Effects of an Electronically Guided Prayer Intervention

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Effects of an Electronically Guided Prayer Intervention

by

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Effects of An Electronically Guided Prayer Intervention

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Abstract

Hope has been identified as an important factor in a variety of positive outcomes in psychotherapy, medicine, academic success, and for general levels of functioning. However, until now most studies on hope have been correlational in nature, and researchers have rarely sought to understand how hope can be facilitated. The present study considered the effect of prayer on experiences of hope in a national sample of Christian college students. An intervention group completed a guided prayer exercise once a day for 2 weeks. Pre and post-test levels of hope were assessed and compared to a control group, and a group that underwent daily relaxation exercises over the same 2-week period. The expectation was that hope would be increased in the prayer intervention group, but not in the relaxation group or the control groups. Results showed no significant time x group interaction effect when all 3 were compared, but a significant interaction effect was found when the prayer group was compared with the control group. Implications and suggestions for future research are discussed.
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Chapter 1

Introduction

In 1959 Karl Menninger reminded the fields of Medicine and Psychology of the importance of hope (Menninger, 1959). A few decades later Martin Seligman provided further reminder in his 2000 address about human flourishing to the American Psychological Association (Seligman & Csikszentmihalyi, 2000). Between these auspicious anchors, and since, the field of psychology has grown in its understanding of and interest in the phenomenon of hope. Researchers in psychology and medicine have consistently uncovered positive correlations between experiences of hope and healthy functioning in a variety of areas, including recovery from physical illness (Hollis, Massey, & Jevne, 2007), academic functioning (Snyder, 2002), propensity to use positive coping strategies (Chu-Hui-Lin Chi, 2007), protection against mental illness (Gilman, Schumm, & Chard, 2012), and in contributing to positive outcomes in the process of psychotherapy (Irving et al., 2004).

The Nature of Hope

Despite a substantial amount of research, the concept of hope remains, as Menninger (1959) described early on, “a basic but elusive ingredient in our daily work” (p. 79). One reason for this may be the disagreement in the field as to the precise nature of hope. Hope theorists express many differing views on the theorized mechanisms that drive our experiences of hope.

Seligman and early researchers placed an emphasis on hope as the expectancy of goal attainment (Snyder, Irving, & Anderson, 1991). This early thinking, as well as an emphasis on
cognition through the 80s and 90s, led theorists such as C.R. Snyder and his colleagues to develop what has come to be known as the Social-Cognitive theory of hope. Snyder’s (2002) theory of hope places an emphasis on the thought processes, namely goal identification, pathways thinking, and positive agency thinking, that underlie experiences of hope.

Other theorists differ from Snyder and his colleagues, insisting that hope arises from a deeper network of subsystems involving such components as spiritual wellbeing, attachment, optimism, as well as goal-oriented mastery. Accordingly, these theorists have proposed integrative models of hope that include more holistic conceptualizations (Dufault & Martocchio, 1985; Elliott & Sherwin, 1997; Scioli, Ricci, Nguyen, & Scioli, 2011). Scioli and his colleagues (2011) draw from a broad range of disciplines including psychology, philosophy, theology, psychiatry, and nursing to develop an understanding of hope “as a future-directed, four-channel emotion network, constructed from biological, psychological, and social resources. The four constituent channels are the mastery, attachment, survival, and spiritual systems (or subnetworks)” (Scioli et al., 2011; p. 79). Such an articulation is consistent with past theoretical constructions of the nature of hope, though various models include slight permutations of the fundamental components (Dufault & Martocchio, 1985; Elliott & Sherwin, 1997; Farran, Wilken, & Popovich, 1992).

The usefulness of a holistic conceptualization of hope continues to emerge when considered in the context of notions of hope found in everyday life. Hope in popular language takes many forms. The word itself has many usages; being used as a noun, verb, or an adjective, a reality that likely contributes to some of the difficulty in operationalizing hope. Similarly, it has a broad range of applications in human experience ranging from the mundane to the
supernatural. Larsen and Stege (2010) analyzed hope language employed by both therapists and clients in psychotherapy sessions. Their analysis of 5 therapists and 12 clients revealed common usages of hope language in psychotherapy grouped in five distinct categories: hope as cognitive goal focus, hope as behavior, hope as future oriented, hope as embodied emotion, and hope in relationships. The theory of hope proposed by Scioli et al. (2011) and other integrative theorists seem to fit well with the complex and multidimensional notions of hope that appear to be present in the therapeutic context. It follows, then, that holistic conceptualizations of hope are not only theoretically compelling but also may be particularly relevant for therapists attempting to address issues of hope with clients.

Hope and Spirituality

Among the various voices offering a definition of hope, one component that consistently emerges in much of the literature is the idea that spirituality often plays a role in the experience of hope (Ciarrochi, Dy-Liocci, & Denke, 2008; Dufault & Martocchio, 1985; Farran, Wilken, & Popovch, 1992; Scioli et al., 2011). Theoretical connections between hope and spirituality may be expected due to the historical emphasis that a variety of religious traditions have placed on hope. Theologian Jurgen Moltmann (1967) explicates exactly how important hope is to religious life in his expansive work *Theology of Hope*. He contends that a life of faith is synonymous with a life of hope. Picking up on this theme, researchers in psychology have conceptualized hope as a meaning-making process, arising when we come to understand and make significance out of our experiences, which clearly overlaps with religious and spiritual practices and beliefs (Averill, Catlin, & Chon, 1990). When considering that hope contains an element of spirituality reflected in the process of meaning making it is helpful to understand the distinction between hope and
optimism. A person can be hopeful even if not optimistic about a specific outcome. For example, Ai, Peterson, Tice, Bolling, & Koenig (2004) found that, among cardiac patients, hope can persist even when the subject is relatively pessimistic about future outcomes. Hope is also linked with the process of meaning making by the Apostle Paul when he makes the connection between faith and hope. He writes, “faith is the evidence of things hoped for and the conviction of things not seen” (Hebrews 11:1, NIV). Faith and hope appear to form an interlocking network in which each supports and may even perpetuate the other.

In addition to theoretical links between hope and spirituality, religious and spiritual activity has consistently been shown to positively correlate with increased experiences of hope. Pargament (1997) demonstrated that hope consistently correlates positively with positive religious coping, and negatively correlates with negative religious coping. That is, that those who utilize religious supports such as prayer, connection to a community, and reliance on God to cope with difficult circumstances generally report higher levels of hope. However, those who view difficult circumstances as punishment from God or express anger at God often report lower levels of hope. Such religious connections with hope are widespread and are not limited to a particular religious orientation, but have been demonstrated across belief systems and in diverse populations (Ai, Peterson, & Huang, 2003; Chang & Banks, 2007).

**Hope-Focused Interventions**

Despite the disagreements between the precise definition and mechanisms underpinning the benefits of hope, a large body of research has emerged over the past few decades that the presence of hope is indeed beneficial (Cheavens, Michael, & Snyder, 2005). Hope has been linked to human flourishing (Seligman & Csikszentmihalyi, 2000). In the therapy context, hope
has been identified as one of four factors contributing to change in psychotherapy across a variety of approaches (Miller, Duncan, & Hubble, 1997). Due to the variety of the positive correlates and the perceived benefits of hope, facilitating hope in the context of psychotherapy may be a highly effective way of improving the wellbeing of clients in both individual and group therapy settings (Yalom & Leszcz, 2005). An important task facing psychotherapists, then, is to understand better how they can explicitly work to increase hope in clients. In recent decades, researchers have begun the process of evaluating how to facilitate hope in clients.

A few exploratory studies have sought to manipulate the antecedents to hope in medical and therapeutic contexts for the purpose of exploring the possibility of explicitly attempting to increase hope. Irving et al. (2004), postulate that increasing goal awareness and a focus on client strengths may help enhance hope for change in therapy. Hert (2001) developed an eight-week hope-focused intervention for cancer patients, building her intervention around a model of hope that included experiential, relational, spiritual and rational processes. Almost all (98%) of the patients who participated in the intervention stated that they found the intervention “extremely helpful,” with the other 2% stating that it was “helpful”. This suggests that hope can be affected when attended to directly. Both of the studies mentioned suggest different pathways to increasing hope, but each provided evidence that hope can be affected when attended to directly.

Prayer as an Intervention

In the early 18th century theologian and philosopher Soren Kierkegaard observed that “prayer does not change God, but changes the one who prays” (as cited in Zaleski & Zaleski 2005, p. 99). From the “OM” prayer offered by a Buddhist monk to the Sweats of the a Native American shaman to the prayer of confession and repentance in the Judeo-Christian tradition,
many forms of prayer seek to connect with the divine, not to change the world as much to change
the one who prays (Zaleski & Zaleski, 2005).

The idea that prayer changes the one praying more than it changes the world has not
always been clear within psychological research. Indeed, much of the published research has
often focused on the efficacy of intercessory prayer or petitionary prayer to obtain results. Two
meta-analyses have been reported looking at the effectiveness of intercessory prayer
interventions, coming to differing conclusions. Masters and Spielmans (2007) conducted a meta-
analytic review of studies on prayer using the random effects model, concluding that no effect
was found. Hodge (2007), however, conducting a similar review, without pooling the groups to
gather a single effect, found significant effect of the prayer intervention. The differences in
conclusions may be the result of different approaches to statistical analysis, which may indicate
that further research is needed to understand the effects of prayer.

Despite disagreement in the literature surrounding distant, intercessory prayer, there is
solid support for the benefits of prayer as an intrapersonal process. Ai, Bolling, & Peterson
(2000) found prayer to play a significant role in the process of emotional control. Similarly, the
presence of prayer and religious commitment prior to treatment has been found to correlate with
decreased anxiety and depression in older cardiac patients (Ai et al., 2010). Not only has prayer
been shown to correlate with increased emotional control and wellbeing, but has also been
shown to increase behaviors related to positive mental health outcomes in those who pray.
Vasiliauskas and McMinn (2013) demonstrated significant effects of a prayer intervention on the
process of forgiveness. When considering that prayer may be both a protective factor against
negative outcomes and a means of coping that facilitates resilience, it follows that prayer itself may provide a useful tool to specifically increase hope.

**Prayer and Hope**

Prayer has received mixed findings in its relationship with hope in correlational studies. A study by Jankowski and Sandage (2011) found a positive relationship between meditative prayer and hope. However, in a similar study by Ciarrocchi et al. (2008), no relationship was found between hope and religious behaviors, including private prayer, attendance at religious services, congregational support, and identification as a religious person. Still, Ciarrocchi et al. (2008) did find that positive relational percepts with the divine, level of spiritual commitment, and meaning-making predicted significant variance in levels of both hope and optimism. One explanation offered by Ciarrocchi and his colleagues for the results is that participation in religious rituals is not a sufficient condition for an effect, but rather it is the way that one engages religious and spiritual activity that has greater bearing on outcomes. This research is consistent with observations made by Richards and Bergin (1997) that the kind of prayer one engages in and the way one prays may influence the intrapersonal impact of that prayer. Thus the findings by Jankowski and Sandage (2011) may gain new relevance in their assessment of meditative prayer and its relationship to experiences of hope.

The present study seeks to take another step in the investigation of prayer by looking at the effects of a prayer intervention on levels of hope for the one who prays. Prior research suggests that religious practices, including prayer, correlate positively with hope, but the nature of the relationship remains unclear. Hope may be the product of religious practices, but it may be that hope propels us to engage in religious practices. The present study will help to determine
the causative effects of prayer on levels of hope by employing an experimental design. Due to the strong connection between religious coping, meaning-making, and positive outcomes it is hypothesized that focused meditative prayer exercises will promote hope.
Chapter 2

Methods

Participants

A sample of 110 undergraduate volunteers recruited from psychology undergraduate courses at Christian colleges across the nation completed the study. Initially, 228 participants signed up for the study. One hundred sixty-four (71.9% of those who volunteered) participants completed the pre-test, and 110 (67% of those who completed the pre-test, 48% of those who volunteered) participants completed the post-test. Each participant downloaded an app created by the researchers to administer a relaxation exercise \( n = 36 \), a prayer exercise \( n = 35 \), or no intervention \( n = 39 \), with participants being randomly assigned to each group. The sample is considered representative of the population of undergraduate Christian colleges with the following distribution: European-American (83.6%), Hispanic or Latino/a (4.5%), African American (2.7%), Asian American (2.7%), Native American (2.7%), and Other (3.6%). The average age of participants was 19.7 years. The gender distribution consisted of 75.5% identifying as female and 24.5% identifying as male.

Instruments

The following instruments were administered before and after the intervention in all three conditions.

State Hope Scale. Hope was measured using the State Hope Scale created by Scioli et al. (2011; see Appendix A). The State Hope Scale is a 40-item scale, scored on a 5-point Likert-
type scale, consisting of 10 subscales clustered around the 4 theoretically derived subsystems of mastery, attachment, survival, and spirituality. Convergent validity was demonstrated with existing measures of hope. A Cronbach’s alpha of .93 was reported for the State Hope Scale (Scioli et al., 2011).

**Religious Commitment Inventory.** The RCI-10 was used to assess for participants religious commitment developed by Worthington et al. (2003; see Appendix B). The RCI-10 consists of 10 5-point Likert-type scale questions ranging from 1 = *not at all true of me* to 5 = *totally true of me*. Worthington et al. (2003) found Cronbach’s alpha measurements ranging from .88 to .98. Test retest was conducted, showing good temporal stability with correlations of .84 and .87 at three weeks and five weeks, respectively. Additionally, convergent validity was established using other measures of religious commitment, showing that those who self-identified as non-religious scored significantly lower than those who self-identify as religious.

**The Dedication to the Sacred Scale (DS).** The DS is a five-item measure designed to assess for the level of relational spirituality (Davis, Worthington, Hook, & Van Tongeren, 2009; see Appendix C). The DS demonstrates a consistent one-factor structure with confirmatory factor analysis demonstrating a range of .72 to .95 across the items. A Cronbach’s alpha .88 was reported, showing strong internal consistency. Additionally, the DS is positively correlated with other measures of religiosity, as well as revealing higher scores for those who self-identified as religious than for those who self-identified as non-religious or atheist.

**Demographic Questionnaire.** A basic demographic questionnaire was used to gather standard demographic information including age, gender, ethnicity, education, and marital status. See Appendix D. Additionally two questions measured the interest and commitment at the
beginning and the end of the intervention. An example of the demographic questionnaire and commitment questions are present in the appendix.

**Perceived Stress Scale (PSS-4)**: The PSS-4 is a four-item questionnaire that is designed to measure the extent to which events are perceived as stressful across a few domains of life. (Cohen, Tamarck, & Merrelstein, 1983; see Appendix E) The overall alpha coefficient shows good reliability ($\alpha = .85$). Good convergent validity was demonstrated when compared to measures looking at related constructs. Additionally, the test-retest data was strong showing a correlation of .85.

**Procedures**

Professors of undergraduate courses in psychology were contacted via e-mail and asked to advertise the opportunity to participate in the study. Participants were asked to indicate initial interest by signing up in their classes with the offered incentive of being randomly selected to receive one of ten $50 gift cards. After participants signed an informed consent form that outlined information relevant to the study, a pre-test was delivered electronically, which consisted of the State Hope Scale, the Religious Commitment Inventory, the Dedication to the Sacred Scale, and the Perceived Stress Scale. Demographic data were also collected. Participants were then given instructions for downloading the application (app), which, once downloaded, randomly assigned participants to one of three groups consisting of a control group, a relaxation group, and a prayer group. The prayer intervention consisted of a 5-minute guided prayer exercise, which the participants completed daily over a 2-week period. A script for the prayer exercise is provided in the appendix. Participants placed in the relaxation group were guided through a daily relaxation exercises. The control group received no intervention. Each
group also completed a daily hassles rating, which rated their daily level of frustration and stress. Participants then completed a post-test, which consisted of a re-administration of the State-Hope Scales as well as the Perceived Stress Scale, Religious Commitment Inventory, and Dedication to the Sacred Scale.
Chapter 3

Results

Means and standard deviations on the various scales collected before and after the intervention are reported in Table 1. Correlations of pretest scores are reported in Table 2. According to the stated Hypotheses 1 expected an interaction effect between the repeated-measures variable (change over time) and the experimental condition (prayer, relaxation, or control). When results were analyzed with a mixed model ANOVA with the three conditions, no significant interactions were found, $F(2, 107) = 1.93, p = 0.15$. Trend lines in this analysis suggested the possibility that the study lacked enough power to detect real differences (see Figure 1). Subsequently, the results were analyzed with another mixed model ANOVA using only two of the experimental conditions (prayer vs. control) and a significant interaction effect was observed, $F(1, 73) = 6.2, p = 0.02$, Cohen’s $d = .69$.

Table 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS</td>
<td>29.5(4.5)</td>
<td>28.4(5.8)</td>
</tr>
<tr>
<td>DS</td>
<td>6.0(.79)</td>
<td>5.3(1.6)</td>
</tr>
<tr>
<td>RCI</td>
<td>3.78(.67)</td>
<td>3.45(.89)</td>
</tr>
<tr>
<td>PSS</td>
<td>2.62(.68)</td>
<td>2.88(.88)</td>
</tr>
</tbody>
</table>
Table 2

Correlations for Pretest Scores

<table>
<thead>
<tr>
<th></th>
<th>Hope- Pretest</th>
<th>RCI- Pretest</th>
<th>DS- Pretest</th>
<th>PSS- Pretest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope- Pretest</td>
<td>1.00</td>
<td>.595</td>
<td>.598</td>
<td>- .569</td>
</tr>
<tr>
<td>RCI- Pretest</td>
<td></td>
<td>1.00</td>
<td>.695</td>
<td>- .122</td>
</tr>
<tr>
<td>DS- Pretest</td>
<td></td>
<td></td>
<td>1.00</td>
<td>- .12</td>
</tr>
<tr>
<td>PSS- Pretest</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

Figure 1. Means across groups.

A compliance check indicated a relatively high rate of compliance, see Table 3 for data.

Because the intervention was completed with an electronic app, I was able to determine actual
compliance (based on the backend server) as well as self-reported compliance. The correlation between the actual and reported compliance was .76. In order to determine the effects of compliance, participants with fewer than seven actual completions were removed and the previously-described analyses were repeated. Similar results were found. A mixed model ANOVA with the three conditions again showed no significance $F(2, 76) = 2.46, p = 0.09$. A mixed model ANOVA comparing the prayer group with the control group again showed significant increases in hope $F(1, 56) = 7.78, p = 0.01$. Additionally, we analyzed the results to review whether simply participating in any form of intervention produced significant results, by grouping the prayer group and the relaxation group in to one “attention” group. A mixed model ANOVA comparing the “attention” group to the control group showed that any sort of attention in the study resulted in significant increases in hope, $F(1, 77) = 4.24, p = 0.04$. However, when comparing the relaxation group to the control group, no significant interaction effect was found, $F(1, 56) = 1.23, p = 0.27$.

Table 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>Prayer $(N = 35)$</th>
<th>Relaxation $(N = 34)$</th>
<th>Control $(N = 39)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported</td>
<td>9.87(3.67)</td>
<td>10.78(3.55)</td>
<td>12.91(2.72)</td>
</tr>
<tr>
<td>Actual</td>
<td>8.64(4.53)</td>
<td>9.4(4.43)</td>
<td>12.64(2.68)</td>
</tr>
</tbody>
</table>

Changes over time were also evaluated for other scales to assess for any effect observed in perceived stress, religious commitment, and dedication to the sacred. For each of these
measures, no interaction effect was observed between groups from time one to time two. This was true for the RCI, $F(2, 105) = 1.22, p = 0.29$, the Dedication to the Sacred Scale, $F(2, 104) = 0.26, p = .774$, and the Perceived Stress Scale, $F(2,105) = 0.94, p = .39$. Further, for the daily hassle score there was no significant difference when comparing the level of daily hassles reported at the beginning of the study when compared to the end of the study, $F( 2,107) = 1.39, p = .253$. 
Chapter 4

Discussion

A review of the hope literature from past several decades allows for at least one clear conclusion: Hope has consistently emerged as an important variable for human flourishing. However, the majority of this research has been correlational in nature, demonstrating that when hope is present, variables across several domains of life improve. The present study attempts to further investigate ways of facilitating the development of such an important variable. A holistic, multi-dimensional conceptualization of hope theorizes that spirituality and religious practices may contribute, at least in part, to one’s experience of hope.

Results from the study suggest that engaging in positive religious practices, such as a prayer exercise, may facilitate increases in levels of hope. This has implications for both how we think about prayer and how we think about hope. The results in the present study are consistent with previous research indicating that hope as a variable can be directly changed. Due to the importance of hope across domains of functioning and the fact that it can be influenced may open up hope to more focused interventions. Future trends in how we understand constructs of positive psychology may see hope emerge as an important psychological construct to be targeted by interventions in a variety of contexts. The present study adds to the conversation by suggesting and demonstrating that using spiritual interventions to target hope may be particularly effective given the spiritual and religious components of hope. Consistent with the primary
hypothesis, these results indicate that engaging in prayer exercises may positively impact levels of hope when compared to a control group.

It is important to consider that the initial analysis with three groups did not show the expected interaction effects in hope changes over time. This suggests a degree caution be used when interpreting the data. It is possible that with a larger sample size or a more potent intervention results would have been significant. However, the current results raise the question of the efficacy of the prayer intervention to facilitate hope when compared to a relaxation intervention. The inclusion of the relaxation group allowed the researchers to compare the effect of a variety of activities on levels of hope. Given that the prayer intervention did not show a significant impact on levels of hope when compared alongside the relaxation group, it is possible that there may be overlapping experiences for both the relaxation group and the prayer group participants. For instance, it is possible that the relaxation that takes place when participating in a prayer exercise accounts for some of the observed effect, indicating that efficacy of prayer is not limited to one’s connection to or interaction with the Divine.

Several additional analyses of the data help to elucidate the findings as well. For instance, it is notable that when compared independently to the control group with two mixed model ANOVA’s, the prayer group showed significant changes, but the relaxation group did not. Further, when the prayer and the relaxation groups were combined into one “attention” group, analysis revealed a significant increase in hope compared to the control group. This likely supports the hypothesis that given more power in the study that the primary hypothesis may have been confirmed. This finding also confirms that there was something about participating in a prayer or relaxation exercise that significantly affected experiences of hope. One interesting area
of exploration that arises out of these findings has to do with the mechanisms that are in play when thinking about prayer as an intra-psychic phenomenon rather than simply a means of testing whether it can manipulate variables at a distance. There are likely overlapping experiences when one compares the experience of prayer and the experience of relaxation. However, it seems likely that the act of praying brings an additive component that may connect one to a larger community or the Divine in a way that simple relaxation does not. Given the relational underpinnings of hope, it is not surprising that adding prayer may have a different kind of impact on experiences of hope when compared to relaxation exercises. Further research may be helpful in understanding the psychological and spiritual processes that may account for the gap between the changes observed in the relaxation group and those observed for the prayer group.

It seems likely that there is something present in the experience of prayer that positively impacts levels of hope that is not present in the relaxation exercise. When these results are considered in the context of Scioli et al.’s (2011) multidimensional theory of hope, it confirms that spirituality may play an important part of one’s ability to form and maintain hope. This, in turn, has important implications for how clinicians may go about constructing interventions aimed at increasing levels hope. Data from the study suggests that prayer interventions that are intended to increase levels of hope can be a meaningful exercise.

**Limitations**

As is true with most technological advancements, there are likely both positive and negative implications when technology is introduced into new arenas. On the positive side, the use of an app in the intervention allowed the researchers to track compliance and to monitor
participation in the study in real time. Additionally, the use of technology to deliver the intervention allowed the researchers to draw from a nationwide sample, including participants that would otherwise have been excluded due to geographical constraints. In this sense the use of technology broadened the scope of those who could participate in the study. Conversely, there were some parts of the technology that was used that artificially limited the number of those who could participate. Because the app was designed for an Apple device, the participants were limited to those who had an iPad or an iPhone. While the use of such devices is relatively widespread, there is a certain level of selection bias that is introduced when such limitations are placed on participation in the study.

Another possible limitation related to the use of technology was that we were unable to directly monitor how the participants used the intervention. For instance we were able to track when and how many times a particular participant opened the app and completed the intervention, but we are not able to determine the extent to which the participant engaged with the material. It is possible that they simply opened the app and then let the program run while they were attending to other business. The level of engagement in both the prayer exercise and the relaxation exercise may have significant implications for the results observed. Generally, there appears to be both ways in which the use of technology can allow researchers to get a better understanding of their participants and to more closely monitor various components of a study and there are ways that it may produce distance.

In addition to limitations around the use of technology in the intervention, it is possible that the procedure used in the study opened up the possibility of some level of selection bias. The study asked volunteers to come sign up on their own and to persist through the course of the
There were moderate levels of attrition, which is a limitation in and of itself, but it also suggest that those who participated in the study may have intrinsically possessed higher levels of hope or have been predisposed to responding to a hope intervention based on individual characteristics. Additionally, the population that the sample was taken from was a mostly white, Christian undergraduate population. This sample likely has some intrinsic factors that may influence the way they respond to a hope intervention. For instance, most have achieved a relatively high level of education, they are more likely to be from a higher socio-economic background, and may be predisposed to be positively oriented toward their future given their educational standing. It is not known how these results would generalize to a broader population or to a sample taken from a clinical population.

**Future studies**

Given the findings of the present study, several interesting possibilities emerge for further research. One feature of the present study was the limited time frame. The study was limited in that it only measured the effect of the intervention over a short period of time. As mentioned earlier, questions about the stability of the construct of hope are left unanswered, and increasing the power of the intervention might allow future researchers to detect differences that were not detected in this study. A longer term study could evaluate whether the observed effects were stable over time, or if the impact of the prayer intervention caused a spike in levels of hope that returned to baseline over time.

Additionally, questions about the how the results will generalize to various populations remain unanswered. The current study was completed with undergraduate college students, but further studies looking at how to promote hope in diverse populations such as clinical
populations or adolescents would be useful. Since hope has been shown to be an important component of human flourishing, it would be interesting to explore the application of a prayer intervention that has been tailored into a clinical intervention. Not only would this expand the population being considered, but it would also answer interesting questions about the benefits of hope in promoting functioning in various populations.

Conclusion

Hope continues to be an important construct that can provide researchers in the field of psychology a rich area of study. Past contributions to the literature surrounding hope have established it as a clearly identifiable and significant indicator of overall health. The current study provides an important first step in advancing the literature on hope in that it moves the research design from a correlational approach to an experimental design; looking to verify methods of increasing the levels of hope experienced by participants. Our hope is that the intervention implemented here serves as a starting point from which future research can advance the field’s understanding of how hope can be facilitated.
References


Appendix A

Comprehensive Hope Scale, State

My Recent Thoughts and Feelings: This section deals with your current and recent thoughts and feelings. That is, how you feel today and over the past two weeks.

<table>
<thead>
<tr>
<th>None or Little</th>
<th>Weak</th>
<th>Strong</th>
<th>Extremely Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

___ 1. I feel hopeful about achieving a major life goal.
___ 2. I feel loved by someone.
___ 3. My emotions are under control.
___ 4. I have felt a spiritual presence.
___ 5. I can turn to a good friend or family member to help me relax.
___ 6. I am able to rely on outside help to achieve my goals.
___ 7. I feel let down by someone that I trusted.
___ 8. I’m able to rely on my spiritual beliefs to lesson my anxiety.
___ 9. Everyday I’m getting closer to achieving my dreams.
___ 10. I feel very close to a friend or family member.
___ 11. I feel “trapped” in some part of my life.
___ 12. I draw inspiration from my spiritual beliefs.
___ 13. I’m finding it hard to trust people.
___ 14. A good way for me to reduce stress is to spend time with my friends and/or family.
___ 15. I feel supported in reaching my goals.
___ 16. I have felt connected to a spiritual force.
___ 17. I feel calm and collected.
___ 18. I have used prayer or meditation to help me accomplish an important goal.
___ 19. I feel like I’ve “dug myself into a hole”, and there is “no way out”.
None or Little   Weak   Strong   Extremely Strong
0        1       2       3            4

__20. I have used prayer or meditation to help me reduce my worries.

__21. I’m making progress towards important goals.

__22. I feel part of a group.

__23. I can handle any current or future difficulties.

__24. I felt very close to a higher power or spiritual force.

__25. My friends or family are helping me to lower my anxiety.

__26. I’m accomplishing a lot because of the help I get from family and friends.

__27. I question whom I can trust.

__28. My spiritual beliefs give me a feeling of security.

__29. I’m succeeding in ways that really matter to me.

__30. I feel that I matter to someone.

__31. With each day, I feel that some of my freedom is slipping away.

__32. My faith in a higher power gives me the strength to pursue my dreams.

__33. I worry that someone may betray me.

__34. My family or friends have a calming effect on me.

__35. There are people in my life that are inspiring me to do my best work.

__36. I have felt “at one” with a spiritual force or presence.

__37. I might get rattled if my life gets any tougher.

__38. Spiritual guidance is contributing to my success in life.

__39. I’m running out of options for improving my life.

__40. My spiritual beliefs are a source of emotional comfort.
Appendix B

Religious Commitment Inventory

Please rate how each statement applies to you on a scale from 1 to 5

Not at all true of me

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I often read books and magazines about my faith.</td>
<td></td>
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<tr>
<td>2. I make financial contributions to my religious organization.</td>
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<tr>
<td>3. I spend time trying to grow in understanding of my faith.</td>
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<tr>
<td>4. Religion is especially important to me because it answers many questions about the meaning of life.</td>
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<tr>
<td>5. My religious beliefs lie behind my whole approach to life</td>
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<tr>
<td>6. I enjoy spending time with others of my religious affiliation.</td>
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<tr>
<td>7. Religious beliefs influence all my dealings in life.</td>
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<tr>
<td>8. It is important to me to spend periods of time in private religious thought and reflection.</td>
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<tr>
<td>9. I enjoy working in the activities of my religious organization.</td>
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<tr>
<td>10. I keep well informed about my local religious group and have some influence in its decisions.</td>
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Appendix C

The Dedication to the Sacred Scale (DS)

Please Rate each question as it applies to you. With 1 being strongly disagree, and 7 being strongly agree.

1. My relationship with the Sacred is more important to me than almost anything else in my life.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<td>5</td>
<td>6</td>
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<td>7</td>
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</tbody>
</table>

2. I want my relationship with the Sacred to stay strong no matter what rough times I may encounter.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<td>7</td>
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</tbody>
</table>

3. I like to think of the Sacred and me more in terms of “us” and “we” than “me” and “him/ her/ it.”

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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</table>

4. My relationship with the Sacred is clearly part of my future life plans.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>5</td>
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</table>

5. It makes me feel good to sacrifice for the Sacred.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</table>
Appendix D

Demographics Questionnaire

**Personal Information**
Age of Participant: ______________
Years of Education: ____________
Religion ________________________
Gender (Circle): M / F

Ethnicity (Circle):
European-American  African-American  Asian/Pacific Islander
Latino/Hispanic  Native-American  Mixed-Race  Other

How confident are you in your ability to complete this study (1 = low; 5 = high)
1 - 2 - 3 - 4 - 5
Appendix E

Perceived Stress Scale
PSS-4

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, please indicate HOW OFTEN you felt or thought a certain way.

Never  Almost Never Sometimes  Fairly Often  Very Often
1      2        3           4           5

1. In the last month, how often have you felt that you were unable to control the important things in your life?

2. In the last month, how often have you felt confident about your ability to handle your personal problems?

3. In the last month, how often have you felt that things were going your way?

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
Appendix F

Curriculum Vitae

Brian L. Goetsch

305 S. Center St., Newberg, Oregon 97132
(918) 813-0481
bgoetsch10@georgefox.edu

Education

8/2010- present  Doctor of Psychology, Clinical Psychology (Expected May, 2015)
Graduate Department of Clinical Psychology (APA Accredited)
George Fox University, Newberg, Oregon
Doctoral Dissertation: Effects of an electronically administered prayer intervention on experiences of hope.
Chair: Mark McMinn, Ph.D.
Successfully Defended: April 22\(^{nd}\), 2014

8/2010-5/2012  Master of Arts, Clinical Psychology
Graduate Department of Clinical Psychology (APA Accredited)
George Fox University, Newberg, Oregon

8/2002-5/2006  Bachelor of Arts, English Literature
Wheaton College, Wheaton, Illinois

Supervised Clinical Experience

8/2014-Present  Pre-Doctoral Internship
*Denver Health Medical Center, Denver, Colorado*

Supervisors: Dan Schoenwald, PhD; Alison Lieberman, PsyD

Major Rotations: Adult Outpatient Behavioral Health (6 month rotation), Adult Psychiatric Inpatient and Consult-Liaison Service (6 month rotation).

Minor Rotations: Psychiatric Emergency Services, Oncology Clinic, Bariatric Evaluations, Psychological Assessment Rotation

Description:
- On the Adult Inpatient and Consult-Liaison service, I provided evaluation, consultation and intervention services for patients with
severe and persistent mental illness or experiencing acute episodes of mental illness.

- With the Psychiatric Emergency Services, provided evaluation and referral services within the acute emergency services unity for patient’s experiencing acute onset of a variety of psychiatric presentations.
- Provided evidence-based outpatient therapy services to a low income and underinsured population, with a range of psychological needs and presentations.
- Worked within integrated care systems to address psycho-social components of medical treatments including Cancer treatment and Bariatric Surgery.
- Conducted comprehensive Psychological evaluations for the child inpatient team including cognitive, personality, and neuropsychological testing.

7/2013-7/2014  
**Pre-Internship**  
*Portland VA Medical Hospital, Portland, Oregon*  
Supervisors: John Donahue, PsyD; Bret Fuller, PhD  
**Setting and Population:** VA hospital working with adult veterans and medical patients  

**Description:**  
- Served in rotations including outpatient mental health, health psychology, palliative care, and general psychiatry.
- Worked on a multidisciplinary team with physicians, social-workers, nurse practitioners, and psychiatrists to collaborate on treatment of patients
- Conducted psychological and neuropsychological assessment batteries for veterans
- Provided individual, couples, and group therapy patients in an outpatient, hospital, and in-patient settings.

8/2011 - Present  
**Supplemental Practicum**  
*George Fox Behavioral Health Clinic, Newberg, Oregon*  
Supervisors: Joel Gregor, PsyD, Kurt Free, PhD (Consultant)  
**Setting and Population:** Community mental health clinic working with 2 long-term adult clients in once a week therapy.

**Description:**  
- Provided psychodynamic psychotherapy to two long-term adult clients.
- Engaged monthly psychodynamic consultation
Practicum II
*Willamette Family Medical Center, Salem, Oregon*

**Supervisor:** Joel Gregor, PsyD, MFT, Carlos Taloyo, PhD

**Setting and Population:** Primary care medical clinic seeing diverse medical patients with behavioral health and mental health concerns

**Description:**
- Provided behavioral health consultation, outpatient psychotherapy, and assessment services to patients at a primary care medical clinic.
- Conducted diagnostic psychological and personality assessments for clinic patients
- Provided individual, family, couples, and group therapy for patients ranging from 4 to 79 years old.
- Conducted about half of psychological services in Spanish
- Provided didactic training of psychological interventions and collaboration for medical staff

Smoking Cessation Group
*Willamette Family Medical Center, Salem, Oregon*

**Supervisor:** Joel Gregor, PsyD, MFT

**Setting and Population:** Primary care medical clinic seeing medical patients battling smoking additions

**Description:**
- Developed a smoking cessation program for patients in a primary care medical clinic
- Maintained weekly group meetings for review of cessation curriculum

Parenting Education Group
*George Fox Behavioral Health Clinic, Newberg, Oregon*

**Supervisor:** Joel Gregor, PsyD, MFT

**Setting and Population:** Community mental health clinic teaching parenting skills to adults

**Description:**
- Conducted outreach and program development for clinic services
- Organized and facilitated a parenting support group for those raising children within the community.

Practicum I
*George Fox Behavioral Health Clinic, Newberg, Oregon*

**Supervisor:** Joel Gregor, PsyD, MFT

**Setting and Population:** Community mental health clinic seeing children and adults
Description:
• Provided outpatient psychotherapy and assessment services for uninsured or underinsured members of the community.
• Conducted individual, couples, and family therapy for clients with a range of presenting problems.
• Conducted psychological assessments
• Facilitated connections with community through outreach and development

8/2010 - 5/2012  
**Pre-Practicum I & II**  
*George Fox University, Newberg, Oregon*  
**Supervisors:** Mary Peterson, PhD; Sarah Vasiliauskas, M.A.  
**Setting and Population:** University counseling center seeing 2 college-age students

Description:  
• Provided outpatient individual client-centered psychotherapy to university students, conducted intakes, wrote treatment plans, and evaluated diagnoses.

Research and Professional Writing

4/2013  
**Guest Editor:** Special Edition of the *Journal of Psychology and Theology.* Winter, 2014. Spiritual formation of graduate students in religiously affiliated doctoral training programs in clinical psychology.  
Co-Editor: Mark McMinn, PhD, ABPP, CL

4/2014  
**Doctoral Dissertation:** *The effects of an electronically administered prayer intervention on experiences of hope.* George Fox University, Newberg, Oregon  
Committee: Mark McMinn, PhD, APBB/CL (chair); Winston Seegobin, PsyD; Kathleen Gathercole, PhD  
**Successfully Defended:** April 22nd, 2013  
• Examined the efficacy of an electronically administered prayer intervention to facilitate experiences of hope.

9/2013 – 12/2013  
**Program Evaluation Consultant:** *Assessing the Spiritual Formation of Graduate Students in the Department of Clinical Psychology.* George Fox University, Newberg, Oregon
1/2012 – 6/2014  **Research Team Member:** George Fox University, Newberg, Oregon  
Chair: Mark McMinn, PhD, ABPP/CL

1/2012 – 5/2013  **Research Assistantship:**  
George Fox University, Newberg, Oregon  
Professor: Nancy Thurston, PsyD, ABPP/CL  
- Worked as a consultant to conduct outcome data research for clergy candidate evaluations.

**Peer Reviewed Publications**


**National Presentations**


Goetsch, B.L., Thurston, N.M. (April, 2013). Outcome data in clergy candidate evaluations. Paper presentation at the Christian Association for Psychological Studies. Portland, OR.


### Relevant Teaching and Academic Appointments

<table>
<thead>
<tr>
<th>Date</th>
<th>Position/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/2013 - Present</td>
<td><strong>Graduate Assistant</strong>&lt;br&gt;Graduate Course: Clinical Foundations of Treatment – George Fox University, Graduate Department of Clinical Psychology, Newberg, Oregon&lt;br&gt;Professor: Carlos Taloyo, PhD</td>
</tr>
<tr>
<td>8/2013 - Present</td>
<td><strong>Peer Oversight</strong>&lt;br&gt;Graduate Level Oversight: Supervision and Management – George Fox University, Graduate Department of Clinical Psychology, Newberg, Oregon&lt;br&gt;Professor: Roger Bufford, PhD</td>
</tr>
<tr>
<td>4/21/2013</td>
<td><strong>Training for clinical staff</strong>&lt;br&gt;Assessment and treatment of ADHD within a primary care setting&lt;br&gt;Willamette Family Medical Center, Salem, Oregon&lt;br&gt;• Presented research results from assessment and intervention cases treating ADHD in the clinic population to clinic staff&lt;br&gt;• Also presented intervention strategies and collaboration techniques between providers</td>
</tr>
<tr>
<td>8/2012</td>
<td><strong>Guest Lecturer</strong>&lt;br&gt;Undergraduate Level Course: Theories of Personality and Development - George Fox University, Psychology Department, Newberg, Oregon</td>
</tr>
</tbody>
</table>
Related Professional Experience

2/2008-6/2010  **Case Manager** (32 hours a week)
*Mental Health Association in Tulsa, Columbia Teen Screen Program Tulsa, Oklahoma*

*Population Served:* High school and middle school students and their families  
*Supervisors:* Chris Siemens, M.A.; Mike Brose, LCSW

*Description:*
- Helped facilitate a mental health and suicide risk assessment screening to high school and middle school students.
- Provided psycho-education and referral information to families and high school students participating in the Columbia Teen Screen Program.
- Provided Spanish translation services for the masters-level therapist conducting the screening.

7/2008- 8/2010  **Youth Pastor**
*Tulsa Christian Fellowship, Tulsa, Oklahoma*

*Description:*
- Provided pastoral care, mentoring, and counseling to students 7th-12th grade.

2/2009-6/2010 **Project Developer: Youth Outreach Services**
*Mental Health Association in Tulsa, Tulsa, Oklahoma*

*Description:*
- Conducted research on LGBTQ bullying and prevention patterns in local High Schools.
- Collaborated with Tulsa area high schools to create a curriculum to address bullying of LGBTQ students.

*Family and Children’s Services, Tulsa, Oklahoma*

*Description:*
- Conducted home-based needs assessments for families enrolled in Head Start programs.
- Provided referral and linkage services to meet the needs of families in the Head Start program.
- Provided Spanish language translation for teachers and educators for various workshops conducted for families in the program.

7/2006-7/2007 **High-School English Teacher**  
*CEAD Escuela Bilingue, Tegucigalpa, Honduras*  
**Description:**  
- Taught high school English classes to 8th-11th grade  
- Created and implemented the language development curriculum for high school English language learners.

**Scholarships and Awards**

2011 - present **Diversity Scholarship:** Awarded for outstanding contribution to a multicultural understanding of psychology within the community at George Fox University.

2012 **Richter Scholars Grant for Independent Research:** *Effects of an electronically guided prayer exercise on experiences of hope.*

2013 **Richter Scholars Travel Grant:** Funds awarded to attend annual convention of the American Psychological Association, Honolulu, HI.

**Current Professional Affiliations**

1/2011- Present **American Psychological Association,** Student Affiliate

1/2011- 1/2013 **Oregon Psychoanalytic Center,** OPC, member

8/2013- Present **Division of Psychoanalysis,** APA, Division 39

8/2012- Present **Christian Association for Psychological Studies,** Student Affiliate

**References**

References from current faculty advisor or clinical supervisor can be provided upon request. Please send and email to bgoetsch10@georgefox.edu for contact information.