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Prayer and subjective well-being: The application of a cognitive-behavioural framework

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Abstract

The aim of the present study was to examine the relationship between a model of prayer and a measure of subjective well-being within the context of a cognitive-behavioural framework. A community sample of 173 (77 males and 96 females) UK adults completed measures of prayer activity and the General Health Questionnaire-28. The present findings suggest that meditative prayer, frequency of prayer, and prayer experience account for unique variance (among other measures of prayer) in a general measure of subjective well-being. The results demonstrate the potential usefulness of a cognitive-behavioural framework to help better understand the relationship between prayer and subjective well-being

1. Introduction

For many religious faiths the power of prayer has been long acknowledged; and the role of praying for oneself and others, and the possible positive effects that surround mental health and wellbeing are well explored and debated within the media (Tessman & Tessman, 2000). Recent empirical research tends to support this view rather than challenge it. There are studies that suggest prayer has a beneficial effect on subjective well-being, in terms of both mental health and health variables. In terms of mental health variables, prayer, as part of the measurement of a general religious faith, has been found to be related to better mental health (Koenig, 2002) and frequency of prayer or meditative prayer have been shown to be related to better mental health (Herbert, Dang, & Schulz, 2007; Poloma & Gallup, 1991; Poloma & Pendleton, 1991). In terms of health variables, prayer is associated with fewer self-reported health symptoms (Banthia, Moskowitz, Acree, & Folkman, 2007) and perhaps more controversially, there is some evidence to suggest that praying for others may aid the health of those being prayed for (Tloczynski & Fritzsich, 2002).

Moreover, there is evidence that prayer may be a dominating variable in the relationship between religion and subjective well-being. Maltby, Lewis, and Day (1999) compared a number of religious measures (religious orientation, religious coping, and religious behaviours [i.e., church attendance and personal prayer]) in terms of their ability to predict unique variance in mental health. Among the religious measures, frequency of personal prayer was found to be the best predictor of better mental health.

However, these findings are difficult to bring together as they often employ single-item measures of prayer that are independent of the theoretical models of the different psychological components of prayer. Up to now, there is a tendency to attribute significant positive relationships between prayer and subjective well-being within a coping model, by way of prayer acting as a coping strategy by helping individuals appraise stressful events or as

an important daily meditative process alleviating stress. However, the current literature doesn't seek to directly test psychological models of coping. Therefore, there is a need to examine the relationship between prayer and mental health and health using conceptual measurement of the variables and theoretical frameworks to encompass the area.

There is an opportunity for the development of empirical research in this area from the potential use of a cognitive-behavioural framework (James & Wells, 2003). James and Wells propose two basic mechanisms, in the form of hypotheses that underlie the relationships between dimensions of religiosity and mental health that promote positive mental health: (a) a mental model that provides guidance for appraising life events, and (b) religious behaviours that provide self-regulation of cognitive, specifically thinking, processes.

The first cognitive-behavioural hypothesis is based on theoretical perspectives of Peterson and Roy (1985) and McGuire (1981) who suggest religiosity provides an interpretative framework that allows the individuals to make sense of their existence and contributes to an individual's self-perception, their own importance within the world, and the meaning and purpose behind life events (James & Wells, 2003). The second cognitive-behavioural mechanism is religious behaviours that contribute to self-regulation, or meta-cognitions, by reducing self-focus, worry, and stress, and therefore, lead to better subjective well-being. This hypothesis is based on the findings that some religious beliefs may increase, or be the result of attention to oneself, and that this is related to emotional disorder, obsessiveness, guilt, and worry (Wells, 1997; Wells & Hackman, 1993). James and Wells (2003) have suggested that meditative prayer may enable individuals to reduce self-focus, to engage mentally with stress, and therefore, lower worry and rumination. Research notes that meditation can aid mental health by way of the individual spending time in quiet reflection, being allowed to spend time to understand a context to the world and deal effectively with daily occurrences (Monk-Turner, 2003).

There is reason to think that the cognitive-behaviour framework model can be elaborated upon and applied to examine the relationship between prayer and subjective well-being. Poloma and Pendleton (1991) present a model of different types of prayer. This model suggests that prayer is made up of the following elements: frequency of prayer, praying with others, colloquial prayer (telling God of one's love and asking for blessing), petitional prayer (asking God for material things), ritual prayer (reciting prayers), meditative prayer (quiet thoughts and reflection), and prayer experience (inspired thoughts and deeper insight). Such a model contains two measures, prayer experience and meditative prayer, which are consistent with James and Wells' (2003) general cognitive-behavioural framework and the two specific hypotheses proposed by these authors.

- Figure 1 about here -

Figure 1 shows the integration of James and Wells' (2003) cognitive-behavioural framework and Poloma and Pendleton's (1991) prayer model in predicting better mental health. Within this model it is proposed that two particular dimensions of prayer (experience and meditative) will be shown to be important in predicting subjective well-being. First, Poloma and Pendleton's (1991) measurement of prayer experience contains items that reflect the frequency to which prayer leads to inspiring thoughts, provides answers to questions, and deeper insight to life. Therefore, within Poloma and Pendleton's (1991) model, prayer experience would seem to reflect James and Wells' (2003) first mechanism that suggests religiosity provides an interpretative framework that allows the individual to make sense of their existence and contributes to an individual's self-perception. Furthermore, and as James and Wells (2003) suggest prayer meditation reflects their second mechanism (self-regulation of thinking processes) whereby frequent quiet thinking about God, listening to God, and reflecting on the teachings of the Bible, provide the self-regulation by which individuals are able to lessen their self-focus, worry, and stress.

Attention to the cognitive-behavioural framework and the elements within prayer will provide a sounder theoretical context to understand why prayer may help people, and as such, begin to describe the processes which aid mental health and health. Consequently it is hypothesised from the cognitive-behavioural framework, and by using Poloma and Pendleton's (1991) model of prayer, prayer experience and meditative prayer would account for unique variance in mental health, over other indices of prayer.

2. Method

2.1 Sample

The sample comprised a community sample of 173 (77 male and 96 female) United Kingdom respondents aged from 18 to 51 years, with a mean age of 24.63 years ($SD = 5.8$ years). Respondents were sampled from a number of workplaces and church groups in the South Yorkshire area of the United Kingdom by the researchers approaching the heads or leaders of those groups or organisations and asking them to ask for volunteers for the study.

2.2 Questionnaires

All respondents were administered the following measures.

1. A measure of prayer activity (Poloma & Pendleton, 1991). The scale was developed among 560 USA adults and contains seven subscales. Each item is prefixed with a statement that refers to a frequency of a particular prayer behaviour or experience. The seven subscales are:

1. Colloquial Prayer (six items): talking to God in own words, asking for guidance, blessings, forgiveness, lessening world suffering, and telling God how much he is

loved. Responses for this scale are scored on a 4-point response format, with available responses being (1) Never, (2) Rarely, (3) Sometimes, and (4) Often.

2. Petitional Prayer (two items): asking for material things for oneself and for friends or relatives. Responses for this scale are scored on a 4-point response format, with available responses being (1) Never, (2) Rarely, (3) Sometimes, and (4) Often.
3. Ritual Prayer (two items): frequency of reading a book of prayer and reciting prayers that the individual has memorised. Responses for this scale are scored on a 4-point response format, with available responses being (1) Never, (2) Rarely, (3) Sometimes, and (4) Often.
4. Meditative Prayer (five items): ‘feeling’ God, thinking quietly about God, spending time worshipping God, reflecting on the Bible, and listening to God for his answer to prayers. Responses for this scale are scored on a 4-point response format, with available responses being (1) Never, (2) Rarely, (3) Sometimes, and (4) Often.
5. Prayer Experience (five items): being inspired or led by God, receiving a deeper insight into spiritual or Biblical truth, receiving a definitive answer to a prayer request, feeling a strong presence of God and experiencing a deep sense of peace and well-being. Responses for this scale are scored on a 5-point response format, with available responses being (1) Never, (2) Once or Twice, (3) Monthly, (4) Weekly, and (5) Daily.
6. Frequency of Prayer (one item): “on average how often do you pray?”. Responses for this item are scored on a 7-point response format, with available responses being (1) Never, (2) Less than monthly, (3) At least monthly, (4) At least weekly, (5) Several times a week, (6) Once a day, to (7) Several times a day.
7. Pray with others (one item): “on average how often do you meet others to pray?”. Responses for this item are scored on a 5-point response format, with available

responses being (1) Never, (2) Occasionally, (3) At least monthly, (4) At least weekly, and (5) At least once a day.

The only psychometric data reported previously on the scales is that for the multi-item measures (Poloma & Pendleton, 1991). Internal reliability statistics were satisfactory for all the subscales of prayer, exceeding the criteria offered by Kline (1986) for scales with few items (Colloquial Prayer, $\alpha=.85$; Petitional Prayer, $\alpha=.78$; Ritual Prayer, $\alpha=.59$; Meditative Prayer, $\alpha=.81$; and Prayer experience, $\alpha=.87$).

2. The General Health Questionnaire – 28 (Goldberg & Williams, 1991) asks respondents how they felt in accordance to 28 items over the last seven days. Each of these scales comprise 7-item measures of depressive symptoms (e.g., “Felt that life is entirely hopeless” [item 23]), anxiety symptoms (e.g., “Been getting scared or panicky for no good reason” [item 12]), social dysfunction (e.g., “Been taking longer over the things you do” [item 16]), and somatic symptoms (e.g., “Been feeling run down and out of sorts” [item 3]). A higher score indicates poorer well-being. The scale demonstrates satisfactory reliability and validity across a number of samples (Goldberg & Williams, 1991).

This measure of well-being was used as it reflects subjective well-being (shorter-term evaluation of well-being) as it refers to symptoms over the last seven days. The General Health Questionnaire can be used in two forms, subscales and overall form.

3. Results

Table 1 shows the internal reliability statistic for all the subscales. The Cronbach’s alpha coefficients for the multi item scales are above .7, suggesting that all the multi-item scales demonstrate adequate reliability among the present sample.

- Insert Table 1 about here –

Table 1 also shows mean scores and standard deviations for all the scales by sex. No significant difference occurs between males and females on any of the prayer measures. However, females were found to score significantly higher than males on the General Health Questionnaire, and the social dysfunction and depression subscales of this measure.

- Insert Table 2 about here –

Table 2 demonstrates the Pearson product-moment correlation coefficients between all the variables. A significant positive correlation occurs between all the prayer scales. In terms of the main aim of the study, higher scores on the General Health Questionnaire had a significant negative correlation with ritual, meditative, prayer experience and praying with others. In terms of providing a full consideration of the variables, the somatic symptoms, and anxiety and depression subscales of the General Health Questionnaire demonstrate a similar pattern of correlations, sharing significant negative correlations with ritual, meditative, prayer experience, and praying with others.

- Insert Table 3 about here –

However, to test the main hypothesis of the study, one multiple regression was performed to test the model. This analysis required two considerations to be made. The first consideration concerned the high correlation between all the subscales of the General Health Questionnaire, and the direction and significance of the correlation of each of the subscales of the General Health Questionnaire with the measures of prayer are very close. Moreover, the items of the General Health Questionnaire were subjected to a principal components analysis with the

number of components suggested to be extracted by a Scree Test. The Scree Test suggested one component to be extracted and loadings on the first component were all above .40, suggesting that among the present sample the General Health Questionnaire comprised one dimension. Consequently, overall scores were computed for the General Health Questionnaire with higher scores indicating poorer levels of subjective well-being. This integration of measures to form a general underlying factor of subjective well-being (present day balance between positive and negative affect) is consistent with the findings of Ryff and Keyes (1995). The second consideration was that the religious prayer measures also showed high inter-correlations and therefore entering them as separate measures into the model increased the risk of problems associated with multicollinearity. However, incorporating the measures or removing the measures to avoid multicollinearity (Tabachnick & Fidell, 1989) were not deemed appropriate solutions as this would threaten the testing of the main hypothesis using Poloma and Pendleton's (1991) model of religiosity. Therefore, in line with Poloma and Pendleton (1991), the present authors believe that the degree to which the independent variables are multicollinear is not detrimental to the analysis.

Therefore, overall scores on the General Health Questionnaire were used as the dependent variable and all of the religious prayer measures were used as independent variables. The regression statistic (\underline{R}) was significantly different from zero for scores on the General Health Questionnaire ($\underline{F}_{(4,166)}=6.38, p < .01$). Table 3 shows the full results for an unstandardised multiple regression. Included in this table are the unstandardised regression coefficient (\underline{B}), the standardised regression coefficients (β), the semipartial correlations (\underline{sr}^2), r , r^2 and adjusted r^2 . Among the present sample, meditative prayer, frequency of prayer, and prayer experience accounted for unique variance in scores on the General Health Questionnaire.

4. Discussion

The aim of the present study was to examine the relationship between Poloma and Pendleton's (1991) model of prayer and a measure of subjective well-being within the context of a cognitive-behavioural framework. The correlations between the variables suggest that ritual prayer, meditative prayer, prayer experience, and praying with others were all associated with better mental health scores. However, the results of the multiple regression suggest that meditative prayer, frequency of prayer, and prayer experience all account for unique variance in subjective well-being. That is, individuals who through their prayer, feel and think quietly about God in quiet reflection, who pray regularly, or who have feelings of deep well-being or deep experience of God report better subjective well-being.

This finding fits well within the James and Wells' (2003) cognitive-behavioural framework set out for this research, that Poloma and Pendleton's (1991) model of prayer contains both mechanisms that provide a basis for guiding appraisals of life events (prayer experience) and self-regulation of thinking processes (meditative prayer).

However, the findings from the multiple regression show that frequency of personal prayer also predicts unique variance with General Health Questionnaire scores, even though these variables do not show a significant correlation by way of the Pearson product moment correlation coefficients. Multiple regressions often reveal such relationships as the proportion of shared variance of such an emerging predictor variable will increase substantially after the other predictor variables shared variance have been removed. Subsequently, the present findings suggest that frequency of personal prayer is important to the current model. Within this context, it is not unexpected to find that frequency of personal prayer predicts unique variance in subjective well-being as all the measures of prayer used in the study refer to frequencies of prayer activity, feeling and behaviours and, therefore, frequency of prayer emerging as a central variable is to be expected. Therefore, it seems that this variable fits

within the cognitive-behavioural framework, but bridges both hypothesis 1 and 2. Figure 2 presents an amended model, suggesting the frequency of personal prayer as central to both cognitive and behavioural aspects of James and Wells' (2003) cognitive-behavioural framework when considering subjective well-being. The inclusion of frequency of prayer here is conceptually and empirically interesting as engaging in any prayer types in Poloma and Pendleton model reflects increased activity and frequency around prayer. Conceptually the findings suggest that an increased frequency of prayer activity in itself, regardless of the particular nature of prayer (with the exceptions of prayer experience and meditative prayer) is a central factor to consider when predicting relationships between religiosity and well-being.

- Insert Figure 2 about here -

In terms of future empirical research, the present study has provided an important step in providing a theoretical and empirical framework by which to understand the relationship between religiosity and subjective well-being that has both empirical and practical implications which has been absent from the psychology of religion literature. Consequently, future research should seek to expand on the present cognitive-behavioural model and compare these prayer measures against other theoretical domains of mental-health, such as psychological well-being (the longer term outcome of the engagement with wider individual development and the existential challenges within life, Keyes, Shmotkin, & Ryff, 2002).

In summary, the present findings suggest that meditative prayer, frequency of prayer, and prayer experience account for unique variance (among other measures of prayer) with a standardised measure of subjective well-being (depression, anxiety, somatic symptoms, social dysfunction). Therefore, the present study provides a potentially reliable and valid model that may aid practitioners to understand why praying may be crucial to better subjective well-being.

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Tables

Table 1

Mean (standard deviation) scores by sex and Cronbach's alpha coefficient for all the multi-item scales.

Scale	(α)	Men ($n=77$)	Women ($n=94$)	t
General Health Questionnaire	.94	24.38 (11.9)	29.09 (13.5)	-2.29*
Somatic Symptoms	.86	6.56 (3.5)	7.68 (4.7)	-1.74
Anxiety	.91	7.68 (4.5)	9.02 (5.4)	-1.74
Social Dysfunction	.77	6.36 (3.2)	7.38 (3.4)	-1.99*
Depression	.90	3.78 (3.1)	4.90 (4.0)	-2.03*
Colloquial	.95	13.09 (6.2)	12.83 (6.1)	.27
Petitionary	.88	3.58 (1.8)	3.79 (2.0)	-.71
Ritual	.80	3.45 (1.8)	3.79 (2.0)	1.22
Meditative	.90	9.32 (4.3)	9.15 (4.4)	.27
Experience	.93	6.61 (3.5)	7.36 (4.4)	-1.22
Frequency	N/A	2.08 (1.4)	2.28 (1.4)	-.96
Others	N/A	1.35 (0.9)	1.64 (1.1)	-1.86

* $p < .05$

Table 2

Pearson moment correlations coefficients between all the variables.

Scales	1	2	3	4	5	6	7	8	9	10	11	12
	(n=173)											
1. GHQ	--	.87**	.90**	.83**	.71**	-.13	-.10	-.24**	-.31**	-.25**	-.07	-.21**
2. Somatic Symptoms		--	.73**	.62**	.47**	-.06	-.05	-.17*	-.23**	-.25**	-.07	-.19*
3. Anxiety			--	.68**	.47**	-.16*	-.14	-.24**	-.33**	-.22**	-.08	-.19*
4. Social Dysfunction				--	.49**	-.03	-.05	-.21**	-.19*	-.08	.05	-.11
5. Depression					--	-.18*	-.07	-.18*	-.27**	-.25**	-.12	-.18*
6. Colloquial						--	.80**	.65**	.84**	.56**	.81**	.59**
7. Petitional							--	.62**	.73**	.43**	.62**	.60**
8. Ritual								--	.68**	.39**	.51**	.53**
9. Meditative									--	.69**	.71**	.69**
10. Experience										--	.73**	.65**
11. Frequency											--	.53**
12. Pray with others												--

* $p < .05$; **; $p < .01$

Table 3

Regression analysis for General Health scores with prayer measures (centred around the mean) used as predictor variables.

Scale	<u>B</u>	β	<u>sr</u> ²
<u>General Health Questionnaire</u>			
Colloquial	.12	.06	
Petitional	1.23	.17	
Ritual	-1.48	-.18	
Meditative	-1.67	-.54	.29**
Experience	-.94	-.28	.08 *
Frequency	4.40	.44	.19**
Pray with others	.79	.06	
		r^2	=.10
		Adj r^2	=.08
		r	=.32

* $p < .05$; **, $p < .01$

Figure 1

The application of James and Wells’ (2003) cognitive-behavioural framework in hypothesised relationships between Poloma and Pendleton’s (1991) model of prayer and well-being.

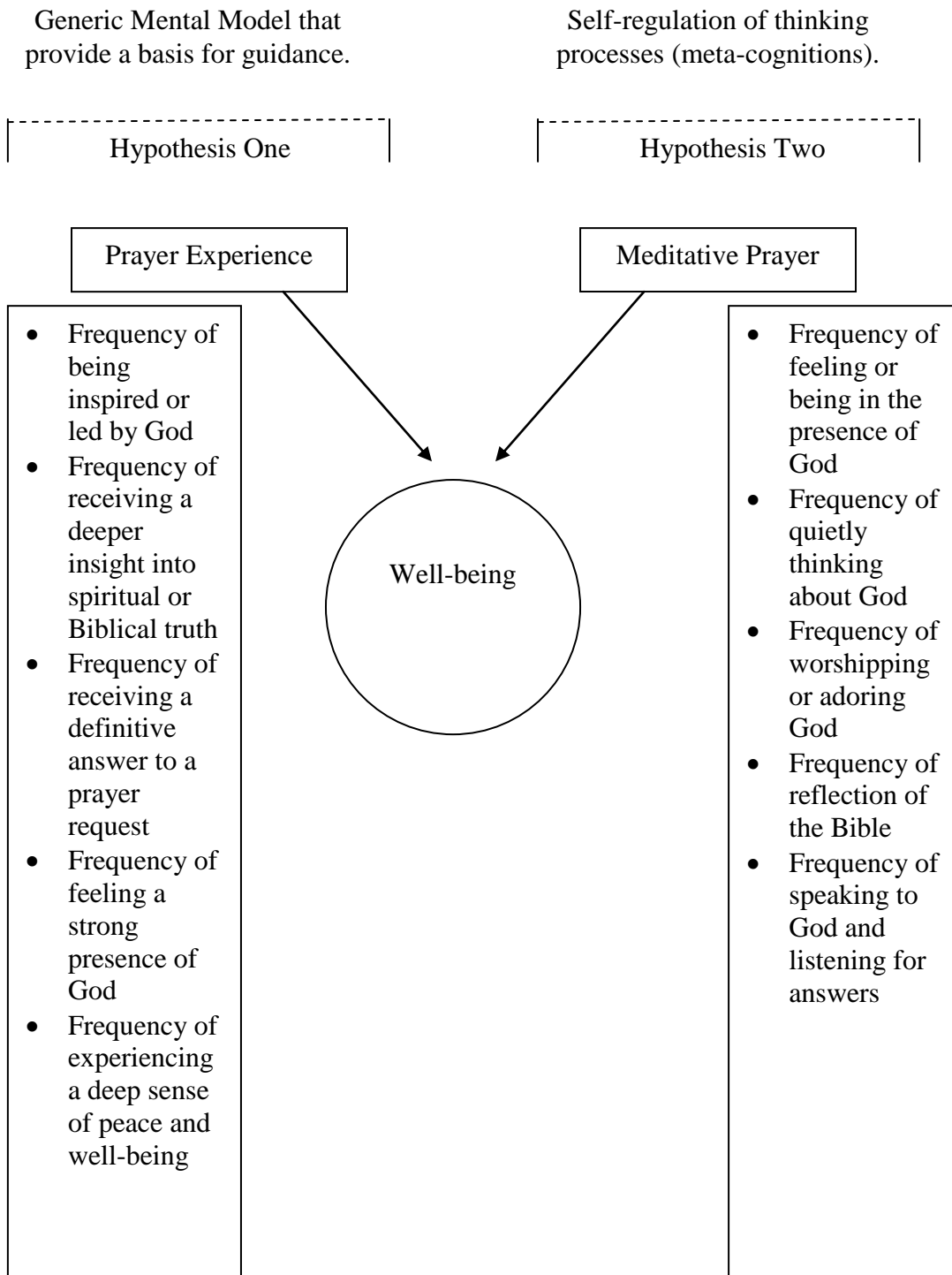
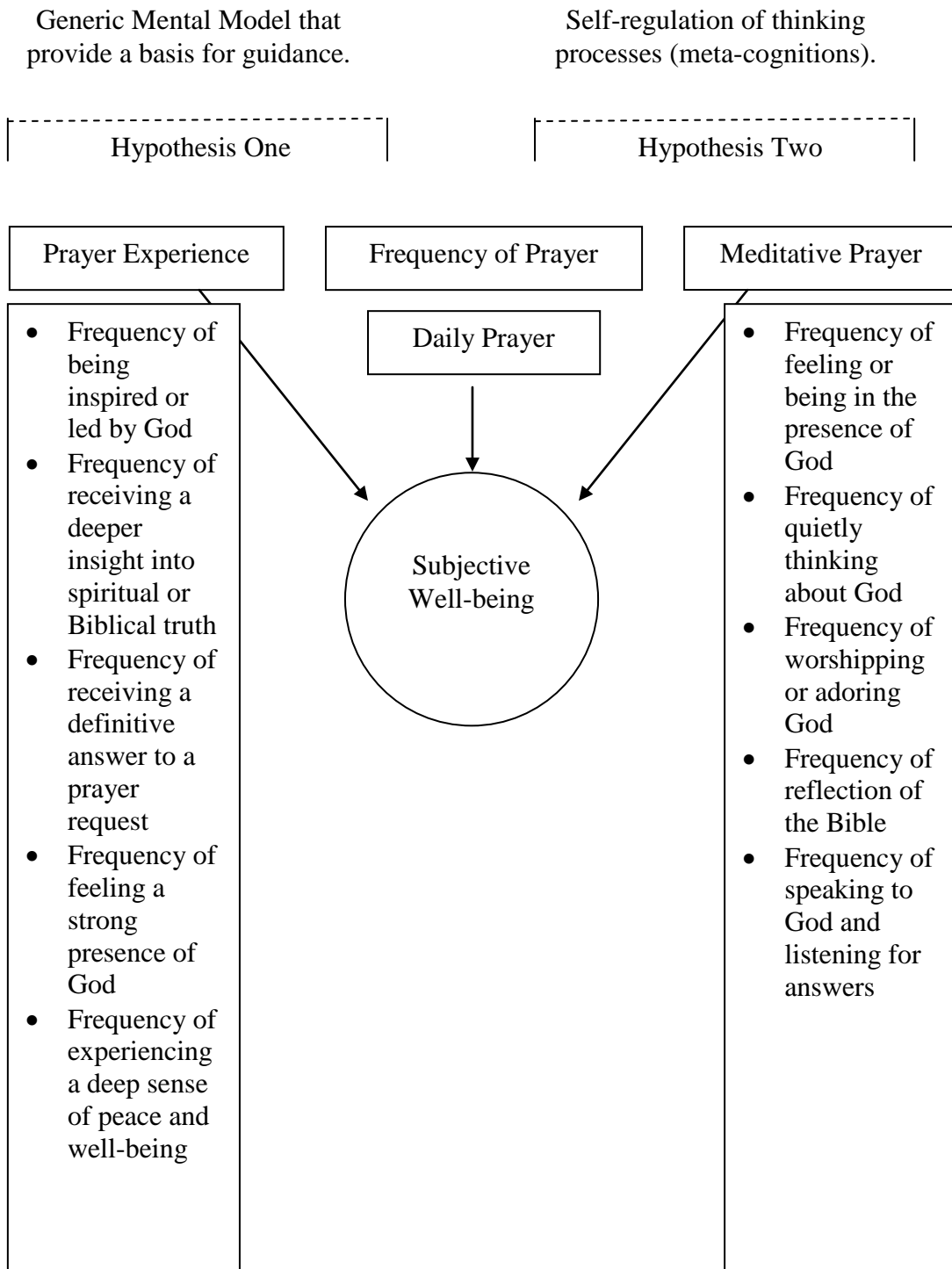


Figure 2

Empirical findings supporting the application of James and Wells' (2003) cognitive-behavioural framework to the relationship between Poloma and Pendleton's (1991) model of prayer and subjective well-being.



Footnotes

(1) To use the definition applied by (Ryff & Keyes, 1995) in making the empirical distinction between measures of shorter term evaluation of the balance between positive and negative affect (subjective well-being) and the longer-term well-being reflection, self-fulfillment, and engagement with life (psychological well-being).