Are there differences in depression between altruistic behavior that is done without regard for what others will think of the helper and altruistic behavior that is done with regard to what others will think of the helper?

Research Question 1B was analyzed using two linear regression analyses. The public subscale of the Prosocial Tendencies Measure was used as the predictor for one analysis and the altruism subscale was used as the predictor for the other analysis. IDS-SR depression severity was used as the dependent variable. Results showed that the PTM public subscale did not significantly predict depression severity, $F(1, 294) = 1.00, p = .32$, adjusted $R^2 = .00$, nor did the PTM altruism subscale, $F(1, 294) = 1.04, p = .31$, adjusted $R^2 = .00$.

1C. Are there differences in depression between people who perform altruistic activities for religious reasons and people who perform altruistic activities for non-religious reasons?

Research Question 1C was analyzed using an independent samples $t$-test. To confirm that general involvement in religious activities was not a confounding factor, a linear regression was performed with frequency of involvement in religious activities as the predictor and IDS-SR depression severity as the dependent variable prior to the $t$-test analysis. Frequency of involvement in religious activities did not significant predict IDS-SR depression sum, $F(1, 301) = 1.06, p = .30$. For the analysis of Research Question 1C, Participants were divided into two groups: those who identified religious reasons for performing altruistic activities and those who did not. This grouping variable was used as the independent variable and IDS-SR depression severity was used as the dependent variable. The Levene’s test for equality of variances was
significant \( F = 4.08, p = .045 \); thus, equal variances were not assumed. The independent samples \( t \)-test revealed significant differences in depression severity between groups, \( t (263) = -2.81, p = .008 \), religiously motivated group \( M = 10.83 \), not religiously motivated group \( M = 14.67 \). These results indicate that religious motivation for performing altruistic activities is associated with lower levels of depression.

*Other Results for Research Question 1*

For exploratory purposes, all subscales of the Prosocial Tendencies Measure were entered as predictors in a multiple linear regression with IDS-SR depression severity as the dependent variable. Results showed that the PTM emotional motivation subscale alone significantly predicted depression severity, \( \beta = .29, p = .001 \), showing, interestingly, that as emotional motivation for helping others increases, depression severity increases. All other predictors were not significant.

*Research Question 2: No study has yet examined differences in outcomes between altruistic activities involving humans and altruistic activities involving animals. Are there any noticeable differences in depression?*

Research Question 2 was analyzed using an independent samples \( t \)-test. Participants were divided into two groups: those who had engaged in any altruistic activities that involved animals and those who had not. This grouping variable was used as the independent variable and IDS-SR depression severity was used as the dependent variable. The independent samples \( t \)-test did not reveal significant differences in depression severity between groups, \( t(301) = -.05, p = .96 \), animal group \( M = 13.97 \), comparison group \( M = 14.04 \). These results indicate that depression levels are comparable between participants who worked with animals in their altruistic activities and participants who did not.
Research Question 3: No study has yet examined differences in outcomes among altruistic behavior based on the targets of altruism (i.e., family, acquaintances, strangers). Are there any noticeable differences?

Research Question 3 was analyzed using several multiple regressions. Three predictor variables were used, which each represented the number of times participants mentioned helping family/friends, acquaintances/colleagues, and strangers/unknown respectively. IDS-SR depression severity, sense of overburden, and sense of life satisfaction and purpose were used as the dependent variables. Results of the analysis with depression severity as the dependent variable did not produce significant results, $F(3, 297) = 1.35, p = .26$, adjusted $R^2 = .003$, indicating that the predictors did not significantly predict depression severity. Results of the analysis with sense of overburden as the dependent variable produced significant results, $F(3, 279) = 2.75, p = .04$, adjusted $R^2 = .02$, indicating that the types of persons helped significantly impacted sense of overburden felt by participants. An analysis of the proportion of unique variance accounted for revealed that the strangers/unknown variable was significant, $\beta = -.21, p = .005$, showing that higher frequency of helping strangers or unknown individuals was associated with lower sense of overburden. Results of the analysis with sense of life satisfaction and purpose as the dependent variable approached significance, $F(3, 279) = 2.29, p = .08$, adjusted $R^2 = .01$, indicating that the types of persons helped was minimally related to sense of life satisfaction and purpose felt by participants. An analysis of unique variance accounted for revealed that the family/friends variable was significant, $\beta = .20, p = .03$, showing that higher frequency of helping family or friends was associated with higher sense of life satisfaction and purpose.
Research Question 4: Is altruism associated with lower levels of any particular symptoms of depression?

For Research Question 4, symptoms of depression assessed on the IDS-SR were divided into three subscales according to symptom type – mood/cognition, anxiety/somatic, and sleep. Research Question 4 was analyzed using linear regression, with level of engagement in altruistic activities as the predictor variable for each analysis and the scores for each subscale of the IDS-SR acting as the dependent variables for separate analyses. Age, gender, medical conditions, and psychological conditions were entered as control variables. Results showed that level of engagement in altruistic activities did not significantly predict IDS mood/cognition severity after adjusting for controls, $F$ change (1, 278) = 2.23, $p = .14$, adjusted $R^2$ change = .01, nor did it significantly predict IDS anxiety/somatic symptoms, $F$ change (1, 278) = .38, $p = .54$, adjusted $R^2$ change = .001, or IDS sleep symptoms, $F$ change (1, 278) = .75, $p = .39$, adjusted $R^2$ change = .003.
CHAPTER IV
DISCUSSION

Interpretation of Results

Depression is an increasingly prevalent epidemic in the United States, characterized by diverse etiology and managed with multiple modes of prevention efforts, treatment, and maintenance of symptoms and recovery. The current study focused on the etiological vein of social influences on depression and examined the growing theory that just as receiving social support or help from others is beneficial to mental health and associated with less severe depression, so too may be providing support or help to others through altruistic behaviors. A mounting body of evidence supports the positive effects of altruism on mental and physical health (Post, 2005), and an increasing number of studies have examined the altruism-depression relationship specifically. The most recent studies in this area continue to add to the knowledge regarding this relationship, showing that older individuals at lower socioeconomic levels may benefit more emotionally from volunteering than those at the high end (Dulin, 2012), that while volunteering may be associated with lower levels of depression it does not necessarily predict trajectories of depression (Kim & Pai, 2010), and that self-esteem, self-efficacy, and social connectedness mediate the relationship between volunteering and well-being. Beyond these findings, a recent experimental study provided increased support of the causal influence of altruism on depression, showing that induced willingness to help others produced a decrease in negative affect (Yang & Chen, 2011).

The current study sought to further support the association between altruism and depression, as well as expand on holes evident in the literature related to the mechanisms that may explain the altruism-depression relationship and explore other potential factors that may
impact this relationship. The first main objective of the present study was to confirm hypotheses that the higher frequency or duration of altruism is significantly related to lowered depression severity, and that factors such as sense of overburden from performing altruistic activities, level of contact with others during altruistic activities, and sense of life satisfaction and purpose brought on by performing altruistic activities act as moderating or mediating influences on the altruism-depression relationship. The second main objective of the present study was to explore lesser examined factors that may also impact the altruism-depression relationship, such as motivations for behaving altruistically, the types of populations being helped, and certain types of depression symptoms that may be particularly affected by altruism. The third main objective of the present study, which was not initially laid out in the research proposal, became generating a measure that could adequately examine altruistic activities to the extent that was required for the current study’s purposes. Implications of this third objective are discussed further in a later section.

Hypotheses 1 and 2, that more frequent engagement in altruistic activities and longer duration of engagement in altruistic activities respectively are significantly associated with lower levels of depression, were not statistically supported.

Hypothesis 3, that feeling overburdened in altruistic activity moderates the relationship between engagement in altruistic activities and depression such that engagement in altruistic activities that are perceived as overburdening is associated with higher levels of depression, was partially supported. Sense of overburden through engagement in altruistic activities significantly predicted depression severity levels, lending confirmation to the results of previous studies that identified overburden as a moderator (Musick & Wilson, 2003; Schwartz, 2003). However, the moderation model in this study was not supported. A study by Windsor, Anstey, and Rogers
(2008) determined that only moderate amounts of altruistic behavior predicted well-being and low and high levels of altruistic activity did not show this association, indicating that sense of overburden impacted the positive effect of altruism directly because of the frequency of participation in altruistic activity. Perhaps sense of overburden from participating too frequently in altruistic activities and sense of overburden for other reasons are two different facets that should be assessed separately rather than in a model that includes frequency of altruistic participation. For instance, a person may feel overburdened by participating in altruistic activity if what they are doing is uncomfortable, outside of their skill level, or incites criticism from others. These experiences that lead to overburden would have nothing to do with frequency of participation. Thus, sense of overburden felt from participating in altruistic activities likely needs to be examined in more detail and in multiple ways.

Hypothesis 4, that level of social interaction moderates the relationship between altruism and depression such that altruistic activities involving direct contact with other helpers and those being helped will be associated more strongly with lower levels of depression in participants than altruistic activities that do not involve direct contact with people, was partially supported. Level of social interaction with others during altruistic activities significantly predicted depression severity such that as level of interaction with others increased, depression severity decreased, supporting previous findings related to this predictor (Musick & Wilson, 2003) and aligning with social interaction/support buffering theories of depression (Cohen & Wills, 1985). However, the moderation model was not supported.

Hypothesis 5, that psychological factors such as enhanced life satisfaction and enhanced sense of purpose or meaning in life mediate the relationship between altruistic behavior and depression, was partially supported. Sense of life satisfaction and purpose gained from
participation in altruistic activities significantly predicted depression severity such that as sense of life satisfaction and purpose increased, depression severity decreased, again confirming results from previous research (Musick & Wilson, 2003). Again, however, the mediation model was not supported.

Overall, results of hypothesis testing confirmed that psychological and social mechanisms appear related to how altruism may beneficially impact depression. Sense of overburden felt by participating in altruistic activities, level of social interaction while participating in altruistic activities, and sense of life satisfaction and purpose gained from participating in altruistic activities all significantly predicted depression severity scores in the expected directions. Level of engagement in altruistic activities, however, consistently did not predict depression severity. These findings would indicate that it is not the behaviors themselves that affect depression but rather what results from engaging in the behaviors.

Results of the research questions revealed significant findings as well. Results of Research Question 1C revealed that participants who were religiously motivated to participate in altruistic activities showed lower depression severity compared to participants who did not identify religious reasons for participating in altruistic activities. Prior to analysis of this research question, it was confirmed that general religious involvement was not a confounding factor. These results add to similar findings of past research that showed that religious-based altruism had a stronger impact on “mental health” than secular-based altruism (Musick & Wilson, 2003). Results of an added analyses based on Research Question 1 showed that the PTM emotional motivation subscale alone significantly predicted depression severity such that higher levels of emotional motivation for helping others are associated with higher depression severity. This may be another example of how feeling overburdened in altruistic behavior may
influence depression. Just as Windsor, Anstey, and Rogers (2008) found that there was a threshold for the psychologically beneficial effect of altruistic behavior, there may also be a threshold for the psychologically beneficial effect of emotional helping such that too high intensity of emotional helping may be psychologically harmful.

Results of Research Question 3 showed that helping strangers or unknown parties resulted in less sense of overburden compared to helping family/friends or acquaintances/colleagues. This may be explained by the following proposition – helping individuals in closer relationships to oneself may be perceived as more of an obligation than a choice. As such, this helping may not even be perceived as helping but rather as a requirement, possibly leading to feeling overburdened. Conversely, helping strangers or unknown parties is less likely to be perceived as an obligation and more likely to be perceived as a choice, thus preventing feelings of overburden. Research Question 3 results also showed that helping family or friends resulted in greater sense of life satisfaction and purpose. Just as helping individuals in less close relationships may be linked to less sense of overburden, these results may show the other end of the spectrum in that providing help to individuals in close relationships increases sense of life satisfaction and purpose more so than helping individuals in more distant relationships.

Taken together, results from hypothesis tests and research questions produced useful findings in providing evidence for the dynamics that relate to how altruism might positively affect depression. Findings from this study particularly highlight the underlying psychological and social processes that appear to work along with altruistic acts and, according to this study’s results, relate to depression more profoundly than altruistic behavior itself. The overarching pattern of the current study’s results seems to be that altruistic activities are more strongly
associated with depression when they are done for deeply meaningful reasons or provide meaningful outcomes related to values and beliefs. Specifically, values and beliefs related to religion and spirituality, to what makes the individual satisfied, to life purpose, and to the importance of supporting those closest to an individual were all related to lower depression levels.

One of the most important outcomes of this study, the creation of the General Inventory of Volunteer Experiences, came to fruition after the realization that adequate measures of altruism and its effects do not currently exist in the literature. Recent studies have also noted the deficit of satisfactory measurement in this area. For instance, Pashak and Laughter (2012) designed a self-report measure of “service-mindedness” for the very reason of filling “a gap in the literature” relating to altruistic attitudes and behavior (p. 183). Although the GIVE was tailored specifically to address the questions posed by the current study, it is a useful start in the progress toward empirically-sound measurement that covers the breadth and the depth of the experience of altruism.

Limitations

Although results of the current study provided important additional support to the growing literature that has examined altruism and its potentially positive impact on depression, limitations must be noted. These limitations relate to characteristics of the sample, characteristics of the assessment material, and the limits to inferring causality.

The sample, though fairly diverse in regard to ethnic representation, was primarily comprised of single, college-educated, young adult females. This limits its extrapolation to other populations, including individuals of lower educational or socioeconomic backgrounds, as well
as middle-aged and older individuals. Moreover, the majority of the sample was comprised of undergraduate students, whose outcomes may not generalize to the population at large.

Another limitation of the current study is the reliance upon self-report, which has the potential to lead to biases in reporting. Given that questions asked about behaviors generally thought to be positive and socially praised, participants’ response could have been founded in social desirability rather than honest reporting. The retrospective nature of questions regarding altruistic activities also could have caused response bias based on memory issues. This study attempted to minimize the potential problem of memory response bias by limiting reports of altruistic activities to the past year. Another potential problem related to the assessment materials of the current study is the lack of empirical support of the GIVE, a newly generated inventory, and the limited empirical support for the Prosocial Tendencies Measure, which was only validated through its development and has rarely been used in subsequent research. Despite their problems, these measures proved to be useful for the current study.

The current study’s assessment of recent altruistic activity and current depression present a limitation in what can be inferred in terms of causality. For a truly causal relationship to be established, a longitudinal study would have been necessary. Future research may utilize the GIVE in a longitudinal manner while measuring depression at multiple points so as to establish a more empirically tenable causal relationship between altruism and depression.

Implications and Directions for Future Research

Although the current study did not support a direct relationship between altruistic behavior and depression, what were supported were the factors that likely influence this relationship. This study showed that sense of overburden from participating in altruistic activities, level of social interaction with other helpers and those being helped, and sense of life
satisfaction and purpose gained from participating in altruistic activities were associated with differing depression severity. Religious motivation for helping and emotional motivation for helping also appear to be related to depression severity, and the types of individuals helped seems to have an association with differing psychological outcomes. Such results suggest that some link between altruism and depression exists, even if it was not quantified by this study. Perhaps this relationship need not be quantified. One of the more meaningful outcomes of this study was an examination of the reasons why participants engaged in altruistic activities and what they liked about doing these activities. One participant explained:

“In that moment I felt overwhelmed with motivation, I had the extra time and felt a weird obligatory sense of needing to help others, not only for the beneficiary benefits of "feeling good" but more so for the experience and human nature of it.”

Another participant described:

“I like to be kind and feel empathy and sympathy for others, especially if I have gone through similar trials and ordeals. I believe we all need to lift each other and help each other as life has its downs as well as ups.”

Another participant said, “I liked feeling that I had made a direct and positive impact on someone’s life.” Given these and other accounts, the psychological benefit of altruism seems apparent.

The current study produced other important outcomes that warrant further attention. First, this appears to be one of the only studies that has assessed altruistic behavior and its relationship with psychological health in a predominantly college sample. The majority of past research has focused on older populations. It would be useful to further examine altruistic behavior and its relation to mental health within a college population, given this population’s unique circumstances. For example, college students potentially have more time to devote to altruistic activities compared to full-time working individuals, but they also experience distinct
stressors, such as potential adjustment issues and academic pressures. Such experiences were not evaluated in the current study.

The original intention of the current study was to collect a larger community sample so as to evaluate the questions posed in a broadly representative sample. Evaluating the hypotheses and research questions of the current study within such a sample would be useful in delineating any differences between a community population and a college population, as well as a community population and a geriatric population (which has been the main focus of previous research).

As stated previously, the GIVE appears to be one of the first measures that comprehensively assesses altruistic behavior in a quantifiable manner. As the assessment of altruistic behavior seems to be an increasing area of empirical focus, continuing to refine assessment measures for evaluating altruism would be a useful endeavor. In future studies, the GIVE could be expanded and validated.

Altruism can be a highly meaningful experience that, while may not affect depression directly, provides individuals with positive thoughts, feelings, and beliefs that could potentially prevent depressive symptoms. As Schwartz (2010) describes:

“… reaching out to help others can fill an inner void in substantial and remarkable ways… on the whole I would say that altruistic behaviors hold great promise as interventions for all people and can be offered … simply…” (p. 161).

This researcher would agree with this idea and add that altruism has the potential to provide connectedness, satisfaction, and meaning to one’s life in a way that few other behaviors or interventions can.
Table 1

*Frequencies for Demographic Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>96</td>
<td>31.7%</td>
</tr>
<tr>
<td>Female</td>
<td>207</td>
<td>68.3%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo/Caucasian</td>
<td>171</td>
<td>56.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>60</td>
<td>19.8%</td>
</tr>
<tr>
<td>African American</td>
<td>35</td>
<td>11.6%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>21</td>
<td>6.9%</td>
</tr>
<tr>
<td>Biracial</td>
<td>12</td>
<td>4.0%</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>3</td>
<td>1.0%</td>
</tr>
<tr>
<td>African</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>176</td>
<td>58.1%</td>
</tr>
<tr>
<td>Committed Relationship</td>
<td>93</td>
<td>30.7%</td>
</tr>
<tr>
<td>Married</td>
<td>30</td>
<td>9.9%</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>4</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Degree</td>
<td>30</td>
<td>9.9%</td>
</tr>
<tr>
<td>Some College</td>
<td>189</td>
<td>62.4%</td>
</tr>
<tr>
<td>Associates or Technical Degree</td>
<td>48</td>
<td>15.9%</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>20</td>
<td>6.6%</td>
</tr>
<tr>
<td>Master’s Degree or higher</td>
<td>16</td>
<td>5.3%</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Employed</td>
<td>131</td>
<td>43.2%</td>
</tr>
<tr>
<td>Employed Part Time</td>
<td>129</td>
<td>42.6%</td>
</tr>
<tr>
<td>Employed Full Time</td>
<td>29</td>
<td>9.6%</td>
</tr>
<tr>
<td>Self Employed</td>
<td>14</td>
<td>4.6%</td>
</tr>
<tr>
<td><strong>Diagnosed with Medical Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54</td>
<td>17.8%</td>
</tr>
<tr>
<td>No</td>
<td>249</td>
<td>82.2%</td>
</tr>
<tr>
<td><strong>Diagnosed with Psych./Emotional Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>35</td>
<td>11.6%</td>
</tr>
<tr>
<td>No</td>
<td>268</td>
<td>88.4%</td>
</tr>
</tbody>
</table>
Table 2

*Frequencies for Categorical Predictor Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received any type of compensation for altruistic activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50</td>
<td>16.5%</td>
</tr>
<tr>
<td>No</td>
<td>250</td>
<td>82.5%</td>
</tr>
<tr>
<td>Religiously motivated to perform altruistic activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24</td>
<td>7.9%</td>
</tr>
<tr>
<td>No</td>
<td>241</td>
<td>79.5%</td>
</tr>
<tr>
<td>Altruistic activities involving animals were identified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>76</td>
<td>74.9%</td>
</tr>
<tr>
<td>No</td>
<td>227</td>
<td>25.1%</td>
</tr>
</tbody>
</table>
### Table 3

**Descriptive Statistics for Continuous Predictors**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Observed Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altruistic activities (sum; maximum value = 34)</td>
<td>6.39</td>
<td>4.95</td>
<td>33.00</td>
</tr>
<tr>
<td>Frequency of performing altruistic activities&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.73</td>
<td>1.03</td>
<td>5.00</td>
</tr>
<tr>
<td>Duration of performing altruistic activities&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.60</td>
<td>1.05</td>
<td>4.00</td>
</tr>
<tr>
<td>Sense of overburden from altruistic activities&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2.09</td>
<td>1.27</td>
<td>6.00</td>
</tr>
<tr>
<td>Sense of life satisfaction from altruistic activities&lt;sup&gt;c&lt;/sup&gt;</td>
<td>5.48</td>
<td>1.22</td>
<td>6.00</td>
</tr>
<tr>
<td>Sense of purpose from altruistic activities&lt;sup&gt;c&lt;/sup&gt;</td>
<td>4.71</td>
<td>1.45</td>
<td>6.00</td>
</tr>
<tr>
<td>Level of social engagement with those being helped through altruistic activities&lt;sup&gt;d&lt;/sup&gt;</td>
<td>6.45</td>
<td>2.48</td>
<td>10.00</td>
</tr>
<tr>
<td>Level of social engagement with other volunteers through altruistic activities&lt;sup&gt;d&lt;/sup&gt;</td>
<td>5.94</td>
<td>3.23</td>
<td>10.00</td>
</tr>
<tr>
<td>Mention of helping family/friends through altruistic activities (sum)</td>
<td>5.50</td>
<td>4.52</td>
<td>28.00</td>
</tr>
<tr>
<td>Mention of helping acquaintances/colleagues through altruistic activities (sum)</td>
<td>2.67</td>
<td>3.77</td>
<td>32.00</td>
</tr>
<tr>
<td>Mention of helping strangers/unknown through altruistic activities (sum)</td>
<td>3.49</td>
<td>5.26</td>
<td>56.00</td>
</tr>
<tr>
<td>Prosocial Tendencies Measure – public subscale&lt;sup&gt;e&lt;/sup&gt;</td>
<td>7.03</td>
<td>3.52</td>
<td>16.00</td>
</tr>
<tr>
<td>Prosocial Tendencies Measure – altruism subscale (reverse scored)&lt;sup&gt;f&lt;/sup&gt;</td>
<td>9.07</td>
<td>4.11</td>
<td>20.00</td>
</tr>
</tbody>
</table>

**Note.**<sup>a</sup> Coded 1 = 1-2 times the past year, 2 = 1-2 times every 6 months, 3 = 1-2 times every 3 months, 4 = 1-4 times a month, 5 = 1-2 times a week, 6 = more often than twice a week.  <sup>b</sup>Coded 1 = 1-2 years, 2 = 3-5 years, 3 = 5-7 years, 4 = 7-10 years, 5 = more than 10 years.  <sup>c</sup>Coded 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree.  <sup>d</sup>10-point range from no direct contact to 100% direct contact.  <sup>e</sup>Sum of 4 items coded 1 = does not describe me at all, 2 = describes me a little, 3 = somewhat describes me, 4 = describes me well, 5 = describes me greatly.  <sup>f</sup>Sum of 5 items coded 1 = does not describe me at all, 2 = describes me a little, 3 = somewhat describes me, 4 = describes me well, 5 = describes me greatly; lower scores indicate higher altruism.
Table 4

Descriptive Statistics for Outcome Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Observed Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS sum</td>
<td>14.02</td>
<td>9.71</td>
<td>58.00</td>
</tr>
<tr>
<td>IDS mood/cognition subscale</td>
<td>7.38</td>
<td>6.29</td>
<td>37.00</td>
</tr>
<tr>
<td>IDS anxiety/somatic subscale</td>
<td>3.54</td>
<td>3.09</td>
<td>17.00</td>
</tr>
<tr>
<td>IDS sleep subscale</td>
<td>3.10</td>
<td>2.10</td>
<td>10.00</td>
</tr>
</tbody>
</table>

Table 5

Intercorrelations among Demographic Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-0.03</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Education&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.42***</td>
<td>-17**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Conditions&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.31***</td>
<td>-0.08</td>
<td>0.13*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Psych. Conditions&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.04</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.16**</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01, ***p < .001. <sup>a</sup> Gender coded 1 = Women, 2 = Men. <sup>b</sup> Level of education coded 1 = 8<sup>th</sup> grade or less, 2 = some high school, 3 = high school graduate, 4 = GED, 5 = some college, Associates Degree, or Technical Degree, 6 = Bachelor’s Degree, 7 = Master’s Degree, 8 = Doctoral Degree. <sup>c</sup> Medical and Psychological/Emotional Conditions coded 0 = no diagnosed condition identified, 1 = diagnosed condition identified.
Table 6

*Associations between Demographic Variables and Variables of Interest*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Age</th>
<th>Gender a</th>
<th>LOE b</th>
<th>Medical c</th>
<th>Psych c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altruistic activities d</td>
<td>.26***</td>
<td>-0.03</td>
<td>.06</td>
<td>.10</td>
<td>.05</td>
</tr>
<tr>
<td>Frequency e</td>
<td>.01</td>
<td>-0.07</td>
<td>.002</td>
<td>.08</td>
<td>-0.02</td>
</tr>
<tr>
<td>Duration f</td>
<td>.41***</td>
<td>.07</td>
<td>.13*</td>
<td>.18**</td>
<td>.09</td>
</tr>
<tr>
<td>Overburdened g</td>
<td>-0.09</td>
<td>-0.01</td>
<td>.04</td>
<td>-0.06</td>
<td>.11</td>
</tr>
<tr>
<td>Life satisfaction g</td>
<td>.18**</td>
<td>-0.13*</td>
<td>.03</td>
<td>.13*</td>
<td>-0.05</td>
</tr>
<tr>
<td>Purpose g</td>
<td>.05</td>
<td>-0.07</td>
<td>-0.10</td>
<td>.01</td>
<td>-0.10</td>
</tr>
<tr>
<td>Engagement w/helpees h</td>
<td>-.09</td>
<td>0.04</td>
<td>.02</td>
<td>-0.02</td>
<td>.02</td>
</tr>
<tr>
<td>Engagement w/helpers h</td>
<td>-.11</td>
<td>0.09</td>
<td>&lt;.001</td>
<td>-0.09</td>
<td>-0.06</td>
</tr>
<tr>
<td>Family/friends</td>
<td>0.09</td>
<td>-0.03</td>
<td>.02</td>
<td>.04</td>
<td>.01</td>
</tr>
<tr>
<td>Acqs./colleagues</td>
<td>.03</td>
<td>.05</td>
<td>-0.03</td>
<td>.05</td>
<td>.04</td>
</tr>
<tr>
<td>Strangers/unknown</td>
<td>.20***</td>
<td>.08</td>
<td>-0.08</td>
<td>.10</td>
<td>.03</td>
</tr>
<tr>
<td>PTM – public i</td>
<td>-.19**</td>
<td>.27***</td>
<td>-.07</td>
<td>-.11</td>
<td>-.06</td>
</tr>
<tr>
<td>PTM – altruism j</td>
<td>-.22***</td>
<td>.15*</td>
<td>-.16**</td>
<td>-.20**</td>
<td>-.07</td>
</tr>
<tr>
<td>Compensation k</td>
<td>.002</td>
<td>.06</td>
<td>-0.06</td>
<td>.02</td>
<td>-.05</td>
</tr>
<tr>
<td>Religiously motivated k</td>
<td>.09</td>
<td>-0.03</td>
<td>-.01</td>
<td>.06</td>
<td>-.04</td>
</tr>
<tr>
<td>Animals k</td>
<td>.17**</td>
<td>-.17**</td>
<td>.12*</td>
<td>.05</td>
<td>.10</td>
</tr>
<tr>
<td>IDS sum</td>
<td>-.08</td>
<td>-0.13*</td>
<td>-.01</td>
<td>.13*</td>
<td>.31***</td>
</tr>
<tr>
<td>IDS mood/cognition</td>
<td>-.09</td>
<td>-0.10</td>
<td>-.02</td>
<td>.13*</td>
<td>.29***</td>
</tr>
<tr>
<td>IDS anxiety/somatic</td>
<td>-.07</td>
<td>-0.08</td>
<td>.02</td>
<td>.10</td>
<td>.32***</td>
</tr>
<tr>
<td>IDS sleep</td>
<td>-.001</td>
<td>-.16**</td>
<td>-.02</td>
<td>.05</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note. * p < .05, ** p < .01, ***p < .001. a Gender coded 1 = Women, 2 = Men. b Level of education coded 1 = 8th grade or less, 2 = some high school, 3 = high school graduate, 4 = GED, 5 = some college, Associates Degree, or Technical Degree, 6 = Bachelor’s Degree, 7 = Master’s Degree, 8 = Doctoral Degree. c Medical and Psychological/Emotional Conditions coded 0 = no diagnosed condition identified, 1 = diagnosed condition identified. d Sum of all altruistic activities identified. e Frequency coded 1 = 1-2 times the past year, 2 = 1-2 times every 6 months, 3 = 1-2 times every 3 months, 4 = 1-4 times a month, 5 = 1-2 times a week, 6 = more often than twice a week. f Duration coded 1 = 1-2 years, 2 = 3-5 years, 3 = 5-7 years, 4 = 7-10 years, 5 = more than 10 years. g Overburdened, life satisfaction, and purpose coded 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree. h 10-point range from no direct contact to 100% direct contact. i Sum of 4 items coded 1 = does not describe me at all, 2 = describes me a little, 3 = somewhat describes me, 4 = describes me well, 5 = describes me greatly. j Sum of 5 items coded 1 = does not describe me at all, 2 = describes me a little, 3 = somewhat describes me, 4 = describes me well, 5 = describes me greatly; lower scores indicate higher altruism. k Coded 0 = no, 1 = yes.
Table 7

*Associations Among Predictor Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 N of Altruistic activities</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Frequency</td>
<td>.03</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Duration</td>
<td>.18**</td>
<td>.21***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Level of engagement (2+3)</td>
<td>.13*</td>
<td>.78***</td>
<td>.78***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Overburden</td>
<td>-.06</td>
<td>.09</td>
<td>-.11</td>
<td>-.01</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Engagement w/helpees</td>
<td>.22***</td>
<td>.28***</td>
<td>.13*</td>
<td>.26***</td>
<td>.06</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Engagement w/Helpers</td>
<td>.13*</td>
<td>.17**</td>
<td>.01</td>
<td>.11</td>
<td>-.05</td>
<td>.41***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Life satisfaction</td>
<td>-.003</td>
<td>.02</td>
<td>.11</td>
<td>.08</td>
<td>-.27***</td>
<td>.11</td>
<td>.19**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Purpose</td>
<td>.21**</td>
<td>.12</td>
<td>-.01</td>
<td>.07</td>
<td>-.18**</td>
<td>.11</td>
<td>.14*</td>
<td>.54***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10 IDS sum</td>
<td>-.03</td>
<td>-.07</td>
<td>-.05</td>
<td>-.08</td>
<td>.27***</td>
<td>-.03</td>
<td>-.15*</td>
<td>-.07</td>
<td>-.17**</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p < .01, ***p < .001. All variables except IDS sum are standardized.
### Results of Hypothesis Tests

<table>
<thead>
<tr>
<th>Hypothesis test</th>
<th>$F\Delta$</th>
<th>Adj. $R^2\Delta$</th>
<th>$p$</th>
<th>$\beta$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>2.20</td>
<td>.01</td>
<td>.14</td>
<td>-.08</td>
<td>.14</td>
</tr>
<tr>
<td>Frequency of altruistic activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>.554</td>
<td>.002</td>
<td>.46</td>
<td>-.05</td>
<td>.46</td>
</tr>
<tr>
<td>Duration of altruistic activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>7.11</td>
<td>.06</td>
<td>&lt;.001</td>
<td>-.08</td>
<td>.14</td>
</tr>
<tr>
<td>Level of engagement in activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of overburden</td>
<td></td>
<td></td>
<td></td>
<td>.24</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
<td></td>
<td>.07</td>
<td>.21</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>1.81</td>
<td>.02</td>
<td>.15</td>
<td>-.02</td>
<td>.81</td>
</tr>
<tr>
<td>Level of engagement in activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of social interaction</td>
<td></td>
<td></td>
<td></td>
<td>-.14</td>
<td>.03</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>2.14</td>
<td>.004</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of engagement predicting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>life satisfaction and purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life satisfaction and purpose</td>
<td>1.90</td>
<td>.01</td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>predicting depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two predictors</td>
<td>3.27</td>
<td>.02</td>
<td>.04</td>
<td>-.07</td>
<td>.21</td>
</tr>
<tr>
<td>Level of engagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life satisfaction and purpose</td>
<td></td>
<td></td>
<td></td>
<td>-.12</td>
<td>.03</td>
</tr>
</tbody>
</table>
Table 9

*Results of Research Question Analyses*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>t</th>
<th>p</th>
<th>M1</th>
<th>M2</th>
<th>F</th>
<th>p</th>
<th>$R^2$</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 1A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation (1) vs. No Compensation (2)</td>
<td>.21</td>
<td>.83</td>
<td>14.36</td>
<td>14.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 1B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTM Public Subscale</td>
<td>1.00</td>
<td>.32</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTM Altruism Subscale</td>
<td>1.04</td>
<td>.31</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 1C</td>
<td>2.81</td>
<td>.008</td>
<td>10.83</td>
<td>14.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religiously Motivated (1) vs. Non-Religious (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 1 - Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTM Emotional Subscale</td>
<td>.29</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altruism w/Animals (1) vs. No Animals (2)</td>
<td>-.05</td>
<td>.96</td>
<td>13.97</td>
<td>14.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Types of Persons Helped predicting Overburden</td>
<td>2.75</td>
<td>.04</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freq. of Helping Strangers/Unknown predicting Overburden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Types of Persons Helped predicting Life Satisfaction &amp; Purpose</td>
<td>2.29</td>
<td>.08</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freq. of Helping Family/Friends predicting Life Satisfaction &amp; Purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
Table 9 (continued)

<table>
<thead>
<tr>
<th>Research Question</th>
<th>$t$</th>
<th>$p$</th>
<th>$M1$</th>
<th>$M2$</th>
<th>$F$</th>
<th>$p$</th>
<th>$R^2$</th>
<th>$\beta$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altruistic Activities predicting IDS Mood/Cognition Subscale</td>
<td>2.23</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Altruistic Activities predicting IDS Anxiety/Somatic Subscale</td>
<td>.38</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.001</td>
</tr>
<tr>
<td>Altruistic Activities predicting IDS Sleep Subscale</td>
<td>.75</td>
<td>.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.003</td>
</tr>
</tbody>
</table>
APPENDIX

INFORMED CONSENT NOTICE
University of North Texas Institutional Review Board
Informed Consent Notice

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

**Title of Study:** A Study of Benevolent Activity, Health, and Mood.

**Principal Investigator:** Brittney Wright, M.S., a graduate student in the University of North Texas (UNT) Department of Psychology.

**Purpose of the Study:** You are being asked to participate in a research study which involves an evaluation of your benevolent activities, as well as your current physical and mental health.

**Study Procedures:** You will be asked to complete an online questionnaire that will take approximately 45 minutes to an hour of your time.

**Foreseeable Risks:** The potential risks involved in this study are some minor level of discomfort and potentially some minor level of anxiety. You may refuse to participate or withdraw from this study at any time without any penalty or loss.

**Benefits to the Subjects or Others:** This study is not expected to be of any direct benefit to you but will benefit our understanding of how people’s experiences affect their physical and mental health. The data collected will be used to compare with previous research and further advance the field.

**Compensation for Participants:** At the end of the questionnaire, you may choose the option of entering a raffle for the chance to win a gift card. Additionally, if you are a UNT student you may receive extra credit in one of your psychology courses or SONA credit which may also be applied to a course.

**Procedures for Maintaining Confidentiality of Research Records:** Your participation is solicited, although strictly voluntary. The data collected from this study will be used for education and publication purposes; however, it will not be identified with you personally. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study. Please **DO NOT** type your name anywhere on this survey.

**Questions about the Study:** If you have any questions about the study, you may contact Brittney Wright at brittneymcgill@my.unt.edu or the faculty advisor, Dr. Sharon Rae Jenkins, UNT Department of Psychology, at telephone number (940) 565-2671.

**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.
Research Participants’ Rights:

Your indication below indicates that you have read all of the above and that you confirm all of the following:

- You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- Your decision whether to participate or to withdraw from the study will have no effect on your grade or standing in this course.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.

☐ I have read and understand the above statements. By clicking “continue” below, I agree to participate in this study.
REFERENCES


