

Can Prayer Increase Gratitude?

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The objective of these studies was to determine the strength and direction of the relationship between prayer and gratitude. In Study 1 ($n = 674$), the authors replicated the cross-sectional association between prayer frequency and gratitude that has been demonstrated in previous research. In Study 2 ($n = 780$), prayer frequency predicted gratitude 6 weeks later even when controlling for initial gratitude and religiosity. In Study 3 ($n = 832$), the authors replicated this longitudinal relationship, this time also controlling for socially desirable responding. In Study 4 ($n = 104$), participants were randomly assigned to prayer versus other conditions in a journal study that spanned 4 weeks. At follow up, those who were randomly assigned to pray every day reported higher gratitude scores than control participants. Together, these studies provide evidence that prayer increases gratitude.

Keywords: gratitude, prayer, intervention, journal study, religiosity

The potential positive effects of gratitude on individuals and society are numerous, and researchers are just beginning to explore them. Gratitude has been shown to predict more prosocial behavior (McCullough, Kilpatrick, Emmons, & Larson, 2001), a greater sense of coherence (i.e., perception of one's life as comprehensible, manageable, and meaningful; Lambert, Graham, & Fincham, 2009), greater perceived communal strengths (Lambert, Clark, Durtschi, Fincham, & Graham, in press), lower materialism (Lambert, Fincham, Stillman, & Dean, 2009), lower depression (Wood, Maltby, Gillett, Linley, & Joseph, 2008), and strengthened social bonds and friendships (Emmons & Shelton, 2002; McCullough et al., 2001; McCullough & Tsang, 2004).

Emmons and McCullough (2003) conducted a 3-week study in which participants who kept gratitude journals reported higher levels of optimism, felt better about their lives as a whole, were more likely to have made progress toward important personal goals, exercised more regularly, and reported fewer negative health symptoms. In another sample, the authors found that participants assigned to a gratitude condition were more likely to report having helped someone with a personal problem or having offered emotional support to someone else relative to control conditions. In a final sample of adults with neuromuscular disease, participants assigned to a gratitude intervention reported greater amounts of high-energy positive moods, more optimistic ratings of one's life, greater sense of feeling connected to others, and better sleep quality and duration relative to a control group (Emmons & McCullough, 2003). Gratitude also seems to have important implications for the workplace, as Andersson, Giacalone, and Jurkiewicz (2007) demonstrated that employee feelings of gratitude were associated with greater feelings of social responsibility toward both employer and societal issues. Thus, fostering gratitude appears to provide a wide range of benefits across multiple domains, in-

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cluding domains of mental health, physical health, and social well-being.

Gratitude is typically described by researchers as the state that follows after a desired benefit is received from another person who is perceived as intentionally giving the benefit (Roberts, 2004). We call this type of interpersonal transfer of a benefit from a beneficiary to a benefactor as being *benefit-triggered gratitude*. Through a series of studies we (Lambert, Graham, & Fincham, in press) found evidence that the layperson conceives of gratitude more broadly than it is traditionally defined by researchers. In addition to this traditional type of benefit-triggered gratitude, we identified a broader type of gratitude that includes being grateful for all sorts of gifts in life, including the presence of cherished others in one's life (rather than for particular benefits conferred by those others). We called this type of gratitude *generalized gratitude* and defined it as an "emotion or state resulting from a having an awareness and appreciation of that which is valuable and meaningful to oneself" (p. 6). For the purpose of the studies reported herein, we conceive of gratitude more broadly to include both the emotion resulting from a specific, conferred benefit (benefit-triggered gratitude), as well as acknowledging the value of another person's (or thing's) general attributes or being (generalized gratitude).

Religiosity and Gratitude

Several studies have found a relationship between religiosity and gratitude (Adler & Fagley, 2005; McCullough, Emmons, & Tsang, 2002; Watkins, Woodward, Stone, & Kolts, 2003). McCullough and colleagues (2002) have proposed three possible reasons why religion/spirituality may be related to gratitude. First, most world religions promote gratitude as a desirable attribute (Carman & Streng, 1989; Emmons & Crumpler, 2000); thus, more religious individuals may actively seek to cultivate gratitude. Second, when individuals experience positive phenomena such as beautiful sunsets, those who endorse more religious/spiritual attitudes may attribute these phenomena to God or higher power, which may serve to foster increased gratitude. Finally, the spiritually inclined tend to attribute positive, but not negative, experiences to God's intervention (Lupfer,

De Paola, Brock, & Clement, 1994; Lupfer, Tolliver, & Jackson, 1996); this pattern of attribution may also foster increases in gratitude. For example, pleasant weather may be attributed to God, whereas a long winter might be chalked up to natural explanations. In addition to these proposed explanations, it is logical to conjecture that the common religious practice of thanking God in prayer is a likely explanation for this relationship.

Prayer and Gratitude

It is worth noting that prayer, the mechanism for increasing gratitude proposed in the current studies, is an immensely practical means of increasing gratitude, especially given that an overwhelming majority of Americans believe in God (92%, U.S. Religious Landscape Survey, 2008) and pray at least occasionally (90%; McCullough & Larson, 1999). Thus, individuals who are comfortable with this form of religious practice may profitably be directed to increase the frequency of prayer and to adjust their prayers to include expressions of thanks as a tool to help increase their sense of gratitude and overall well-being. In a prototype study of prayer (Lambert, Graham, & Fincham, 2009), participants were asked to list the characteristics or attributes that come to mind when they think of prayer. Of 219 attributes "thanking" was the second most frequently mentioned feature, next only to "God." Given that prayer is the conventional method for expressing gratitude to God, it seems probable that praying more would be related to higher levels of gratitude.

Some research has been done on different types of prayer and one that is frequently mentioned in research is a prayer of thanksgiving (e.g., Ladd & Spilka, 2002; Laird, Snyder, Rapoff, & Green, 2004). Although there has been mention of gratitude as being an important aspect of some types of prayer, little research has directly examined the empirical link between them. One cross-sectional study provides preliminary evidence for such a relationship (McCullough et al., 2002). However, even though there are reasons to believe that prayer might facilitate gratitude, there are also several reasons why it might not. For example, many prayer is petitionary in nature, focusing on things the individual is lacking rather than things they have.

To the extent that prayer content makes salient one's relative deprivation, it might be expected to decrease rather than increase gratitude.

Overview of Studies

The objective of Study 1 was to replicate prior cross-sectional research showing a relationship between prayer frequency and trait gratitude. One limitation of this type of design is that the direction of effects is unknown. We addressed this limitation in Studies 2 and 3 by employing a longitudinal design. In Study 2, we hypothesized that Time 1 prayer frequency would predict later gratitude even when controlling for Time 1 gratitude. In addition we sought to rule out religiosity as a third variable explanation for this relationship. Using the same design as Study 2, Study 3 investigated whether socially desirable responding, rather than prayer, was driving these findings. Finally, in Study 4 we attempted to provide evidence for a causal relationship between prayer and gratitude by employing an experimental design. We hypothesized that participants randomly assigned to a daily prayer condition would report higher gratitude scores than would those assigned to a neutral activity condition at the end of a 4-week journal activity. In sum, we utilized cross-sectional, longitudinal, and experimental designs to examine the relationship between prayer and gratitude.

Study 1

The objective of Study 1 was simply to replicate McCullough and colleagues' (2002) study that demonstrated a cross sectional relationship between prayer frequency and gratitude. We hypothesized that higher frequency of prayer would be associated with higher gratitude scores.

Method

Participants

The study included 674 undergraduates (499 female) from a Southeastern public university who received partial course credit for participating in the study. Participants ranged in age from 18 to 54 years, with a median age of 19.

They answered a variety of questions, including those included here.

Measures

Prayer. Prayer was assessed with a 3-item measure (e.g., "I pray daily"; $\alpha = .88$). This measure has shown high reliability and has demonstrated predictive validity in past studies (e.g., it predicts alcohol consumption; Lambert, Fincham, Marks, & Stillman, 2009).

Gratitude. Gratitude as an affective trait was measured with the 6-item Gratitude Questionnaire (GQ-6; McCullough et al., 2002; e.g., "I have so much in life to be thankful for"; $\alpha = .88$). This measure clearly demonstrates convergent validity by showing strong, but not overly strong correlation with similar measures. For example, it correlates moderately (.53) with satisfaction with life, vitality (.46), and optimism (.51) (McCullough et al., 2002).

Results and Discussion

We examined the relationship between prayer and gratitude using linear regression. Consistent with our hypothesis, higher frequency of prayer predicted higher levels of gratitude, $\beta = .19, p < .01, sr = .19$. We tested for age, gender, and race in this and subsequent studies, and they did not have any significant effect on the relationship between prayer and gratitude and were therefore not included in the analysis.

One limitation of a cross-sectional study is that the direction of effects is unknown. For example, could it be that grateful individuals pray more to express their gratitude, or might praying lead to more gratitude? Greater insight into the direction of the relationship between these variables can be provided through use of a longitudinal design. Thus, in Studies 2 and 3, we examined this same association using longitudinal designs.

Study 2

Method

Participants and Procedure

At Time 1, 832 undergraduates (681 female) from a Southeastern public university were re-

cruited for the study by offering partial course credit; however, 52 of these dropped out of the study by Time 2. Thus, subsequent analysis included the 780 undergraduates (643 female) who remained in the study and completed all relevant measures at both time points. Participants ranged in age from 17 to 40 years, with a median age of 19. Participants completed a large battery of measures, including all measures relevant to the current study, at the beginning of the academic semester and then again 6 weeks later.

Measures

Prayer. Prayer was assessed with the same 3-item measure from study 1 ($\alpha = .86$).

Gratitude. Gratitude was again assessed with the GQ-6 (McCullough et al., 2002; T1 $\alpha = .84$, T2 $\alpha = .84$).

Religious participation. A common measure of religiosity in the literature is attendance of religious services (Lambert & Dollahite, 2008). *Religious participation* was measured with a single item, “How often do you attend religious services?”

Results and Discussion

Cross-Lagged Stability Model

Significant cross-lagged effects reflect the presence of a relationship beyond that which can be accounted for by the stability of the constructs and the magnitude of their associa-

tion at Time 1. AMOS was used to obtain parameter estimates in the cross-lagged stability model shown in Figure 1. Because this is a fully saturated model without any degrees of freedom, estimates of model fit do not provide meaningful information.

The measure of religious participation at Time 1 was also included in the model (see Figure 1). Structural equation modeling based on maximum likelihood estimation was again used to obtain parameter estimates. As hypothesized, the cross-lagged relation from Time 1 prayer frequency to Time 2 gratitude yielded a significant parameter estimate ($\beta = .09$, $p < .05$, $sr = .06$) even when controlling for religious participation. The path from gratitude to prayer frequency was not significant ($\beta = .01$, ns), and the path from religious participation to gratitude was also not significant ($\beta = .03$, ns), indicating that religious participation was not a viable alternative explanation for the relationship between prayer and gratitude.

The above results are consistent with the view that praying influences gratitude. However, this relationship could be a function of response bias. Perhaps people who pray more feel more pressure to portray themselves as “saint-like” by also reporting higher gratitude scores. Thus, in Study 3 we thought it would be important to control for socially desirable responding to ensure that any association between prayer and gratitude was not attributable to such a tendency. In addition, we used a different measure of religiosity to further test whether

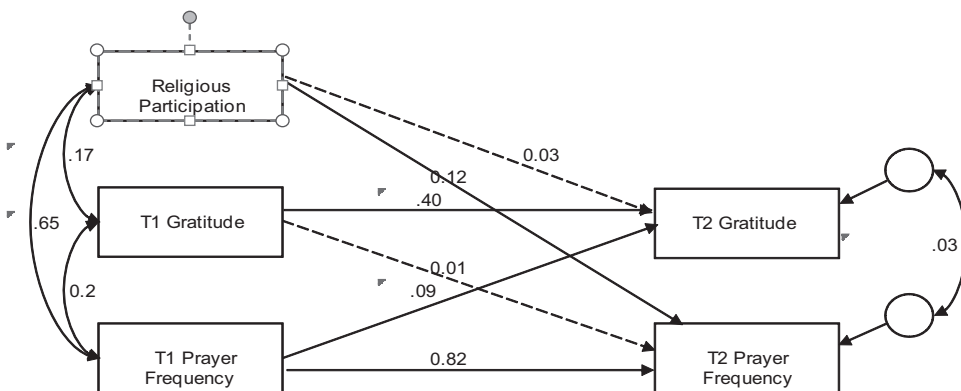


Figure 1. Study 2 cross lagged stability model of gratitude and prayer frequency controlling for religious participation. - - indicates path was not significant.

prayer frequency predicts gratitude above and beyond religiosity. Thus, in Study 3, we sought to replicate the observed longitudinal association between prayer and gratitude and to test whether the longitudinal relationship would remain even when controlling for religiosity and social desirability.

Study 3

Method

Participants and Procedure

In total, 890 undergraduate students (720 female) from a Southeastern public university were recruited for the study by offering partial course credit; however, 58 of these participants did not complete all measures at Time 2. Thus, the final sample comprised 832 undergraduates (674 female) ranging in age from 17 to 55 years, with a median age of 19. Participants completed a large battery of measures, including all measures relevant to the current study, at the beginning of the academic semester and then again 6 weeks later.

Measures

Prayer. Prayer was assessed with two of the original three items from previous studies (e.g., “I pray before I go to sleep”). The items

correlated with each other at $r(830) = .84$ for Time 1.

Gratitude. Gratitude was again assessed with the 6-item GQ-6 (McCullough et al., 2002; T1 $\alpha = .76$, T2 $\alpha = .79$).

Religiosity. In the current study, religiosity was assessed with a single item “All things considered, how religious would you say that you are?”

Social desirability. A 10-item version of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) was used to assess the tendency to present oneself in a socially desirable manner. Responses were coded so that higher scores reflected a greater tendency toward socially desirable responding. Reliability was not computed because this measure more closely resembles an index than a scale.

Results and Discussion

Cross-Lagged Stability Model

In the present study a measure of social desirability and religiosity at Time 1 were also included in the model (see Figure 2). As hypothesized, the cross-lagged relation from Time 1 prayer frequency to Time 2 gratitude yielded a significant parameter estimate ($\beta = .11, p < .05, sr = .07$), even when controlling for these competing variables. The path from religiosity to gratitude was not significant ($\beta =$

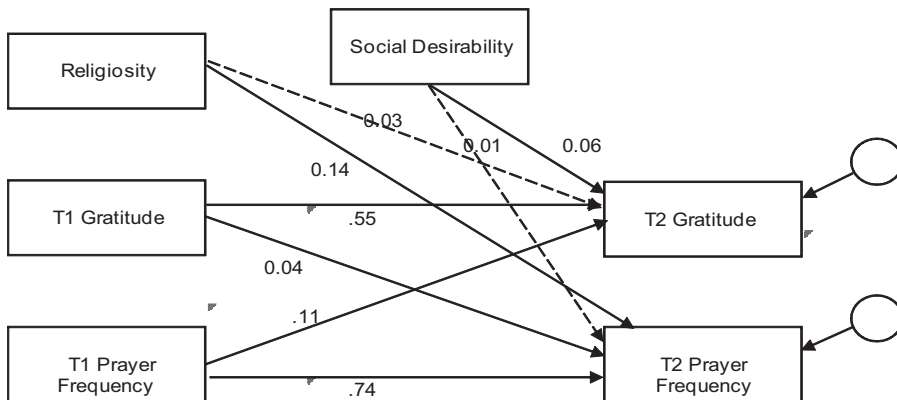


Figure 2. Study 3 cross lagged stability model of prayer frequency and gratitude controlling for religiosity and social desirability. - - - indicates path was not significant. Note: Correlations between independent variables were left off for simplicity of presentation. For this information, please contact the first author.

.03, *ns*), but the path from social desirability to gratitude was significant ($\beta = .06, p < .05, sr = .07$) suggesting the importance of controlling for response bias in such analyses. Also, contrary to the results of Study 2, the path from baseline gratitude did significantly predict prayer frequency at follow-up ($\beta = .04, p < .05, sr = .04$).

The results of this study indicate that the association between prayer frequency and gratitude is not attributable to socially desirable responding or religiosity. These results replicated the past studies and provide further evidence for a relationship between the two variables. In Study 2 prayer frequency predicted later gratitude, but not vice versa. Yet, in the current study there was a significant relationship between earlier prayer and later gratitude (albeit much smaller in magnitude than the effect of prayer on gratitude). However, these data are correlational in nature and experimental data are required to more fully examine the direction of this relationship. In essence, a causal relation between prayer and gratitude cannot be confidently inferred in the absence of experimental data. Therefore the primary objective of Study 4 was to test for causation using an experimental design.

Study 4

Method

Participants

The study initially included 112 (98 female) undergraduate students from a Southeastern public university that recruited for the study by offering extra credit and eight were lost to attrition. Thus, 104 undergraduates (90 female) were included in subsequent analyses. Participants ranged in age from 18 to 34 years, with a median age of 19. Participants were invited to participate if they (1) were currently involved in a romantic relationship, (2) reported at least a minimal level of previous prayer (i.e., everyone that did not respond “strongly disagree” to the questions “I pray daily” and “I pray before I go to sleep”) to filter out those who may have been uncomfortable with praying daily, which excluded about 25% of potential participants.

This study was conducted as part of a broader study that involved only participants in romantic relationships. However, for the purposes of

the current study there was no particular reason for excluding those who were not currently involved in a romantic relationship, and we do not suspect that relationship status would have any specific influence on the relationship between prayer and gratitude. To be certain, we checked the data from Study 2 to see whether there were any differences in Time 2 gratitude based on relationship status, and the mean gratitude scores of those who were in a relationship ($M = 37.68, SD = 4.96$) did not differ from those who were not in a relationship ($M = 37.60, SD = 4.77$), $F(1, 800) = .05, p = .83, \eta_p^2 = .00$. Participants completed a large battery of measures, including the ones relevant to the current study, at Time 1 and then again 4 weeks later at Time 2.

Measures

Gratitude. Gratitude was again assessed with the GQ-6 (McCullough et al., 2002; T1 $\alpha = .90, T2 \alpha = .78$).

Religiosity. Religiosity was assessed summing two questions, “All things considered, how religious would you say that you are?” and “How often do you attend religious services?” These items correlated with each other at $r(110) = .69$.

Social desirability. We again used the 10-item version of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). Reliability was not computed because this measure more closely resembles an index than a scale.

Prayer. Prayer was again assessed with a 3-item measure that included the following items: “I pray daily,” “I pray before I go to sleep,” “I usually say a prayer before each meal” ($\alpha = .85$).

Level of engagement in activity. As part of the study, participants were asked to engage in an activity over a four week period. Two questions assessed participants’ level of engagement in their assigned activity: “How often did you engage in your assigned daily activity?” and “How often did you not take the study very seriously?” (Reverse scored). These two items were summed and coded so that higher scores reflected higher engagement.

Procedure

All participants completed a battery of measures that included those relevant to the current

study. Then, participants were randomly assigned to one of four conditions and were instructed that they would need to complete their assigned activity every day and keep a log of how many minutes they engaged in their activity each day. Participants were also required to log on to an online journal twice a week to report their log and provide written descriptions about their assigned activity.

Prayer for partner condition. This was the experimental condition and those assigned to the prayer for partner condition were given the following instructions: “Over the next four weeks we would like you to set aside at least one time each day to pray for the well-being of your partner. Keep track of how much time you spend doing this as we will ask you to report for each day.” During each online session we asked them to “Please generate a prayer for the well-being of your romantic partner,” and then “In a paragraph below, please describe your prayer.”

Prayer in general condition. Those assigned to this condition were given the following instructions: “Over the next four weeks please set aside at least one time each day to pray. Keep track of how much time you spend doing this as we will ask you to report for each day.” During each online session we asked them to “Please generate your own prayer in your own words anything you’d like to pray about,” and then “In a paragraph below, please describe your prayer.”

Daily activities condition. Participants assigned to this condition were instructed: “Over the next four weeks we would like you to please set aside at least one time each day to think about what you have done that day. Keep track of how much time you spend doing this as we will ask you to report for each day.” During each online session participants in this condition were asked to “Please write a summary of your activities over the past three days.”

Partner positive condition. Participants in this condition were given the following instructions: “Over the next four weeks, please set aside at least one time each day to think positive thoughts about your partner. Keep track of how much time you spend doing this as we will ask you to report for each day.” During each online session participants were asked to write about some of the positive qualities they had identified about their partner.

Results and Discussion

Attrition and Engagement

Given that exactly two participants dropped out of each of the four conditions, we did not anticipate any meaningful differential effect due to attrition. However, to be sure we compared Time 1 gratitude scores of those that dropped out with those who remained in the study and found no differences between the groups $t(110) = .93, p > .05$. Also, to rule out the possibility that participants in the prayer conditions may have taken their assigned activity more seriously than those in the other conditions, we compared across conditions and found no significant differences between groups in level of engagement $F(3, 84) = 1.36, p > .05$.

Formation of Relevant Conditions

The current study was part of a broader study that assessed the unique effects of praying for one’s partner on certain relationship variables. However, for the purposes of the current study, we did not expect any differences in gratitude based on prayer type (prayer for partner vs. prayer in general). Indeed, the results of an independent t test reveal no Time 1 differences in gratitude based on type of prayer condition, $t(57) = .47, p = .64$, nor were there Time 2 differences, $t(52) = .44, p = .57$. Thus, these two conditions were combined to form one prayer condition. Similarly, there were no differences in gratitude based on whether participants wrote about their daily activities or thought about positive aspects of their romantic partners at Time 1, $t(51) = .60, p = .55$, or at Time 2, $t(45) = .14, p = .65$. Thus, these two conditions were combined to form one comparison or control condition. Two conditions were investigated—a prayer condition that included those who prayed daily and a control condition that included participants who engaged in daily activities other than prayer.

Effects of Prayer on Gratitude

We suspected that individual reaction to the experimental condition may vary based on prior level of prayer frequency, thus we added it as a covariate in addition to baseline levels of gratitude and the prior covariates social desirability,

and religiosity. An analysis of covariance (ANCOVA) was conducted and revealed that participants in the prayer condition reported higher gratitude scores ($M = 37.56$, $SD = 4.19$) than those in the control condition ($M = 35.90$, $SD = 5.22$), $F(1, 98) = 4.10$, $p < .05$, $\eta_p^2 = .04$.

These findings served to support our hypothesis in that the frequency with which one engages in prayer increases one's gratitude. Neither socially desirable responding nor religious inclination provided an alternative explanation for this relationship. This complements the results of the previous three studies and provides strong support for inferring that prayer causes increased gratitude. The result in the current experimental study was particularly notable given that participants assigned to the control condition also reported some level of praying behavior at pretest, which should have made it more difficult to detect any differences between groups and which is the likely reason for a small effect size.

General Discussion

In a series of studies, we sought to test the hypothesis that praying predicts increases in gratitude. We found evidence for a cross-sectional and longitudinal relationship between prayer and gratitude such that praying predicted modest increases in gratitude. This relationship held true even when controlling for baseline levels of gratitude and general levels of religiosity and social desirability. In a final journal study that employed an experimental design, we found that participants who were randomly assigned to pray evidenced greater gratitude than those who were randomly assigned to a control condition. Together, these data provide evidence for the hypothesis that prayer plays a causal role in promoting gratitude.

Self-perception theory provides a potential explanation for our study findings. Initially developed as an alternate explanation for dissonance theory (Festinger, 1957), self-perception theory can be considered a special case of attribution theory wherein an individual "observes" his or her own behavior and makes attributions about the motivations behind the behavior after the fact. These attributions become the attitudes that the individual then endorses (Bem, 1967). So, for example, individuals in the study may have expressed gratitude as part of a daily

prayer and consequently determined that they felt grateful because they observe their own repeated expressions of gratitude.

In addition, we suspect that as participants made prayer a daily ritual, they also took the opportunity to reflect more frequently about what they are grateful for. Adler and Fagley (2005) found evidence that many people have rituals to remind themselves to be thankful. Prayer was an important aspect of this type of ritual for many people. Indeed, the ritualistic, repetitive nature of prayer could likely serve as a frequent reminder to express gratitude or to recall the things one feels grateful for. Another potential reason for why praying increases gratitude is that praying may shift one's perspective of previously unnoticed, every day surroundings (e.g., nature, oxygen to breathe, life in general) to being viewed as gifts from a supreme creator. Future research should further explore these possibilities.

A potentially important conclusion from the current series of studies is that "frequency of prayer" is not merely a proxy for overall religious involvement. Although prayer and religious involvement are positively correlated, they appear to represent distinct constructs with different patterns of correlations to outcomes of interest. In the current series, controlling for religiosity did not render nonsignificant the effect of prayer, nor did religiosity have as great an effect on gratitude as did prayer, though controlling for this variable likely reduced the effect size of prayer on gratitude. Given the strong social context implied by high levels of religiosity, it is striking that this variable was not more highly related to gratitude.

Limitations and Future Directions

Notwithstanding its intriguing theoretical and practical implications, this set of research findings is limited by the use of student samples. It cannot be assumed that the findings will generalize to different age groups or to people from diverse backgrounds. However, we suspect that there could be even a stronger relationship between prayer and gratitude with age. Also the practical implications of the findings are necessarily limited to persons who already believe in a supreme being and engage in prayer. Future research should test whether these findings

would replicate with other measures of gratitude to determine the robustness of their effects.

Some research has been done on different types of prayer, some of which include adoration, confession, thanksgiving, and supplication (ACTS; e.g., Ladd & Spilka, 2002; Laird et al., 2004). Future research should examine different types of prayer and how each might affect gratitude. We suspect that in addition to prayers of thanksgiving, prayers of adoration (which focus on the worship and praise of God) would likely trigger a heightened awareness of that which is valuable and meaningful to the self, which would enhance generalized gratitude.

We suggest that prayer is a formalized way to detach the self from usual stream of consciousness and to make the self aware (through expressing thanks to God or adoration) of certain blessings that are valuable and meaningful to the self. Arguably, this same process could occur without prayer (e.g., such as through meditation) and this could be tested empirically. However, given that prayer is promoted by most faith communities and (for many) is already part of a daily routine, prayer may be an ideal avenue for increasing gratitude in applied settings.

Strengths and Weaknesses of Prayer for Increasing Gratitude

Strengths. Prayer has remarkable potential to be incorporated into broader programs of mental and physical health promotion because of its flexibility. There are many types of prayer and many ways of encouraging prayer. It is an activity that many people find intrinsically rewarding, and so it also has the potential to be self-maintaining. Likewise, prayers can be offered in print format or online and can also be provided in outline form to encourage greater participant involvement and ownership of the resulting product. The potential cost effectiveness of prayer based interventions is also quite unique. Because of its similarity to ongoing, widely available activities already promoted by many religious organizations, the adaptation of prayer to enhance gratitude and its delivery through community organizations should be extremely cost-effective. At a minimum, the potential for professional-community group partnerships seems quite striking.

Weaknesses. Prayer also has several notable weaknesses as a means of promoting grati-

tude and these should also be noted. The most obvious weakness of prayer as a delivery system for gratitude enhancing interventions is that prayer will not be equally engaging for all those who might benefit from gratitude enhancement. In particular, a significant proportion of the general population does not pray regularly and would not find prayer a convincing approach. It is essential that prayer be utilized only with those for whom it is already culturally compatible, and not otherwise. In addition, prayers that increase felt gratitude might be the first to diminish in the context of difficulties. If so, prayer may have diminished impact at the very time it would be most helpful. Similarly, because prayer is typically embedded in a complex set of beliefs, it may be that increasing prayer to enhance gratitude will also increase other aspects of the broader belief system with unknown positive or negative consequences. Accordingly, the potential for "side effects" cannot be ruled out. Of particular interest is the possibility of effects on self-view. Since prayers focused on gratitude require acknowledgment of external sources for one's positive outcomes, they may decrease internal attributions for good events and so have potential implications for long-term resilience and internal locus of control. Likewise, prayers focused on gratitude may lead individuals to emphasize the positive at the expense of sensitivity to real environmental contingencies, rendering them less effective in coping with difficult circumstances.

Among American marital and family therapists surveyed, 72% believed that spirituality is relevant to clinical practice and 54% indicated an interest in learning about ways to integrate spirituality with assessment and intervention (Carlson, Kirkpatrick, Hecker, & Killmer, 2002), thus demonstrating that there is some demand for utilizing spiritual practices such as prayer in therapy. Beach, Fincham, Hurt, McNair, and Stanley (2008) have provided a framework for allowing the integration of prayer into marital interventions (educational or therapeutic) and suggested specific ways in which prayer, when it is culturally appropriate, can be either an alternative or an addition to existing intervention strategies. Thus, as prayer becomes more widely utilized in clinical settings, it could also be used as a tool for increasing gratitude for therapy patients or intervention participants.

Conclusion

Gratitude is a burgeoning topic of research and shows promise as a mechanism for enhancing physical and mental health. Prayer is a widespread religious practice that is gaining momentum as a potential tool for clinicians—where culturally appropriate. The present studies provide cross-sectional, longitudinal, and experimental evidence for a relationship between prayer and gratitude. This represents the first empirical examination of whether levels of gratitude can be modified and the mechanism by which this can be accomplished. In doing so, it provides a strong start in understanding the important construct of gratitude. At the same time, it serves to remind us that a complete understanding of human behavior requires systematic investigation of spiritual activities such as prayer.

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