Petitionary personal prayer as a coping strategy in irritable bowel syndrome – a correlational questionnaire study

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Abstract

**Background:** Irritable Bowel Syndrome (IBS) is a common disorder in which the main symptoms are abdominal pain or discomfort combined with diarrhoea and/or constipation. Personal petitionary prayer – asking God for help and support when facing problems in life – is among the most common forms of prayer and can be viewed as a coping strategy when managing health problems. Previous research on the effects of personal petitionary prayer has showed conflicting findings and there are indications that prayer can be associated with more problems when facing stressful somatic problems such as chronic pain in Swedish settings rather than the opposite and expected benefits from praying. The present master-thesis was informed by the coping theory by Lazarus and Folkman (1984) and a theoretical perspective of prayer as a religious coping strategy.

**Aims:** The aim was to investigate associations between personal petitionary prayer as a coping strategy and IBS symptoms, quality of life and anxiety. A second aim was to investigate if use of prayer would change 10 weeks later and if IBS symptoms at baseline could predict prayer assessed 10 weeks later.

**Methods:** The data in this master-thesis were collected in association with a treatment trial on internet-delivered cognitive behaviour therapy for IBS (Ljótsson et al., 2010). Data were derived from all 85 self-selected participants who had been included in the treatment trial. The three-item self-report measure of prayer which is part of the Coping Strategies Questionnaire for pain was used. I also included data on self-report measures of IBS symptoms and IBS-related quality of life and anxiety, and finally a measure of symptoms of depression. The sample included were mainly women (85%), with some form of higher education (64%) and finally fairly young (Mean age 34.6 years). Data on prayer have not been published before. 10 week follow-up data were available for 37 participants.
**Results:** Statistically significant cross-sectional correlations were found between the prayer scale score and IBS-related quality of life ($r = -.44, p < .01$) and with gastrointestinal symptom-specific anxiety ($r = .42, p < .01$), which indicates that more use of prayer is associated with lower quality of life and more anxiety symptoms. Regression analyses entering prayer in competition with the other variables as predictors showed that prayer was more consistently associated with IBS-related quality of life which also predicted prayer. Use of prayer did not change over the 10-week period and prayer at 10 weeks could not be predicted.

**Interpretation:** In line with some previous research personal petitionary prayer can be associated with more rather than less problems with health. It is important to note that personal prayer is one form of prayer and that long term effects may show different results. Finally, the role of religious affiliation and cultural aspects need to be considered in future research.

Key words: Irritable Bowel Syndrome, petitionary prayer, coping strategies
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Chapter 1. Introduction

1.1 Introducing the topic

In times of trouble we humans are likely to turn to religion and poor health is one common reason for this, as we all face health problems in our lives. One common religious activity is to engage in prayer. Even in secular parts of the world (like Sweden), prayer is often used when confronting health problems (Pargament, 1997). Indeed, for a Swedish population it has been estimated that almost twice as many people pray regularly as compared to the ones who attend religious services (Gustafsson, 1997). Viewed from a health psychology perspective praying has been described as a coping strategy, in other words a behavioural and cognitive tactic used to manage crises, conditions, and demands that are seen as taxing/stressful (Lazarus & Folkman, 1984). There are different forms of prayer I will describe later in the text but here it should be stated the master-thesis will focus on personal petitionary prayer when a person asks for something personal by praying to God or a higher power. Associations between religious activity and health have been the focus of much research, including the effects of prayer, but there are health problems for which there is no or very limited research when it comes to the link between religion and health. One example is Irritable Bowel Syndrome (IBS), in which the main symptoms are abdominal pain or discomfort combined with diarrhoea and/or constipation. IBS is a common functional gastrointestinal disorder, which affects 5-11% of the adult population in most countries (Blanchard, 2001). IBS symptoms include abdominal pain or discomfort combined with diarrhoea and/or constipation (Spiller et al., 2007). Compared to normal controls IBS-patients have impaired quality of life, are more likely to be absent from work, and utilize health care resources to a greater extent. Since the experience of IBS has similarities with pain (and indeed abdominal pain is a symptom in IBS), and that IBS can have an episodic nature, it interesting to study if persons with IBS use prayer as a coping strategy for their IBS. Given that it is common and often described as a functional gastrointestinal disorder it is not unlikely that religion might play a role when coping with IBS, which often is a longstanding if not even a chronic condition (Blanchard, 2001).
1.1 Aims of the master-thesis

The aim of this master-thesis will be to investigate associations between personal petitionary prayer as a coping strategy and IBS symptoms, quality of life and anxiety. The goal is to add knowledge regarding personal petitionary prayer when dealing with health problems in a Swedish setting given that prayer is a common coping strategy globally and that the role of prayer when dealing with IBS has been largely unexplored. The master-thesis will be based on coping theory and the view that personal petitionary prayer can be viewed as a coping strategy.

1.2 Research questions

The research question tested is if there is a statistically significant negative association between prayer as measured with a self-report scale – the Coping Strategies Questionnaire prayer subscale – and self-report measures of IBS symptoms and anxiety, which would indicate that prayer is used when symptoms are worse. I will also test if there is a negative association between the prayer scale and a measure of IBS-related quality of life, again in the direction of prayer being associated with lower quality of life rather than being a positive strategy to handle IBS-related concerns. The second aim and research question will test if use of prayer as a coping strategy changes over time with the prediction that prayer will decrease. Finally, the possibility that prayer at 10-week follow-up can be predicted from baseline IBS measures will be tested.

1.3 Delimitations

The data used in this study were collected in a setting in which persons with IBS sought psychological treatment and were included in a treatment trial. Participants were not randomly selected or recruited specifically for the purpose of this master-thesis.
Chapter 2. Research overview and theory

2.1. Outline
The research overview will start with a review of research on personal petitionary prayer and health. For this overview I conducted searches using Medline, Scopus, and also Google scholar to locate recent studies. I also checked citations of earlier studies to locate recent empirical studies. Next, I describe how prayer has been defined in research including the psychology of prayer, describe coping theory and end with a work plan.

2.2. Research on Personal Petitionary Prayer
Given that it is a very common form of prayer and the focus of this master-thesis I will review research on personal petitionary prayer, and in particular how much this form of prayer is used when coping with health problems. Asking God or a higher power for help in times of trouble is very common. For example, McCaffrey et al. (2004) in a national survey in the United States (N=2055) found that 35% of their respondents used prayer for health concerns. Of special interest for the present master-thesis was the finding that among the 296 participants who reported having chronic digestive problems (which includes IBS) 20% reported using prayer and among those 53% found prayer to be very helpful. In another much larger survey from the United States (N=31044), the authors reported that with the last 12 months as many as 43% of adults had prayed for their own health (Barnes et al., 2004). In yet another study from the United States (N=1714), the life-time prevalence of praying for oneself was as high as 78.8 % (Levin, 2016). To my knowledge there is not much research from Sweden on the use of prayer, but in one recent Swedish study on cancer patients (N=376) the authors reported that 3.7% had used prayer before diagnosis which increased to 6% after cancer diagnosis (Källman et al., 2023). This indicates that there are substantial differences in the practice of personal petitionary prayer between countries, most likely reflecting differences in organized religion between the United States and the Nordic countries (Zuckermann, 2008).
There are different ways to measure personal petitionary prayer and in the context of health research it is often measured by just a few questions and then focused on petition/coping. For example following Ladd and Spilka (2002) petitionary prayer is a form of outward prayer, but as stated elsewhere other forms of prayer may occur as well in association with health problems. In this master-thesis the role of prayer in coping with IBS will be addressed from the perspective of a few items included in one of the most widely used measures of pain coping strategies - the Coping Strategies Questionnaire (CSQ; Rosenstiel & Keefe, 1983). The authors of this scale included a subscale called Praying or Hoping, but a separate subscale for Praying has been derived based on a factor analysis by Robinson et al. (1997), who reported a high internal consistency of $\alpha= 0.85$ for the Prayer subscale which includes three items: “I pray to God it won’t last long” “I pray for the pain to stop” and “I rely on my faith in God” (see methods section for translated items). Most studies have unfortunately not used the Prayer subscale but rather the full Praying or Hoping scale. I have only located one empirical study on IBS in relation to this full Praying or Hoping subscale (Lackner & Gurtman, 2004). The study included 179 IBS patients and the authors reported a statistically significant positive correlation ($r= .19$) between the Praying or Hoping subscale and a measure of symptom distress (Global Severity Index) (Lackner & Gurtman, 2004). This finding suggests that in IBS more distress can be associated with more prayer/hoping, but as the prayer subscale was not reported separately it is uncertain to what extent this relates to prayer only.

There a few studies on pain that have used the Prayer subscale and in one Swedish study on 118 participants with chronic pain positive correlations between the prayer subscale and measure of pain interference, pain distress and a measure of anxiety/depression were reported (Andersson, 2008). This also indicates that prayer can be associated with more problems rather than the contrary. The findings were in line with a study from the United States which focused more broadly on private religious practice and reported similar findings with worse health being associated with more use of religious practice (Rippentrop et al., 20005). When it comes to the effects of personal prayer in relation to pain there is more research published, including controlled studies and even systematic reviews (e.g., Illueca & Doolittle, 2020; Jarego et al., 2023). Results are still inconclusive and it is likely that the effects of personal prayer can be influenced by factors like culture, religious affiliation and cognitive factors like appraisal (Dezutter et al., 2011).

Overall, the evidence regarding the effects of personal petitionary prayers on health is mixed, with both positive (e.g., forgiveness, happiness and physical health) and negative (e.g.,
more prayer being associated with more distress) outcomes being reported (Thoresen, Oman, & Harris, 2005). It is important to repeat here that prayer in relation to illness can involve different reasons and topics (e.g., assurance, lamentations etc.), and that my focus here is on personal petitionary prayer. As the literature on the use of personal petitionary prayer in persons with IBS is scarce and not known in a Swedish setting I decided to focus my master-thesis on this topic. The Swedish setting is of particular interest as the population often is described as among the most secular in the world (Granqvist & Moström 2014; Inglehart et al., 2014), which makes it important to study the role of personal religious behaviour (such as praying) as more organized forms such as church attendance and membership are low compared to many other countries as mentioned for example the United States (Zuckermann, 2008). This may change now (Wilander & Stockman, 2020), but the data that will be reported in this master-thesis were collected more than 13 years ago when the Inglehart et al. (2014 ) findings most likely were still valid.

2.3 On Praying and the Psychology of Prayer

Williams James (1902) in his influential textbook *Varieties of religious experience* wrote about prayer and argued that it was the very soul and essence of religion (p. 404), although he among many subsequent thinkers stated that petitional prayer is only one form of prayer. In research praying is often defined in terms of different forms, functions and styles of prayer, and is generally understood as being multidimensional (Ladd & Spilka, 2002). Again referring to Williams James a broad definition could be “every kind of inward communion or conversation with the power recognised as divine…” (p.464). Numerous different kinds of prayer have been described/outlined, and I believe it is important to mention that forms and functions may vary even within one prayer activity. However, one common categorization has been promoted by Ladd and Spilka (2002), quoting Foster (1992) who identified as many as 21 different forms of prayer. Ladd and Spilka (2002) refer to three types or directions of prayer. *Inward prayer* has to do with self-examination and wilfully entering a relationship with the divine but with a personal focus such as self-evaluation, expression of one’s flaws, relinquishment of desire, seeking personal formation, or entering a covenant with the divine. Next, *outward prayer* relates to the physical world and needs that are to be satisfied from outside the person (for example by God). This includes intercessory prayer and more important in this master-thesis petitionary prayer, in which the person asks for something.
The third category outlined by Ladd and Spilka (2002) concerned *upward prayer*, dealing with the superior position of God and resting in the prayerful moment. This can include meditation and contemplation of the divine-human relationship, expression of intimacy and love of the divine, and sacramental praying using established phrases. Overall, they relate to human dependence on God. Spilka et al. (2003) concluded that the most stable forms of prayer that have been identified in the literature are: petitionary, ritualistic, meditational, confessional, thanksgiving, intercessory, self-improvement and habitual. However, they also concluded that petitionary prayers are the most common ones, but here I again stress that this is in no way obvious (Shuman & Meador, 2003) and that a consumer-oriented and medicalized perspective on prayer can be problematic (if I am not helped religion does not work, or God does not exist). Understandably, according to Spilka et al. (2003) “it is often treated negatively by religionists” (p.491).

In relation to the coping framework in this master-thesis (see below on coping theory) prayer in different forms can be viewed as active cognitive coping strategies. This may range from problem-focused coping (a way to solve a problem, or to gain strength before implementing a change) to more emotion-focused coping (dealing with the reactions and the situation per se). Moreover, praying can serve different psychological functions (e.g., distraction, hope, acceptance, social), and be influenced by religious personal beliefs such as perceiving that God has abandoned the person, or that God will provide support and comfort but not change anything, which is likely to influence subsequent prayer activities (Phillips et al., 2004). It can also be much influenced by social factors such as praying together with other persons in church or with significant others in a family (Froese & Jones, 2021).

### 2.4 Theories on the link between religion and health

Much has been written about the link between religion and health and there are many empirical studies as well. While Sigmund Freud argued that religion was more or less an illusion (Freud, 1927/1961), most theories and empirical studies in the field of psychology and religion do not take a stand regarding whether there is a God or not, but rather focus on the role religion has for humans when we face with health problems (for a discussion of the role of religion and spirituality in modern secular society see Geels & Wikström, 2017). Several psychological perspectives have been applied and discussed in order to understand the link between religion and health (Levin, 2009), including behavioural, cognitive, affective,
personality-oriented, developmental and even psychophysiological. In a comprehensive review on the topic Koenig, McCullogh and Larson (2001) highlighted that there are theories and research regarding both positive and negative effects of religion on health (the latter being for example when religious affiliation is linked to conflicts), indicating how complex this field is, which was also commented on by Lowenthal (2007). In this master-thesis I acknowledge this complexity and focus on the health psychology perspective in which religious behaviour can be conceptualized as coping strategies (i.e., religious coping, Pargament, 1997).

Religious coping has been framed within a wider theoretical framework of coping theory (Lazarus & Folkman, 1984), and the work by Pargament has been influential in his research on the link between coping theory and religion (Pargament, 1997). Briefly, this means that religious coping can be viewed as being part of a process of appraisal of an event (e.g., the experience of abdominal pain), which can result in viewing the event/experience as a threat, a loss or as a challenge (Spilka et al., 2003). The next step in the coping process consists of a secondary appraisal during which the individual resources for handling the problem(s) are reflected upon. Following the first appraisal/resource phase coping strategies may be used. These are often classified as being either problem-focused or primarily emotion-focused (Lazarus & Folkman, 1984). One example of how coping strategies are conceptualised is the distinction between actually confronting, facing and or at least approaching the problem, versus the opposite strategy of avoiding/escaping the situation (avoidant coping). Such distinction can also be divided into problem-focused (in the case of avoidance: running away from the problem) or mainly emotion-focused (disengaging mentally – cognitive avoidance). Moreover, it is also important to consider if the problem can be viewed as modifiable or more or less unchangeable (Pargament, 1997). Not the least is the latter distinction important for health conditions that are chronic in nature.

2.5 Work plan
Religious coping is often seen as a category of coping strategies within a religious framework, such as denomination, religious orientation, habits, views of life et cetera (Gall et al., 2005). But they can also be understood in relation to the broader coping theory framework. In this master-thesis I focus on personal petitionary prayer which can be seen as a problem-focused coping activity aimed at solving a problem. But it can also serve as an emotion-focused strategy to handle reactions and even accept a health problem. In addition, prayer from a
coping theory perspective could also be used as an avoidant coping strategy and to distract thoughts about the problem. I will approach the question on the role of prayer in IBS from a quantitative perspective and use statistical methods to investigate associations. I will use the theoretical perspective of coping theory in association with the presentation of the quantitative findings. This is one way to study the role of religious coping/prayer when coping with IBS and not the only way. I also acknowledge that prayer can serve different functions and that the focus on petitionary prayer here leaves out other functions of religion and prayer when dealing with health problems.
Chapter 3. Method

3.1 Procedure, sampling and ethical considerations

Participants in this master-thesis were all taking part in a treatment study on IBS reported earlier (Ljótsson et al., 2010). They were recruited via advertisement and media and could come from whole Sweden (e.g., a self-recruited convenience sample). The study was conducted over the internet, which means that all self-report measures and the delivery of the treatment were presented over the internet. However, before inclusion in the study all participants were interviewed using a structured telephone interview during which medical history, current medical problems including questions about symptoms that would lead to exclusion from the trial, previous and current treatments were reviewed (Ljótsson et al., 2010). More details regarding inclusion and exclusion criteria are provided in the treatment trial. Briefly, to be included an IBS-diagnosis based on the Rome III criteria had to be fulfilled, which include abdominal pain or discomfort combined with diarrhoea and/or constipation (Longstreth et al., 2006). Other gastrointestinal symptoms such as sense of urgency, bloating, and feeling of incomplete evacuation were also common. Even if it was required that participants were in contact with their regional health care facilities, all interviews were reviewed by a gastroenterologist and a psychiatrist before inclusion. Alarm symptoms (for example bleeding) and severe psychiatric illness lead to exclusion and advice on where to seek help.

All included participants completed a set of validated online-administered self-report inventories before and 10 weeks after the treatment period. Online administration of self-report questionnaires has been found to yield reliable data (van Ballegooijen et al., 2016). The data presented in this master-thesis on prayer have not been used or presented elsewhere, but the treatment outcome data (not relating to praying) was reported in the treatment trial (Ljótsson et al., 2010).

The study procedure was approved by the regional ethics committee at Karolinska Institute. No additional ethical concerns were raised by using the questionnaire data in this master
thesis and no personal data (identifiable) were handled by me. The anonymous data were given to me encrypted and with no links to the original data files at Karolinska Institute.

3.2 Participants
The data used in this master-thesis were derived from all 85 participants who had been included in the treatment trial after they had responded to a call for participants in a treatment trial (e.g., self-selected sample). The average age of the participants was 34.6 years (SD=9.4) and the number of years since IBS had been diagnosed was 6.3 years. A majority (72/85, 85%) were women and the sample was also well educated with 64% having at least some college education or higher. They received no monetary compensation for participating but there were no costs for the intervention or travel expenses. For more information see Ljótsson et al. (2010). The data collection regarding pain coping strategies included questions regarding prayer (see below). As this was only a small part of the original study no information regarding religious affiliation or practice (e.g., church attendance) was collected.

3.3 Measures

3.3.1 Coping Strategies Questionnaire –praying subscale
The coping strategies questionnaire (CSQ; Rosenstiel, & Keefe, 1983) is a widely used scale in pain research and contains items which directly measure praying as a coping strategy (see introduction). The subscale “Praying” from the CSQ includes three items relating to prayer: “I pray to God it won’t last long” (Jag ber till Gud att det snart måste gå över). “I pray for the pain to stop” (Jag ber en bön att smärtan skall upphöra), and “I rely on my faith in God” (Jag förtröstar på Gud). The Praying subscale includes three of the six items from the original “Praying or Hoping subscale. Each item is in the form of a 0-6 Likert type scale. The praying subscale is the main variable of interest in this master-thesis.

3.3.2 IBS-related measures
Three measures of IBS symptoms and distress were included. First, the Gastrointestinal Symptom Rating Scale modified for patients with IBS (GSRS-IBS) was used (Wiklund et al., 2003). The GSRS-IBS measures severity of GI symptoms experienced during the last week and consists of 13 items covering IBS and other gastrointestinal symptoms which are scored
between 1 (no discomfort at all) and 7 (very severe discomfort), rendering a total score between 13 and 91. The measure has good psychometric properties (alpha .85). As a second IBS measure I used the Irritable Bowel Syndrome Quality of Life Instrument (IBS-QOL) (Patrick et al., 1998), which measures the impact on quality of life for patients with IBS. It includes questions regarding dysphoric thoughts, symptoms interference with activity, food avoidance, and impact on relationships. The total score, based on 24 items, ranges between 0 (minimum quality of life) and 100 (maximum quality of life) and the scale has good psychometrics (alpha .95). The third IBS measure was the Visceral Sensitivity Index (VSI) (Labus et al., 2004) measures gastrointestinal-specific anxiety and includes 15 items. It is scored between 0 and 75 and has good psychometrics (alpha .90).

3.3.4 Other measure

As a control measure of symptoms of depression I used the Montgomery-Åsberg Depression Rating Scale-Self report (MADRS-S) (Montgomery & Åsberg, 1979). This measure includes 9 items scored between 0-9 and is summed into a total score that can range between 0-54 points. The measure has adequate psychometric properties (alpha .90).

3.4 Statistical analyses

The data were analysed using parametric statistics (e.g., Pearson correlations and regression analyses). The psychometric property of the brief measure of praying is also presented.
Chapter 4. Results and theoretical analysis

4.1 Descriptive statistics and internal consistency
Means and standard deviations for the included measures at the first measurement occasion are presented in Table 1. Cronbach’s alpha for the CSQ-praying scale was .82, which is high for a three-item measure. The prayer scores were also normally distributed (Skewness = 1.2, Kurtosis = 0.3), but with a large standard deviation.

Table 1. Intercorrelations, means and standard deviations for prayer, IBS symptoms, quality of life, anxiety and depression scores.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Praying (CSQ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.03 (4.05)</td>
</tr>
<tr>
<td>2. GSRS-IBS</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td>37.3 (12.01)</td>
</tr>
<tr>
<td>3. IBS-QOL</td>
<td>-.44**</td>
<td>-.57**</td>
<td></td>
<td></td>
<td>0.53 (0.19)</td>
</tr>
<tr>
<td>4. VSI</td>
<td>.42**</td>
<td>.36*</td>
<td>-.78**</td>
<td></td>
<td>43.7 (16.28)</td>
</tr>
<tr>
<td>5. MADRS-S</td>
<td>-.15</td>
<td>.39**</td>
<td>-.56**</td>
<td>.45**</td>
<td>12.21 (7.65)</td>
</tr>
</tbody>
</table>

*p<0.05, ** p<0.01

Note: CSQ=Coping Strategies Questionnaire; GSRS-IBS = The Gastrointestinal Symptom Rating Scale modified for patients with IBS; BS-QOL = The Irritable Bowel Syndrome Quality of Life Instrument; VSI= The Visceral Sensitivity Index; MADRS-S = Montgomery Åsberg Depression rating scale self-report

4.2 Associations between prayer and IBS measures

Cross-sectional correlations are presented in Table 1. As seen in Table 1 Praying was correlated with IBS-related quality of life in the sense that more prayer was associated with worse quality of life. When it comes to the VSI measuring gastrointestinal-specific anxiety
there was a statistically significant correlation with higher prayer scores being associated with more gastrointestinal-specific anxiety. Praying scores were not significantly associated with either IBS symptoms (GRS-IBS) or symptoms of depression (MADSR-S).

As a way to test the unique contribution of prayer in relation to IBS quality of life and anxiety I conducted two multiple regression analyses. Using IBS-QOL as dependent variable and the other four measures as predictors a significant model was obtained $F(4,84) = 59.4$, $p < .001$. All four measures contributed and the Prayer scale remained statistically significant (beta = -.165, $p < .01$). Using instead the VSI as dependent variable and the other four as independent variables also led to a significant model $F(4,84) = 32.8$, $p < .001$. For this model Prayer did not add to the model over the threshold (e.g., together with the other three variables), and only IBS-QOLI remained statistically significant.

In addition, I changed the model and entered Prayer as the dependent variable. Again the model was statistically significant $F(4,84) = 6.6$, $p < .001$, but only IBS-QOLI remained statistically significant. In sum, the correlation between Prayer and IBS quality of life appears to be robust and bi-directional whereas the correlation between Prayer and VSI measuring anxiety is weaker and not statistically significant when controlling for the other variables. It is however important to note that depression scores did not influence the associations between either Prayer and IBS-QOLI or the VSI, when using MADRS-S as covariate.

### 4.3 Prayer at 10-week follow-up

Data at 10-week follow-up were available for the Prayer scale. This was completed by 37 participants. The mean Prayer score was 1.35 (SD=2.25), but in spite of a reduction in use of Prayer as a coping strategy (from 3.03) this change was not statistically significant $t (36) = 1.6$, $p = .12$. At this time there were no associations with the other measures from baseline.

### 4.4 Theoretical analysis based on coping theory

In relation to the rich literature on the role of prayer in health, finding negative associations with prayer cannot only be dismissed by referring to selection bias and poor measures. As stated in my introduction negative aspects of religious activities have been commented on before (e.g., a correlation between praying and more problems with pain), but in my reading
of the literature on prayer most work has leaned towards a positive view of prayer and that prayer by definition should be helpful (Breslin & Lewis, 2008). Among the benefits stated are placebo effects, engaging in health-related behaviours and diverting attention from health problems. It can also be the case that the form of prayer I studied may be helpful in the long run even if the concurrent associations I found indicated the opposite. However, as I lean towards coping theory in this master-thesis it is useful to consider what kind of coping the prayer items used measured. The first two items can be characterised as problem-focused and avoidant coping (Lazarus & Folkman, 1984). Pargament (1997) has written about this and for example *deferring religious coping* when the sufferer leaves the responsibility to God instead of acting him/her self. He has also in his research studied negative religious coping when God is blamed for the problems (Pargament et al., 1998). Interestingly, Pargament (2002) also commented that it is important to note that there is nothing inherently good OR bad about religious coping. He argued that we need to study religious coping using different methods and considering individual needs, goals, situations and social context.

The third item in the CSQ prayer scale “I rely on my faith in God” could be characterized as emotion-focused coping but could also be interpreted as a form of attachment to God. Attachment theory was originally focused on the parent-child bond but was later expanded to adult relations (Holmes, 1993). Granqvist (2020) has worked on the adult-God attachment (see Granqvist 2020 for an interesting discussion about God as an attachment figure) and also commented on prayer: “Prayer is probably the most important form of proximity-maintaining attachment behaviour directed toward God” (p. 50, Granqvist, 2020). Again, I am left with many question marks as further questions would need to be included to grasp the function of religious coping as even an item like “I rely on my faith in God” can be interpreted as avoidant coping and even deferring in order to avoid taking own responsibility.
Chapter 5. Discussion

5.1 Overall findings

The aims of this master-thesis were to investigate the role of personal prayer viewed as a coping strategy in persons with IBS. As there is limited research on the role of prayer in relation to IBS the study was exploratory in nature and did not directly test any hypothesis. Previous research on chronic pain, which is a related condition as IBS involves abdominal pain and somatic discomfort, did indicate that in Swedish settings negative associations between use of prayer and pain may be present (Andersson, 2008) and that finding was observed in this master-thesis as well. Findings for both IBS-related quality of life ($r = -0.44$) and gastrointestinal symptom-specific anxiety (VSI) ($r = 0.42$) suggest that at least cross-sectionally more use of prayer is associated with lower quality of life and more anxiety symptoms. To further probe the unique contribution of personal prayer I ran regression analyses and could also check longitudinal associations to see if prayer 10 weeks later could be predicted by symptoms at baseline. Overall, personal prayer was more consistently associated with IBS-related quality of life which also predicted prayer. When controlling for other variables the association with VSI IBS-related anxiety became weaker and not statistically significant.

5.2 Empirical and further theoretical reflections

In this section I will comment on the findings and discuss possible explanations and theoretical frameworks. I will also comment on the instrument used and its validity. It is a challenge to understand why personal petitionary prayer was associated with more rather than less problems (in this case poorer quality of life) with IBS.

First, one potential reason could be that the sample included in the study were people in the general community seeking help for their IBS problems and it is possible that selection bias may have influenced the findings. In other words given the high prevalence of IBS and the fact that for IBS and numerous other non-lethal somatic problems (like for example tinnitus,
headache etc.), it is only a proportion (approximately 30%) that are much affected and experience psychological distress (Canavan et al., 2014). It could therefore be the case that “successful copers” with IBS engage in petitionary prayer which helps them and that they therefore do not seek more help (after being told in general practice settings that they have to live with their symptoms and perhaps being given only dietary advice).

Second, and related to the instruments used and their validity and reliability, I measured praying with just three items embedded in a pain coping strategies measure (CSQ). The items “I pray to God it won’t last long”, “I pray for the pain to stop” and “I rely on my faith in God” measure something meaningful but only capture a fraction of what prayer can be in relation to pain. Interestingly, while two items relate to escape and avoidance the last item is more general and is based on trust in God. Meints et al. (2023) recently argued that the measure I used – the CSQ prayer subscale- for long has been the only measure available and as a consequence they developed a new measures with more items. In my master-thesis the version used included the word God but interestingly in the initial Swedish translation of the CSQ the researchers made some changes and replaced the word “God” with the phrase “Higher power” (Jensen & Linton, 1993). It was this version that was used in the previous pain study by Andersson (2008). In this study however the original wording was used which includes the word God. I do not believe this made much difference, but given the secularisation in Sweden I referred to earlier in the thesis it can at least potentially be the case that some persons do not endorse a praying item if the word God is stated but would do if it had been a “higher power”. However, this would require more research and most likely interview studies as the distinction between praying for something in relation to God (“Please God help me”) versus hoping (“I hope I will get help soon and that the ambulance arrives”) may not be either or and most likely can occur simultaneously or in varying degrees even for a religious person. Regardless, the items I used asked about God which most likely at least an atheist would not regard as relevant. It is however important to acknowledge that the validity of self-reported prayer activity may not represent the actual experience of praying in the context where it occurs. In other words, the self-reported prayer scale measures prayer retrospectively and not in the moment. An alternative data collection method – albeit intrusive – would be to ask persons report when they pray using a smartphone application. This is a method called ecological momentary assessment (EMA; Shiffman et al., 2008), but has to my knowledge not been used much in research on religion.
As I only located one previous IBS study in which the six-item *Praying or Hoping* CSQ subscale was used (Lackner & Gurtman, 2004) I cannot directly compare my findings with that study, but the correlation reported by Lackner and Gurtman (2004) \((r=.19)\) is in the same direction as in this study even if the correlations were larger in my study \((r = -.44\) and \(r = .42\)). Moreover, not only the measure of prayer but also the IBS measures may have influenced the findings. It is not uncommon in correlational research that items in different measures overlap, but when it comes to the IBS-QOL (Patrick et al., 1998) all items are related to the symptoms and consequences of IBS (e.g., “I worry that my bowel problems will get worse”, “My bowel problems limit what I can wear”), and no items relate to coping or religion. The same applies for the VSI (Labus et al., 2004). With this in mind it would have been useful if items related to prayer and different IBS symptoms had been included as pain is one symptom among others in the experience of IBS (for example discomfort in association with diarrhoea may not be painful).

Finally, cultural aspects should be acknowledged. The study was conducted in Sweden, a majority of participants were educated women and they were rather young. Cross-cultural research would be welcome as there are at least some indications that religious coping in some cultural settings may be more positive (Abraido-Lanza et al., 2004). Indeed, even within cultures/countries religious affiliation may be important as in the study by Dezutter et al. (2011) who reported an interaction showing that high prayer activity was associated with less pain severity only for persons who had a religious affiliation. I will mention the lack of information regarding religious affiliation as a limitation of my study but it is likely that the sample at least were not more religious than the general Swedish population. Other cross-cultural aspect may also influence the findings. Swedish health care is usually covered by national health insurance and tax funded, which means Swedish patients can rely on receiving basic care for health problems at a very low cost compared to other countries in which care often requires private or company insurance. Swedes also tend to trust society, health care and the legal system (Inglehart et al., 2014). Interestingly, it has sometimes been argued that secularization can be linked with having a secure national state and that the church therefore is less needed than in cultural settings where there is very limited or no health care provided by the state (Berger, 1976).
5.3 Limitations

The master-thesis has limitations that I will comment on.

First, the study was not conducted with prayer and coping in mind and the data are rather old. Data on prayer were collected as part of the study and a few items in one of the included measures in the trial. Thus a major limitation is the lack of information regarding religious affiliation, belief in God and also religious activity overall. While moderation analyses would have required a larger sample (given that a majority in Sweden do not regard themselves as actively religious), it would shed more light on the possible role of belief when responding to the prayer items.

Second, the research design was correlational and even if it can be hard there are experimental analogue studies on the use of prayer as coping strategy when dealing with pain (e.g., Najem et al., 2023). In the short run I had access to data after 10 weeks but a longitudinal design following participants over at least a year would have been more informative. In particular, it would have been interesting to see if prayer activity follows the same course as the IBS symptoms or if they are independent over time.

Third, this study was based on quantitative data only and a mixed methods approach using both qualitative and quantitative methods would be helpful to gain more knowledge regarding how personal prayer is perceived and also influencing factors. There are studies on the lived experience of having IBS but to the best of my knowledge to a limited extent in relation to religion (Ahmed et al., 2021).

Fourth, and important to consider, is the fact that the sample was self-selected and had sought help for their IBS via the internet for inclusion in an intervention trial. They are therefore not representative for persons with IBS in the community even if they were recruited online and from the community.

Finally, even if the focus in this master-thesis was on personal petitionary prayer the literature on prayer is huge and would require a book length review to cover. With this comes the risk that the master thesis is scattered and that too many theoretical perspectives are mentioned even if I mainly focused on coping theory and prayer as a coping strategy. My defence here is that this reflects the literature and that between James (1902) and now there have been numerous ways to describe, define and capture what prayer is and does to us when we are confronted with health problems.
5.4 Future research

The findings in this study and in the previous Swedish study on chronic pain (Andersson, 2008) suggest that prayer as measured by a pain coping strategy questionnaire may be related to more rather than less symptom reports. As this most likely is the first prayer study on IBS the findings need to be replicated preferably with better measures of prayer and also more information about participants with regards to religious affiliation and activity. Future research may also benefit from having a cross-cultural perspective as there are major differences between for example Sweden and the United States that may be reflected in psychological research (e.g., Hallin et al., 2021). Finally, while prayer may be challenging to incorporate in any treatment strategies it can still be important to consider prayer from a psychotherapy perspective, for example the self-regulatory role prayer may play for mental health (Maltby et al., 2008). There are indeed studies in which religious beliefs have been incorporated in cognitive behaviour therapy showing promising findings (e.g., Tulbure et al., 2018), albeit perhaps not superior to regular treatment.

5.5 Conclusions

Prayer is a common activity in times of crisis and poor health. The present correlational study suggests that personal petitionary prayer may be associated with poorer IBS-related quality of life and anxiety in a Swedish treatment setting. More research on the role of personal prayer when coping with health problems is needed and also development of more specific and process-oriented measures of prayer and related religious behaviours.

**Syfte:** Det huvudsakliga syftet var att undersöka samband mellan böön som copingstrategi och IBS-symptom samt relaterad livskvalitet och ångest. Det andra syftet var att undersöka om användningen av böön ändrades över en 10-veckorsperiod samt om böön vid uppföljning kunde prediceras av IBS-symptom.

**Metod:** Uppsalen bygger på data som samlats in i samband med en behandlingsstudie för personer med IBS där internet-förmedlad kognitiv beteendeterapi testades (Ljótsson et al., 2010). Totalt ingick alla 85 deltagare med diagnosticerad IBS och jag fick tillgång till ett mått på böön som är en del av ett smärtformulär (the Coping Strategies Questionnaire). Tre frågor gäller böön och en delskala extraherades som visade sig ha goda psykometriska egenskaper. Jag fick även tillgång till mått på IBS-symtom, relaterad livskvalitet och ångest samt ett mått på depression. Deltagarna i studien var mestadels kvinnor (85%), med en högre utbildning (64%) och de var relativt unga (Medelålder 34.6 år). Data gällande böön har inte tidigare publicerats men resultaten från själva behandlingsstudien finns (Ljótsson et al., 2010).

**Resultat:** Jag fann statistiskt signifikanta samband mellan måttet på böön och IBS-relaterad livskvalitet ($r = -0.44, p<.01$) samt IBS-specifik ångest ($r = -0.42, p<.01$), och riktningen på dessa
samband var att bön var förknippat med mer problem. Regressionsanalyser användes för att kontrollera för överlapp mellan prediktorer och dessa analyser visade att bön var tydligast associerat med IBS-relaterad livskvalitet som i sig även predicerade bön. Poängen på bönskalan ändrades inte över tid och resultatet vid 10-veckorsuppföljningen kunde inte prediceras.

**Tolkning:** Resultaten överensstämmer med tidigare studier som visat att bön för att få hjälp kan vara förknippat med mer besvär med hälsan. Detta kan verka oväntat då bön snarare skulle kunna förväntas vara positivt och hjälpa. Det är dock viktigt att se att ”petitionary” bön är en form av bön och att långtidseffekter kan visa andra resultat. Dessutom har sannolikt religionstillhörighet samt kultur en betydelse för hur bön fungerar vilket bör beaktas i framtida forskning.
References


