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# Spirituality and Anxiety: Forgiveness as a Mediator.

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Spirituality and Anxiety: Forgiveness as a Mediator

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Abstract

Introduction: There is a growing interest in psychological and health research in the relationship between spirituality and physical and mental health variables. Forgiveness has also been considered in such research and hypothesized as a potential mediating variable. However, much of the research in this area has not examined spirituality in the dimensions ritualistic, theistic, and existentialistic, nor has it tested for the potential mediation of forgiveness. The purpose of this study was to expand upon the dimensions of spirituality, with forgiveness as a mediator, and to test how they affect state and trait anxiety. Methods: Participants in this cross-sectional study were 479 students at East Tennessee State University (Caucasian=78.29%, ♀=69.10%, $M_{age}$=22.45). Participants completed a variety of self-report measures including the RiTE measure of spirituality, state and trait anxiety measure, Heartland Forgiveness Scale, and religious background and behaviors. Results and Discussion: Existentialistic spirituality was found to be related to both state and trait anxiety with forgiveness providing both indirect only and full mediation effects. Forgiveness of self and forgiveness of situations served as the only mediators between existentialistic spirituality and state and trait anxiety. Ritualistic and theistic spirituality were not significantly related to state and trait anxiety. It appears that spirituality may operate through forgiveness of self and forgiveness of situations to affect state and trait anxiety. That is, existentialistic spirituality is associated with forgiveness, which in turn is associated with lower anxiety. As such, it may be useful to integrate the concept of these dimensions of spirituality when assessing anxiety in psychological health patients.

Acknowledgements

Table of Contents

Introduction

'Spiritual' and 'religious' are terms often heard today as defining characteristics of many individuals. For many decades, at least 90% of Americans have consistently reported a belief in God or a Universal Spirit (Gallup, 2011). There is no doubting the prevalence of such matters that are believed to have a direct impact on our well-being. Spirituality and religion are different, though related terms. The two are considered to be non-equivalent by most researchers, despite the fact that they are often used concurrently (Muller & Dennis, 2007). Studying such characteristics has created some confusion given the diversity of current perceptions in this area of research (Zinnbauer, et al., 1997).

Regardless of the choice of term in individual cases, there seems to be a general lay acceptance that there is some link between these characteristics, (spirituality/religion), and personal health. This perceived relationship can be traced as far back as Plato, who wrote about madness in relation to divinity, and to more ancient predecessors of religions such as Judaism, Christianity, and Islam (Koenig, 1998). The idea has since sparked a surge of research with a common aim of finding a general relationship, while more recent research is further examining the specifics of these relationships.

*Defining Spirituality vs. Religiousness*

Spirituality, for our purposes, refers to a personal, subjective aspect of religious experience (Hill & Pargament, 2008). It is more individualistic in nature than religion. Spirituality can also be understood as a narrower concept within the broader concept of religion; that is, it seems to be a concentration of religion (Thoresen, Harris, & Oman, 2001). However, it is important to note that research supports the idea that one can be spiritual without being

religious, and vice versa (Richards & Bergin, 1997). Religiousness, in a general sense, is most often referred to as a phenomenon of *society*, including societal institutions, which encompass "rules, rituals, covenants, and formal procedures" (Thoresen, et al., 2001, p.22). Many individuals have viewed both religion and spirituality inclusively as a search for meaning in regards to the sacred (Pargament, 1999). However, spirituality commonly refers to "a connection with the divine without reference to organized religion or religiosity", (Webb, 2003, p. 17)

*Spirituality and Health*

Within the past 20 years, spirituality has been examined vigorously with regard to its role in health (Egnew, 2010).  The overwhelming majority of research in this relationship has been correlational, with very few experimental studies and findings (Thoresen, et al., 2001). Some research studies revealed apparent links that were claimed to be epidemiological in nature, such as a religious attendance and mortality rates. While these studies have been questioned for the lack of controlled variables, many relationships regarding spirituality and physical health have been affirmed by correlational research results. These include, but are not limited to: lower blood pressure rates, better physical ability, reduced levels of pain in cancer patients, etc. (Thoresen, et al., 2001).

As far as mental health is concerned, there has been research regarding some relationships between various psychological variables and spirituality over quite a span of time. These assumptions began with the religious writings and movements of the seventeenth century (Koenig, 1998). Since then, studies have revealed relationships between spirituality and certain psychological variables. For example, in Harris' study in 1995 (as cited in Thoresen, et al., 2001), spirituality was said to increase self-esteem and decrease anxiety and worry in health patients. With a variety of relationships between physical and psychological health and

spirituality currently established, more complex relationships amongst more specific health variables and spirituality dimensions can easily be imagined.

The nature and the dynamics of this relationship are still under scrutiny. The relationship between the two may be direct and linear in nature, at least it is easy to imagine. However, one could also hypothesize that a third variable could operate as a potential mediator between the two. For example, the construct of forgiveness has been found to be related to both spirituality and health variables, in general (Webb, Toussaint, & Conway-Williams, in press). In this case, the relationship between spirituality and health may be multidimensional, with another construct serving as a mechanism that affects the dynamic of the relationship as a whole. Thus, the relationship in question may very well operate through forgiveness (see Worthington, Berry, and Parrott, 2001).

The differing fields that have considered spirituality in their research have created many models of spirtualty's influence on health, suggesting there may be differing relations between specific types of spirituality and various physical and mental conditions (Baetz & Toews, 2009). For example, a study by Allport and Ross (1967) proposed two different orientations of religion, extrinsic and intrinsic. When a religion is practiced for an ulterior motive, such a social status, it is said to be extrinsically motivating; a person who practices a religion for altruistic reasons would be considered intrinsically religious (Allport & Ross, 1967). This study revealed that persons with intrinsic motivations for practicing their religion displayed lower depression rates when compared with extrinsically motivated individuals (Baetz & Toews, 2009). Research such as this suggests that when the construct of spirituality is further expanded into its various aspects, more detailed relationships between these aspects and other mental health variables may exist.

While it is a relatively new focus within the broad field of psychology, spirituality has been making a place for itself within the particular field of positive psychology, while also being considered and practiced in medical therapy. Many previous studies have even considered spirituality as directive of other health variables, meaning that all other health variables answer to it (Muller & Dennis, 2007). Thus, it appears that the general assumptions about the benefits of spirituality are, in fact, supported by research. Spirituality is certainly considered a meaningful construct of psychological research today. However, considering the current research, many of the more specific dimensions of spirituality, as they relate to other potential health variables and as they are subject to impending mediators, have yet to be examined.

*Spirituality in Context*

While spirituality and religion are certainly prevalent worldwide, in the United States, there is believed to be a densely concentrated area where such characteristics are definitive of the majority of the population. Part of the Southern Appalachian Region, nicknamed "The Bible Belt", is an area in which rates of religiousness are very high. The South may be the most religious region of the United States, with 71% stating that religion is very important in their lives (Newport, 2006). Spirituality has been examined amongst college students, and in most cases, spirituality tends to be lower in these years (Muller & Dennis, 2007). Nevertheless, some evidence suggests that it tends to be fairly high. In a study conducted by the Higher Education Research Institute (2004), about 80% of students were found to either believe in God, or have an interest in spirituality, in general. It seems appropriate to contemplate the effects of the extent of students' beliefs and spiritual practices, with potential mediators in consideration, on their health.

Perhaps even more characteristic of college students today is anxiety. College is considered to be a time in which most students experience change and difficulty with

understanding life's meaning (Muller & Dennis, 2007). Such difficulties beg the question of students' spiritual or religious practices, or lack thereof. While chronic (*trait*) anxiety may be characteristic of a certain population of college students, many students may experience anxiety that is situation-specific or *state* anxiety. These experiences with anxiety may be derivative of their spiritual grounding, or correlated in some interesting way.

*Spirituality Model*

The first model for this research is a multi-dimensional continuum of spirituality (religion or religiousness being a dimension, also referred to as ritualistic). The three dimensions characterizing the model are Theistic (universal connectedness), Existential (purposeful meaning), and Religious (organized practice). These dimensions overlap on the principles of the search for meaning, a connection with universe/nature, and observance (Webb, 2003).

The dimension that appears at the peak of the triangular model is Theistic, also referred to as a spiritual subtype. Therefore, theistic spirituality refers to a very general connectedness with a god, nature, or the universe. It is linked to existential spirituality on the grounds of a search for meaning. Existentialism, in its philosophical basis, is just that, a continuous search for meaning or purpose in life. Existential spirituality is further linked to religious spirituality in the established principle of observance (Webb, 2003), though it is non-theistic (Richards & Bergin, 1997). The religious (or ritualistic) dimension refers to spirituality with the overarching principle being organized practice, associated with organized religion. This dimension shares the principle of the acknowledgement of divinity with the theistic dimension. Thus, the entire model refers to and, in essence, defines and relates the three dimensions of spirituality in question.

*Forgiveness*

Forgiveness is another construct of recent interest by the way of research in spirituality and mental health fields. It is accepted in many practices and therapies as being closely related to religion (Webb, 2003). It can be viewed in a variety of dimensions including forgiveness of self, of others, and of situations (see Thompson, et al., 2005). Forgiveness is defined as prevention of unforgiving emotions by experiencing intense, positive, loving emotions while recalling a transgression (Worthington, et al., 2001). When forgiveness has been considered in health research, it has been found to be correlated with many health variables; for example, disabling conditions and trauma (Worthington, 1998).

In the search for the relationship between spirituality and health, forgiveness is considered a mediator, in some cases affecting the strength and characteristics of the relationship. Worthington's forgiveness model suggests this aspect of forgiveness serving as a mediator (Worthington, et al., 2001), yet little work has been conducted in verification thereof. Considering the perpetuation of forgiveness as a virtue of the majority of world religions, (Webb, Toussaint, & Conway-Williams, in press), it is logical to consider it alongside the relationship of spirituality and health. It has been hypothesized that spirituality has a direct effect on one's ability to forgive, which therefore implies that forgiveness mediates the effect that spirituality has on one's health (Worthington, et al., 2001). Such ideas, when researched, have been confirmed. For example, in a study conducted by Lawler-Row (2010), forgiveness was found to be a mediator amongst the majority of all the examined religion-health relationships. Thus, with forgiveness being found to be related to both spirituality and health, and to have been considered a mediator between these relationships separately, it is intriguing to contemplate its effects on the

nature of the relationship between spirituality and such psychological health variables as state/trait anxiety.

*State/Trait Anxiety*

Our psychological health variable under consideration is anxiety. More specifically, two dimensions of anxiety, state and trait, will be examined. C.D. Spielberger (1973) defines these terms as follows: State anxiety refers to the semi-temporary anxiety experienced during specific situations. These situations, in order to evoke anxiety, are situations that are considered to be dangerous to the individual. State anxiety can otherwise be determined by asking how one feels at a *particular moment*.  In contrast, trait anxiety is normally a stable characteristic, if not disposition, of an individual. Trait anxiety is found in individuals on a continuum, in which those high in anxiety proneness experience stress and anxiety that is non-situational. Trait anxiety can otherwise be determined by asking how one *generally feels*. Thus, these types of anxieties are likely to vary amongst college students, whom are at specific times in their lives where anxiety can be expected to be present, if not prevalent.

<div align="center">Purpose & Hypothesis</div>

The purpose of this research is to identify the potential relationship between three dimensions of spirituality as they are defined, (theistic, ritualistic, and existentialistic), and two dimensions of psychological anxiety, state and trait, with forgiveness functioning as a mediator. While spirituality has provided a link in many cases of psychological health, much less has investigated spirituality in defined, specific ways, such as the tri-dimensional model. The pre-established relationship between spiritual factors and health variables supports the need to question whether the relationship between these different constructs and state and trait anxiety vary in a correlated and systematic manner and whether forgiveness functions as a mediator

between the two main variables (i.e., spirituality and anxiety). Many studies have assessed a general relationship between spirituality and psychological and physical health, yet few have addressed how varying dimensions of spirituality and forgiveness are related to anxieties.

The aim of this research is to expand on the three spirituality constructs and analyze how these different dimensions may potentially be correlated with state and trait anxiety, with forgiveness acting as a mediator. Given the lack of research conducted to test Worthington's religiousness-forgiveness-health model and the pre-established relationship between forgiveness and spirituality and forgiveness and health, separately, we propose to test forgiveness as a mechanism through which spirituality and anxiety may be associated. If such complex relationships are revealed, they will provide benefit to medical and psychological practices and to clients with specific spiritual orientations. It holds that our independent variable of interest is one's spiritual orientation, while our dependent variable is state or trait anxiety, with forgiveness serving as a potential mediating variable. As such, we hypothesize that there is a constructive relationship between spirituality and anxiety and that this relationship will vary depending on the different dimensions of spirituality, the different dimensions of forgiveness, and the two anxieties, state and trait, under consideration.

## Methods

### Participants

Our sample included 479 students currently enrolled at East Tennessee State University whom voluntarily participated in this study. To participate, students had to be registered for at least one psychology course in order to have access to research participation. Student's participated in a series of surveys via the university's student-accessible online research system, SONA. Table 1 illustrates the demographics of the sample population. As indicated by the table,

most participants are female (69.10%), white (78.29%), and single (78.29%). Participants are mostly in their early 20's and have completed an average of about 2 years of higher education.

*Materials*

The data for this research was drawn from four surveys that measure forgiveness, state/trait anxiety, religious and spiritual experiences, backgrounds, and behaviors. A brief description of these surveys will follow. The independent variables are spirituality and forgiveness, including specifically the aforementioned dimensions of each, while the dependent variable is state/trait anxiety. Demographic variables, including gender, age, marital status, etc., and religious behaviors and backgrounds were controlled for.

*RiTE Measure of Spirituality.* This spirituality measure was developed by Webb, Dula, and Toussaint (2009). The RiTE measure is a 30-question survey that aims to identify the participant's thoughts and beliefs about spirituality from a cross-cultural perspective, using a Likert scale. For example, questions include general and specific belief items about beliefs in God or in many gods.

*Religious Background and Behaviors.* Participants also completed a questionnaire involving their religiousness, specifically their background and behaviors. This measure includes 13 items that measure past, current, and continuous religious beliefs and practices (for example, time spent in prayer). This measure was developed by Connors, Tonigan, and Miller (1996).

*State and Trait Anxiety.* Participants completed two anxiety measures, one measuring state anxiety and the other, trait anxiety. Both measures include 20-items, using a Likert scale (ranging from 'not at all', to 'very much so'). Reflecting the nature of each anxiety dimension, the state anxiety items measure how participants felt at that particular moment, while the trait

anxiety items measure how the participants feel in general. This scale was developed by Speilberger, Gorsuch, & Luchene (1969).

*Heartland Forgiveness Scale*. The HFS is an 18-item measure that uses a Likert Scale (ranging from 'almost always false of me', to 'almost always true of me'). It measures how participants typically respond to negative life situations and events. The HFS was developed by Thompson, et al., (2005).

*Procedure*

Participation in this research involved having access to the online SONA system by being enrolled in a psychology course at the university. Student's participation was voluntary and some were offered extra credit for completing a particular amount of studies, as established by their instructor. Data was analyzed via SPSS, a statistical analysis software program that is often used for research in psychology and other social sciences. The data was analyzed using multivariable and bivariate analyses, including mediation analysis, while some demographic variables and religiousness variables were controlled for.

<div align="center">Results</div>

**Bivariate Associations**

As Table 1 indicates, bivariate correlations (Pearson *r*) were calculated amongst control variables (demographics and lifetime religiousness), independent variables (ritualistic, theistic, and existential spirituality), mediating variables (forgiveness of self, of others, and of situations), and the dependent variables (state and trait anxiety) (see Table 1). Statistically significant relationships were found between specific independent and dependent variables. In the context of spirituality, existentialistic was found to be significant with all 3 mediating variables ($r$=.17-.20, p≤.001) and with both dependent variables ($r$=-.13 and -.17, p≤.01). Ritualistic spirituality was

associated with 2 of the 3 mediators ($r$=.13, p≤.01) and with both dependent variables ($r$=-.14, p≤.01). Theistic spirituality was associated with one mediator, forgiveness of situations ($r$=.09, p≤.05) and with one dependent variable, trait anxiety ($r$=-.13, p≤.01) (see Table 1).

Each forgiveness dimension was associated with each dependent variable ($r$=-.32 and -.68, p≤.001). This study controlled for demographic variables (gender, age, education, ethnicity, marital status, and lifetime religiousness). Bivariate correlations revealed 8 out of 30 significant associations ($r$=|10| to |.15|, p≤.05). To note, neither ethnicity nor marital status were associated with any variables; however, lifetime religiousness was significant in 4 out of 5 relationships (see Table 1).

**Multivariable Associations**

In addition to the bivariate analyses, multivariable analyses were conducted using forgiveness dimensions (of self, of others, and of situations) as a potential mediator between the independent variable dimensions of spirituality (ritualistic, theistic, and existentialistic), and the dependent variables of state and trait anxiety. As a whole, the analyses revealed an indirect only effect and a full mediation and indirect effects among the proposed independent, mediator, and dependent variables (see Table 4). These findings will be explained in greater detail below.

*Spirituality and Anxiety as mediated by Forgiveness*

There were no significant indirect effects or full mediation effects found between ritualistic and theistic spirituality, the 3 dimensions of forgiveness, and state and trait anxiety. Among the associations between spirituality (ritualistic, theistic, existentialistic) and anxiety (state and trait) as mediated by forgiveness (of self, of others, and of situations) examined in this study, existentialistic was observed to be associated with anxiety only and through forgiveness of self and forgiveness of situations only. That is, there were no direct or indirect associations

involving ritualistic, theistic, and forgiveness of others was not observed to play a role in the relationship between spirituality and anxiety.

For state anxiety, the association of existentialism operated through forgiveness of self and forgiveness of situations in an indirect only fashion (see Tables 2 and 3 and Figure 1). That is, the total effect (c) and direct effect (c$^{'}$) were non-significant, yet the total indirect effect (ab) and specific indirect effects for forgiveness of self (a$_1$, b$_1$) and forgiveness of situations (a3, b3) were significant. As such, the association between existentialism and state anxiety operated only as a function of forgiveness of self and forgiveness of situations.

For trait anxiety, the association of existentialism operated through forgiveness of self and forgiveness of situations in a fully mediated fashion (see Tables 2 and 3 and Figure 1). That is, the total effect was significant, the direct was non-significant, and the total indirect and specific indirect effects were significant. As such, while an initial otherwise direct effect was observed between existentialism and trait anxiety, once the forgiveness dimensions were entered as potential mediators, the relationship fully operated through forgiveness of self and forgiveness of situations.

## Discussion

The analyses revealed that significant relationships exist between existentialistic spirituality and anxiety, with forgiveness as a mediator. These relationships included both indirect only and full mediation effects. The relationship between existential spirituality and anxiety was found to operate through forgiveness of self and forgiveness of situations only. Ritualistic and theistic spirituality were not associated with anxiety, directly or indirectly, and forgiveness of others was not observed to play a role in the relationship between spirituality and anxiety. For state anxiety, existential spirituality was associated only as a function of its

relationship with forgiveness of self and forgiveness of situations. For trait anxiety, existential spirituality was initially associated in a direct fashion, but once forgiveness was accounted for, the associated operated entirely through forgiveness of self and forgiveness of situations.

These results partially support the hypothesis of this research. That is, when the dimensions of spirituality and potential mediators are considered, spirituality can have an effect on state and/or trait anxiety. Existentialistic spirituality was found to operate through forgiveness in its relationship to both state and trait anxiety. Specifically, as existential aspects of spirituality increase, the symptoms of anxiety (both characteristic and situational) decrease. In keeping with the mediation hypothesis, the ability to forgive ourselves and to forgive the negative situations that we experience appears to be a critical factor in the salutary relationship between spirituality and anxiety.

At the bivariate level of analysis, gender, age, education, ethnicity, and marital status are not related to forgiveness or anxiety. Lifetime religiousness, however, is associated with the forgiveness of others and of situations, and both state and trait anxiety. This suggests that religious behaviors and beliefs do serve to decrease anxiety, especially anxiety that is characteristic of the individual. This is consistent with the pre-established relationship that suggests that religiousness plays a role in physical and mental health.

**Limitations**

Despite the fact that this study revealed a significant relationship between specific dimensions of spirituality, forgiveness, and anxiety, limitations must be considered. First, participants' responses to some survey items may have been affected by a social desirability bias. Considering the participants were pooled from the same university, this may have lead participants to answer more personal survey items dishonestly, in knowing that the results would

be examined by persons within their university. While survey research provides the most confidential means of collecting data, future research may consider other methods that ensure privacy and therefore increase reliability of results.

Second, personal assessment of spirituality may have been inaccurately reported due to participants exaggerating or even under-estimating their own spiritual practices, or lack thereof. Placement amongst the dimensions on the spirituality model, according to the reported beliefs and practices, may therefore have been incorrect. Also, extraneous variables may have affected participants' responses to the state and trait anxiety measures. Not all variables that have been found to be associated with such psychological constructs can be controlled for. Therefore, participants' anxiety score may have been affected by some variable outside spirituality. Future research may examine such extraneous variables that affect anxiety.

Finally, generalizability may be considered a limitation of this study. The results of this study may only reflect the beliefs of the Southern Appalachian region, considering its high concentration of religiousness (Newport, 2006). Also, the anxiety results may apply only to college students, and perhaps more specifically, college students at East Tennessee State University. Therefore, these results may not generalize to populations outside this particular region of the United States or outside this university. Future research may examine other samples with differently noted spirituality/religious concentrations.

**Conclusion**

Spirituality has long been considered a meaningful aspect in the lives of many individuals. With growing interest by way of positive psychology research, spirituality has become an established psychological construct and has been considered in a variety of research studies across disciplines. This study contributes to the growing body of knowledge surrounding

spirituality as an operable variable. Forgiveness has been considered in such ideas as Worthington's model to be a potential mediator amongst such relationships. While having been established as significantly related to both spirituality and health, this model has now been tested and forgiveness was found to mediate such relationships as existential spirituality and state and trait anxiety.

Given the findings of this study, medical and psychological practices should consider individual differences in spirituality and one's ability to forgive. With existentialistic spirituality having been found to be related through forgiveness, to anxiety, professionals should consider this in assessments and in therapy. In keeping with previous research that suggests that spirituality affects one's physical and mental health, existentialistic spirituality can now be examined with regards to anxiety. That is, existential ideas and practices may be introduced to individuals, whom do not already identify with another spirituality dimension, as a means of managing anxiety. In general, this study serves to introduce spirituality and forgiveness as a lens through which anxiety may be examined and managed.

References

Allport, G. W., & Ross, J. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5(4),* 432-443. doi:10.1037/h0021212

Baetz, Marilyn, & Toews, John. (2009). Clinical Implications of Research on Religion, Spirituality, and Mental Health. *The Canadian Journal of Psychiatry, 54(5),* 292-301.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (Second ed.). Hillsdale, NJ: Erlbaum.

Connors, G. J., Tonigan, J., & Miller, W. R. (1996). A measure of religious background and behavior for use in behavior change research. *Psychology Of Addictive Behaviors, 10(2),* 90-96. doi:10.1037/0893-164X.10.2.90

Egnew, Thomas R. (2010). Review of "Positive spirituality in health care. *Family, Systems, and Health, 28(3),* 290-292.

Gallup Poll. (2011). Religion. Retrieved February 10, 2012, from http://www.gallup.com/poll/indicators/indreligion3.asp

Higher Education Research Institute. (2004). The spiritual life of college students: A national study of college students' search for meaning and purpose. Graduate School of Education & Information Studies, University of California, Los Angeles. Retrieved March16, 2005 from http://www.spirituality.ucla.edu/spirituality/reports/FINAL%20REPORT.pdf.

Hill, Peter, & Pargament, Kenneth. (2008). Advances in the Conceptualization and Measurement of Religion and Spirituality: Implications for Physical and Mental Health Research. *Psychology of Religion and Spirituality, S(1),* 3-17.

Koenig, H. G. (1998). Handbook of religion and mental health. San Diego: Academic Press.

Lawler-Row, K. A. (2010). Forgiveness as a mediator of the religiosity—health

relationship. *Psychology Of Religion And Spirituality*, *2(1),* 1-16. doi:10.1037/a0017584

Muller, S. M., & Dennis, D. L. (2007). Life change and spirituality among a college student

cohort. *Journal Of American College Health*, *56(1),* 55-59. doi:10.3200/JACH.56.1.55-

60

Newport, F. (2006). Religion most important to Blacks, Women, and Older Americans: Self-

reported importance of religion decreases with education. Retrieved September 17, 2010,

from http://www.gallup.com/poll/25585/Religion-Most-Important-Blacks-Women-

Older-Americans.aspx.

Pargament, K.I. (1999). Psychology of Religion and Spirituality. *International Journal for the*

*Psychology of Religion*, *9*, 3-16.

Preacher, K. J., & Hayes, A.F. (2008). Asymptotic and resampling strategies for assessing and

comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*,

879-891.

Richards, P.S., & Bergin, A.E. (1997). *A spiritual strategy for counseling and psychotherapy*.

Washington, D.C: American Psychological Association.

Spielberger, C. D., Auerbach, S. M., Wadsworth, A. P., Dunn, T. M., & Taulbee, E. S. (1973).

Emotional reactions to surgery. *Journal of Consulting and Clinical Psychology, 40(1),*

33-38. doi:10.1037/h0033982

Spielberger, C.D., Gorsuch, R.L., & Luchene, R.E. (1969). *The State Trait Anxiety Inventory*

*Manual*. Palo Alto: Consulting Psychologists Press.

Thompson, L. Y., Snyder, C. R., Hoffman, L., Michael, S. T., Rasmussen, H. N., Billings, L. S., et al. (2005). Dispositional forgiveness of self, others, and situations. *Journal of Personality, 73(2),* 313-359. doi: 10.1111/j.1467-6494.2005.00311.x

Thoresen, C.E, Harris, A.H.S., Oman, D. (2001). Spirituality, Religion, and Health: Evidence, Issues, and Concerns. In T. Plante & A. Sherman (Eds.), *Faith and Health* (pp. 15-45). New York: The Guilford Press

Webb, Jon R. (2003). Spiritual Factors and Adjustment in Medical Rehabilitation: Understanding Forgiveness as a Means of Coping. *Journal of Applied Rehabilitation Counseling, 34(3),* 16-23.

Webb, J. R., Toussaint, L., & Conway-Williams, E. (in press). Forgiveness and health: Psycho-spiritual integration and the promotion of better healthcare. *Journal of Health Care Chaplaincy.* doi: 10.1080/08854726.2012.667317

Webb, J. R., Toussaint, L., & Dula, C. S. (2009). Ritualistic, theistic, and existential spirituality: Initial psychometric qualities of the RiTE measure of spirituality. Paper presentation at the 7th Annual Mid-Year Research Conference on Religion and Spirituality, Division 36 – Psychology of Religion, of the APA: Columbia, Maryland.

Worthington, E.L., Jr. (1998). Empirical research in forgiveness: Looking backward, looking forward. In E.L. Worthington Jr. (Ed.), *Dimensions of Forgiveness: Psychological research and theological perspectives* (pp. 321-339). Philadelphia: Templeton Foundation Press.

Worthington, E.L. Jr., Berry, J.W., Parrott, L. III. (2001). Unforgiveness, Forgiveness, Religion, and Health. In T. Plante & A. Sherman (Eds.), *Faith and Health* (pp. 107-130). New York: The Guilford Press

Zinnbaur, B., Pargament, K., Cole, B., Rye, M., Butter, E., Belavich, T., et al. (1997). Religion

and Spirituality: Unfuzzying the Fuzzy. *Journal for the Scientific Study of*

*Religion*, *36(4)*, 549-564.

Table 1

*Bivariate Associations and Descriptive Statistics* (n = 447-479)

| | FS | FO | FSIT | StateAnx | TraitAnx | n; *M* (*SD*) |
|---|---|---|---|---|---|---|
| Gender | -.03 | -.02 | -.06 | .10* | .06 | Female = 331<br>Male = 146 |
| Age | .11* | .03 | .08† | -.00 | .01 | 22.45 (7.60) |
| Education | .11* | .01 | .10* | -.04 | -.07 | 2.32 (1.46) |
| Ethnicity | -.00 | -.01 | -.01 | .04 | .02 | Caucasian = 406<br>Other = 67 |
| Marital Status | .08† | .05 | .03 | -.03 | -.01 | Single = 375<br>Other = 98 |
| Lifetime Religiousness | .05 | .15** | .13** | -.10* | -.15*** | 14.7 (2.63) |
| Forgiveness of Self | -- | .40*** | .69*** | -.55*** | .64*** | 30.07 (6.93) |
| Forgiveness of Others | .40*** | -- | .54*** | -.32*** | -.36*** | 31.16 (6.44) |
| Forgiveness of Situations | .69*** | .54*** | -- | -.60*** | -.68*** | 29.66 (6.86) |
| Ritualistic | .08† | .13** | .13** | -.14** | -.17*** | 33.4 (10.87) |
| Theistic | .04 | .09† | .09* | -.09† | -.13** | 40.31 (11.99) |
| Existential | .17*** | .20*** | .18*** | -.13** | -.17*** | 45.17 (4.41) |
| *M*<br>(*SD*) | 30.07<br>(6.93) | 31.16<br>(6.44) | 29.66<br>(6.86) | 37.53<br>(13.40) | 40.23<br>(11.76) | -- |

Gender: 0 = Male, 1 = Female; Education = year in college; Ethnicity: 1 = Caucasian, 2 = Other; Marital Status: 1 = Single, 2 = Other;
FS=Forgiveness of Self; FO=Forgiveness of Others; FSIT=Forgiveness of Situations; StateAnx=State Anxiety; TraitAnx = Trait Anxiety
Effect size (strength of association) of *r*: .10 = small, .30 = medium, .50 = large (Cohen, 1988)
† *p* < .10; * *p* ≤ .05; ** *p* ≤ .01; *** *p* ≤ .001; **** *p* ≤ .0001

Table 2

*Spirituality and Anxiety: Forgiveness as a Mediator*

*Unstandardized Regression Coefficients*

| Ritualistic | | | | Theistic | | | | Existential | | |
|---|---|---|---|---|---|---|---|---|---|---|
| State Anxiety (n = 411)[a] | | | | | | | | | | |
| $a_1$ | $b_1$ | $c$ | | $a_1$ | $b_1$ | $c$ | | $a_1$ | $b_1$ | $c$ |
| .02 | -.53**** | -.15 | | -.01 | -.53**** | .04 | | .22** | -.53**** | -.27† |
| $a_2$ | $b_2$ | $c'$ | | $a_2$ | $b_2$ | $c'$ | | $a_2$ | $b_2$ | $c'$ |
| .00 | .10 | -.12 | | -.02 | .10 | .03 | | .28*** | .10 | .02 |
| $a_3$ | $b_3$ | | | $a_3$ | $b_3$ | | | $a_3$ | $b_3$ | |
| .03 | -.82**** | | | -.02 | -.82**** | | | .24** | -.82**** | |
| Trait Anxiety (n =413)[b] | | | | | | | | | | |
| $a_1$ | $b_1$ | $c$ | | $a_1$ | $b_1$ | $c$ | | $a_1$ | $b_1$ | $c$ |
| .02 | -.60**** | -.09 | | -.01 | -.60**** | .00 | | .24** | -.60**** | -.33* |
| $a_2$ | $b_2$ | $c'$ | | $a_2$ | $b_2$ | $c'$ | | $a_2$ | $b_2$ | $c'$ |
| -.00 | .11 | -.06 | | -.02 | .11 | -.01 | | .27*** | .11 | -.01 |
| $a_3$ | $b_3$ | | | $a_3$ | $b_3$ | | | $a_3$ | $b_3$ | |
| .02 | -.77**** | | | -.01 | -.77**** | | | .26*** | -.77**** | |

[a] Full DV Model (FDVM) $R^2$ = .41****; [b] FDVM $R^2$ = .54****

$a_1$ = Spirituality → Forgiveness of Self, $b_1$ = Forgiveness of Self →Anxiety; $a_2$ =Spirituality → Forgiveness of Others, $b_2$ = Forgiveness of Others → Anxiety; $a_3$ = Spirituality → Forgiveness of Situations, $b_3$ = Forgiveness of Situations → Anxiety; $c$ = Spirituality → Anxiety, without accounting for Forgiveness of Self, Forgiveness of Others, Forgiveness of Situations, $c'$ = Spirituality →Anxiety, accounting for Forgiveness of Self, Forgiveness of Others, Forgiveness of Situations

† $p < .10$; * $p \le .05$; ** $p \le .01$; *** $p \le .001$; **** $p \le .0001$
5,000 bootstrap samples

Table 3

*Indirect Effects between Spirituality and Anxiety*

| | Ritualistic | | | Theistic | | | Existential | | |
|---|---|---|---|---|---|---|---|---|---|
| | Point Estimate | BCa 95% CI Lower | Upper | Point Estimate | BCa 95% CI Lower | Upper | Point Estimate | BCa 95% CI Lower | Upper |
| | | | | State Anxiety (n = 411)[a] | | | | | |
| $ab$ | -.03 | -.18 | .11 | .02 | -.11 | .15 | -.29[*] | -.49 | -.10 |
| $a_1b_1$ | -.01 | -.08 | .05 | .01 | -.05 | .07 | -.12[*] | -.23 | -.04 |
| $a_2b_2$ | .00 | -.01 | .02 | -.00 | -.03 | .01 | .03 | -.03 | .10 |
| $a_3b_3$ | -.02 | -.13 | .07 | .01 | -.08 | .11 | -.20[*] | -.34 | -.08 |
| $vs_{1,2}$ | -.01 | -.09 | .06 | .01 | -.05 | .08 | -.15[*] | -.30 | -.04 |
| $vs_{1,3}$ | .01 | -.06 | .09 | -.01 | -.07 | .05 | .08 | -.03 | .21 |
| $vs_{2,3}$ | .02 | -.08 | .14 | -.01 | -.13 | .08 | .23[*] | .09 | .40 |
| | | | | Trait Anxiety (n =413)[b] | | | | | |
| $ab$ | -.03 | -.17 | .12 | .01 | -.12 | .15 | -.31[*] | -.50 | -.13 |
| $a_1b_1$ | -.01 | -.08 | .06 | .01 | -.05 | .07 | -.14[*] | -.26 | -.05 |
| $a_2b_2$ | -.00 | -.02 | .01 | -.00 | -.02 | .01 | .03 | -.01 | .08 |
| $a_3b_3$ | -.02 | -.11 | .08 | .01 | -.07 | .10 | -.20[*] | -.33 | -.09 |
| $vs_{1,2}$ | -.01 | -.09 | .07 | .01 | -.06 | .08 | -.17[*] | -.31 | -.07 |
| $vs_{1,3}$ | .01 | -.06 | .07 | -.00 | -.07 | .05 | .05 | -.05 | .17 |
| $vs_{2,3}$ | .02 | -.08 | .12 | -.01 | -.11 | .08 | .10 | -.32 | .38 |

[a] Full DV Model (FDVM) $R^2$ = .41[****]; [b] FDVM $R^2$ = .54[****]

BCa 95% CI = Bias Corrected and Accelerated 95% Confidence Interval

$ab$ = Total Indirect Effect; $a_1b_1$ = Specific Indirect Effect through Forgiveness of Self; $a_2b_2$ = Specific Indirect Effect through Forgiveness of Others; $a_3b_3$ = Specific Indirect Effect through Forgiveness of Situations

$vs_{1,2} = a_1b_1$ versus $a_2b_2$; $vs_{1,3} = a_1b_1$ versus $a_3b_3$; $vs_{2,3} = a_2b_2$ versus $a_3b_3$

[†] $p < .10$; [*] $p \le .05$; [**] $p \le .01$; [***] $p \le .001$; [****] $p \le .0001$

5,000 bootstrap samples

Table 4

*Summary of Mediation Analyses*

|  | State Anxiety | | | Trait Anxiety | | |
|---|---|---|---|---|---|---|
|  | FS | FO | FSIT | FS | FO | FSIT |
| Ritualistic | -- | -- | -- | -- | -- | -- |
| Theistic |  | -- |  |  | -- |  |
|  | -- | -- | -- | -- | -- | -- |
| Existential | Indirect Only | | | Full Mediation | | |
|  | √ | -- | √ | √ | -- | √ |

Covariates were gender, age, education, ethnicity, marital status, and lifetime religiousness.
FS = Forgiveness of Self
FO=Forgiveness of Others
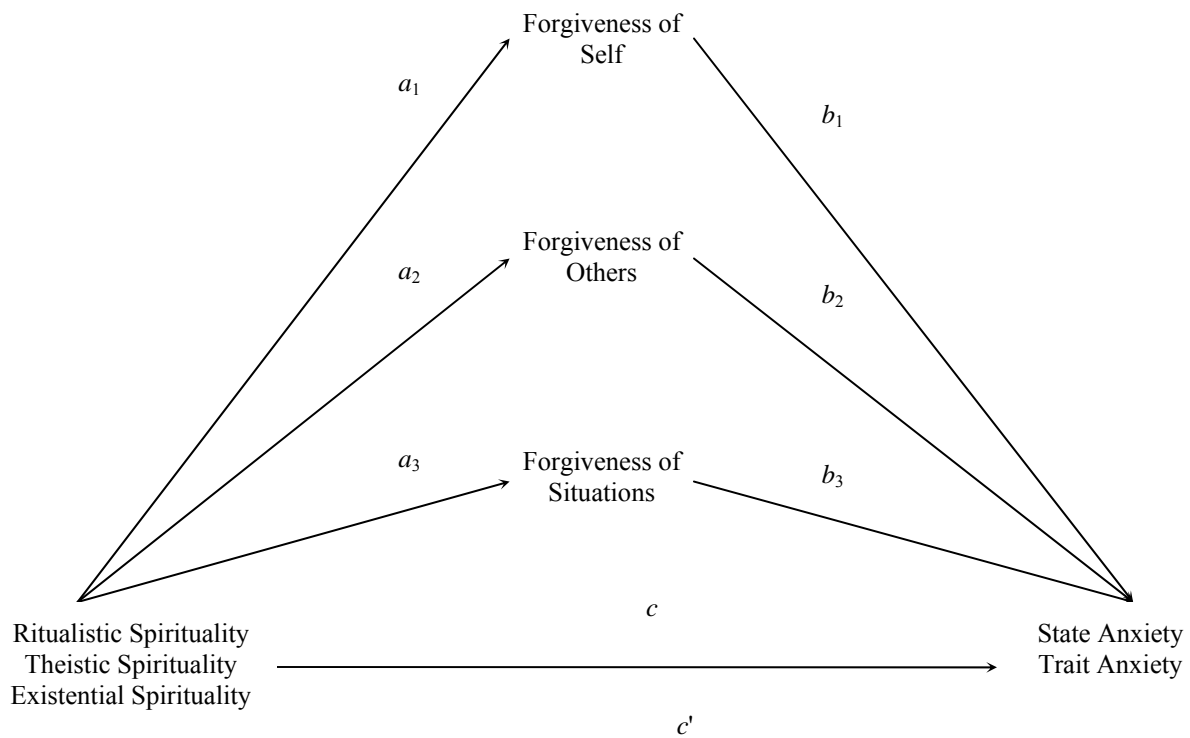FSIT=Forgiveness of Situations

*Figure 1*. Illustration of an Indirect Effects Model: Spirituality and Anxiety

$c$ = Total Effect: Spirituality affects Anxiety, without accounting for Forgiveness of Self, Forgiveness of Others, Forgiveness of Situations
$ab$ = Total Indirect Effect: Spirituality affects Anxiety through Forgiveness of Self, Forgiveness of Others, Forgiveness of Situations
$a_1b_1$ = Specific Indirect Effect: Spirituality affects Anxiety through Forgiveness of Self
$a_2b_2$ = Specific Indirect Effect: Spirituality affects Anxiety through Forgiveness of Others
$a_3b_3$ = Specific Indirect Effect: Spirituality affects Anxiety through Forgiveness of Situations
$c'$ = Direct Effect: Spirituality affects Anxiety after accounting for a Total Indirect Effect and/or a Specific Indirect Effect
Full Mediation = $c$ is reduced to a non-significant $c'$ by $ab$ and/or $a_1b_1$ and/or $a_2b_2$ and/or $a_3b_3$
Partial Mediation = $c$ is reduced, by $ab$ and/or $a_1b_1$ and/or $a_2b_2$ and/or $a_3b_3$, but $c'$ remains significant
Indirect Only Effect = $ab$ and/or $a_1b_1$ and/or $a_2b_2$ and/or $a_3b_3$, but no $c$ and no $c'$ in the first place
Adapted from Preacher and Hayes (2008a)