The Impact of Prayer Direction on Emotional and Cognitive Responses to Personal Problems

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**Abstract**

Past research has demonstrated the self-regulatory function of prayer in response to personal problems. In the present research, we examined whether the direction of prayer (inward, outward, or upward) impacts the effect of prayer on emotional acceptance and cognitive understanding of a personal problem when compared with an equivalent time of thought. Graduate students at a nondenominational Christian university were recruited to participate in an online study about dealing with personal problems. Participants were randomly assigned 1 of 4 conditions: thought, inward prayer, outward prayer, or upward prayer. We found that whereas participants who directed their prayers inward and outward felt more resolved, at peace, and content than those in the thought condition, participants' emotional acceptance did not differ between the upward prayer and thought conditions. Cognitive understanding of the problem was significantly greater for those in the inward and outward prayer conditions. The importance of experienced social interaction for emotionally and cognitively processing negative personal experiences is discussed.

**The Impact of Prayer Direction on Emotional and Cognitive Responses to Personal Problems**

Past research has shown that prayer is an effective strategy for coping with personal problems. Prayer buffers individuals from negative stressors and facilitates emotional adjustment (Bacchus & Holley, 2005; Copeland-Linder, 2006; Pargament et al., 1990; Pargament, Smith, Koenig, & Perez, 1998). Krause (2009) suggests prayer may help people cope more effectively with trauma by fostering “peaceful acceptance” (Gottlieb, 1997, p. 28). This emotional acceptance of negative personal experiences is the focus of the present experimental study.

Recent experimental research has demonstrated that there is a causal relationship between prayer and emotional acceptance. Participants randomly assigned to pray about a personal problem reported significantly more emotional acceptance of their problem (in terms of feeling resolved, at peace, and content) than participants randomly assigned to think about it for the same amount of time (McCulloch & Parks-Stamm, 2018). In contrast, participants assigned to think about the problem reported a better cognitive understanding of the problem (i.e., how clear, coherent, and understood it was after the time of thought or prayer; Study 2). The content and direction of these prayers was not examined.

Prayer has been categorized by whether one focuses on the self (inward prayer), others (outward prayer), or the divine (upward prayer; Ladd & Spilka, 2002, 2006). Inward prayer focuses on the self and self-examination, outward prayer is focused on the needs of others in the world, and upward prayer is focused on a higher power, frequently expressed by engaging in rituals and traditions. These three directions of prayer differ in the extent to which they are problem-focused. Whereas both inward and outward prayers can be used to address a specific problem (e.g., “Examples of inward prayers are prayers of examen, discussing personal experiences and feelings with God, and requests for personal growth and formation… outward prayer includes activities such as petitionary and intercessory prayer”; McMinn et al., 2008, p. 103), upward prayers do not (“Examples of upward prayer are prayers of adoration, meditating on God’s qualities, contemplative prayer, and sacramental prayers”; McMinn et al., 2008, p. 103). By focusing on the divine rather than the problem, upward prayer may distract individuals from their current concern. Distraction has been proposed as a mechanism by which prayer aids emotional coping (Sharp, 2010).

The supportive social interaction found in prayer has also been proposed as a mechanism by which prayer helps individuals manage emotions, and this also appears to differ between the types of prayers. Compared with personal improvised prayers, reciting the Lord’s Prayer led to less activation of social areas of the brain associated with theory of mind (Schjoedt, Stødkilde-Jørgensen, Geertz, & Roepstorff, 2009). Correlational studies suggest that this less social ritual prayer is associated with negative affect, whereas other forms of prayer are associated with positive well-being (Poloma & Pendleton, 1991). This is consistent with empirical research showing the beneficial effect of social support on coping in various life domains (Cohen & Wills, 1985; Martin & Brantley, 2004). However, other correlational research has suggested that focusing one’s prayer on God (rather than the self) is associated with increased well-being (Whittington & Scher, 2010). Thus, the direction of prayer most beneficial for emotional acceptance of personal problems is unknown.

The present study therefore investigated whether the different directions of prayer focus (inward, outward, upward) have different consequences for the emotional acceptance gained from prayer. We also examined whether the differences between prayer and thought for participants’ cognitive understanding of their problem would depend on the direction of prayer.

**Participants and Method**

**Participants.** Two hundred and fifty-four participants completed an online study about dealing with personal problems; three students were excluded from the analyses for answering below the midpoint in how seriously they took the study (final *N* = 253; 211 female, 40 male, 2 no response). The study was approved by the Institutional Review Board of Grand Canyon University before recruitment began. Participants were recruited by email announcement from a master’s program at a non-denominational Christian university in the southwestern United States. The mean age of participants was 36.24 years old (*SD* = 10.09). The sample was 56.1% white, 19.4% African American, 13.0% Hispanic/Latino, 2.4% Asian or Pacific Islander, .4% Native American, and 8.7% chose not to answer.

Participant religiosity was measured through Friese and Wänke’s (2014) 3-item religiosity scale in the demographic survey at the end of the study. These items included: How strongly do you believe in God (Allah, Jahwe…)? How religious are you? How often do you pray? (from 1 to 5; α = .87). Mean responses on the religiosity scale fell above the midpoint of 3 (*M* = 3.81, *SD* = 1.11), and there were no differences between the four different conditions, *F*(3, 249) = .40, *p* = .752. 80% of participants identified as Christian, 12% Other, 5% Agnostic, 0.8% Muslim, 0.4% Buddhist, and 4% chose not to answer.

**Method.** After providing consent online, participants were asked to identify a personal problem (i.e., “something that is negative, troubling, or difficult personally for you right now”). The next page randomly assigned participants to either think (*n* = 53) or pray about the personal problem for two minutes. Three prayer conditions were created. Those in the inward prayer condition (*n* = 62) read “Please focus your prayer *inward*, focusing on yourself and self-examination.” Those in the outward condition (*n* = 68) read “Please focus your prayer *outward,* focusing on others in the world and their needs.” Those in the upward condition (*n* = 70) read “Please focus your prayer *upward*, focusing on connecting with the Divine.” A timer appeared at the bottom of the screen; they were not able to proceed to the following screen until two minutes had passed.

Next, all participants completed a series of questionnaires presented on the computer screen, and items on each questionnaire were randomized for each participant. Lastly, participants completed demographic items, were debriefed, and thanked for their participation.

**Manipulation Check*.*** Friese and Wänke’s (2014) *engagement in social interaction* scale was included as a manipulation check, including: “To what extent did you try to get in touch with a higher power during this time?” and “To what extent did you feel you were speaking to someone else (either aloud or silently)?” These were significantly correlated with each other and therefore combined (*r* = .66, *p* < .001).

**Dependent Variables*.*** Participants were asked to complete two scales from McCulloch and Parks-Stamm (2018) regarding their emotional acceptance following the intervention (to what extent they felt resolved, at peace, and content; α = .88), and cognitive understanding (to what extent the problem seems clear, coherent, and understood; α = .76). The items from these two scales were combined and randomly presented.

**Results**

**Manipulation Check.** The extent to which participants experienced a social interaction was greater among those in the prayer conditions (*M* = 5.24, *SD* = 1.72) than the thought condition (*M* = 4.29, *SD* = 1.98), *t*(250) = 3.44, *p* = .001. A planned contrast between the prayer conditions supported our assumption that participants’ engagement in social interaction was lower for the upward condition (*M =* 4.98, *SD* = 1.65) than the other two prayer conditions (inward: *M =* 5.49, *SD* = 1.68; outward: *M =* 5.28, *SD* = 1.82), *t*(248) = 15.31, *p* < .0005.

**Emotional Acceptance and Cognitive Understanding.** We first tested whether the results from McCulloch and Parks-Stamm (2018) would be replicated, showing that prayer was associated with greater emotional acceptance, but not cognitive understanding, of the personal problem. Comparing all prayer conditions to the thought condition, we found a significant effect of prayer on the emotional acceptance scale, *t*(250) = 2.50, *p* = .013, but not the cognitive understanding scale, *t*(250) = 1.27, *p* = .205, replicating past findings. Whereas emotional acceptance was higher in the prayer conditions than the thought condition (prayer: *M* = 4.12, *SD* = 1.54; thought: *M* = 3.50, *SD* = 1.90), the non-significant trend was in the opposite direction for the cognitive understanding of the problem (prayer: *M* = 4.98, *SD* = 1.25; thought: *M* = 5.23, *SD* = 1.25). Controlling for religiosity did not change the results for the emotional acceptance scale, *F*(1, 249) = 6.58, *p* = .011 or the cognitive understanding scale, *F*(1, 249) = 1.74, *p* = .188.

Further analyses were conducted on the effect of each of the prayer types (inward, outward, upward) on emotional acceptance. A significant difference in emotional acceptance was found between thought (*M* = 3.47, *SD* = 1.90) and inward prayer (*M* = 4.34, *SD* = 1.68), *t*(113) = 2.52, *p* = .013, and between thought and outward prayer (*M* = 4.29, *SD* = 1.41), *t*(118) = 2.62, *p* = .010. No differences in emotional acceptance were found between the thought condition and the upward prayer condition (*M* = 3.77, *SD* = 1.49), *t*(121) = .90, *p* = .371. Inward and outward prayer significantly increased emotional acceptance above the thought baseline condition, but the upward prayer condition did not differ significantly from the thought condition.

Participants’ cognitive understanding of the problem was then analyzed for each prayer type (inward, outward, and upward) compared with the thought baseline condition. No significant differences were found between thought (*M* = 5.23, *SD* = 1.20) and inward prayer (*M* = 5.49, *SD* = 1.11), *t*(113) = 1.25, *p* = .215, or between thought and outward prayer (*M* = 4.84, *SD* = 1.29), *t*(118) = 1.70, *p* = .092. However, a significantly lower rating of cognitive understanding was found in the upward prayer condition (*M* = 4.67, *SD* = 1.21) as compared with the thought condition, *t*(121) = 2.54, *p* = .012, showing that these participants found their problem to be significantly less clear, coherent, and understood than those in the thought condition.

Further analyses were then conducted to examine the relationship between the experience of social interaction and emotional and cognitive acceptance. Within all three prayer conditions, the extent to which participants reported experiencing social interaction during their prayer was significantly correlated with their emotional acceptance (inward: *r* = .34, *p* = .008; outward: *r* = .47, *p* < .001; upward: *r* = .43, *p* < .001) and with their cognitive understanding (inward: *r* = .48, *p* < .001; outward: *r* = .45, *p* < .001; upward: *r* = .50, *p* < .001).

**Discussion**

The present study suggests that the direction of prayer has a significant and meaningful effect on the benefits of prayer in dealing with personal problems. The present study replicated findings from past research on the effect of prayer on both the emotional and cognitive measures. McCulloch and Parks-Stamm (2018) found a significant positive effect of prayer versus thought on emotional acceptance, which was replicated here when all prayer conditions were combined. However, further analyses showed that only prayers directed inward and outward (not upward) had this positive effect on participants’ feelings of being resolved, at peace, and content. McCulloch and Parks-Stamm (2018; Study 2) found a negative effect of prayer (versus thought) on participants’ cognitive understanding of their problem. In the present study, we found that thought resulted in a greater perceived cognitive understanding of participants’ identified personal problems only when compared to upward prayer. The inward and outward prayer conditions did not result in inferior perceived understanding.

Taken together, these findings suggest that the upward direction of prayer, focused on adoration and contemplation of the divine, is a less productive approach to regulating one’s emotional and cognitive responses to personal problems than focusing one’s prayer inward or outward. The supportive social interaction that is experienced in prayer helps individuals manage negative emotions (Sharp, 2010), and past research has shown that formal prayers are experienced as less of a social interaction than improvised prayers (Schjoedt et al., 2009). In our own data, participants in the upward prayer condition reported significantly less social interaction in their prayer than the other prayer conditions. Overall, greater experience of social interaction during prayer was associated with greater emotional acceptance and cognitive understanding. Thus, the present study highlights the importance of experienced social support in explaining how prayer leads to greater emotional acceptance and understanding of negative personal experiences.

Upward prayer also differs from inward and outward prayer by how problem-focused it is. By focusing on the divine rather than oneself or others in the world, the content of participants’ prayers in the upward condition likely shifted away from the personal problem they identified. Those who focused upward found their problem less clear and understood than those in the thought condition, and also showed significantly lower emotional acceptance. Since upward prayer is the least problem-focused of the three types of prayer, these findings suggest distraction is not the mechanism by which prayer elicits emotional acceptance or cognitive understanding. Future research could record verbal prayers to examine whether the time focused on one’s specific problem mediates the relationship between prayer and beneficial outcomes. A further direction for future research is to examine how these findings may differ by religion and other relevant demographics. Our sample was predominantly Christian (80%), female (83%), and white (56%). Replicating these findings with other groups would be an important next step.

The present experimental study provides support for a causal relationship between inward and outward prayer and emotional acceptance of personal problems. It also suggests the social interaction experienced in prayer, rather than distraction, is an essential precursor of the “peaceful acceptance” experienced by those who pray.

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