The relation of intrinsic religiousness to the subjective health of Greek medical inpatients: The mediating role of illness-related coping

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The relation of intrinsic religiousness to the subjective health of Greek medical inpatients: The mediating role of illness-related coping

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A large number of studies suggest a significant beneficial relationship between religiousness and many health indicators. The aim of this study was to (1) examine the association between intrinsic religiousness and subjective health in a sample of medical inpatients; (2) examine the mediating role of illness-related coping. A cross-sectional design was employed. Participants were 128 inpatients suffering from a coronary artery disease, cancer, or a renal disease. Intrinsic religiousness was found to be uncorrelated to psychological symptoms or self-rated health. Weak to modest positive correlations were noticed with wishful thinking, emotional reactions, and palliative coping. These coping strategies were also found to mediate the relationship to subjective health measures. Results suggest a weak, indirect, and negative relation of intrinsic religiousness to participants’ subjective health. Situational, assessment, and conceptual factors may underlie the discrepancy between these findings and research supporting the health benefits of religiousness.

Keywords: religiousness; subjective health; coping; medical inpatients

Introduction

The purpose of this study was to examine the relation of intrinsic religiousness to subjective health in a sample of chronic patients admitted to hospital. Further aim was to examine the role of illness-related coping strategies as possible mediators in the intrinsic religiousness – subjective health relationship. Religiousness (which is a synonym of but not identical to spirituality) refers to the personal beliefs and experience connected to religion (Thoresen & Harris, 2004). Although religiousness is a multi-faceted construct and connected to well-being in various ways (Pargament, 1997), this study is focused on intrinsic religiousness, which refers to personal motivation and the inner experience of religion (Allport & Ross, 1967).

A large number of studies and several reviews conclude that in general there is a beneficial relationship between religiousness and many health indicators (e.g. Koenig, McCullogh, & Larson, 2001; McCullough & Laurenceau, 2005; Powell, Shahabi, & Thoresen, 2003; Thoresen & Harris, 2004). However, findings are not clear and seem to depend on a number of factors, such as the particular aspects of religiousness or health being assessed (e.g. Thuné-Boyle, Stygall, Keshtgar, & Newman, 2006; Yeager et al., 2006).

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Studies regarding religiousness in medically ill inpatients are less frequent than studies in ill outpatients, although hospitalization is an aversive condition that includes many separate stressful stimuli and seriously taxes patients' resources (Taylor, 1979). Religiousness may help inpatients cope with their condition and, thus, play a significant role in recovery (Pargament, 1997). In this regard, it is significant to identify the extent to which religiousness is associated with outcomes in inpatient populations.

Nevertheless, research findings about the role of religiousness in medical inpatients' health are inconsistent. Contrada et al. (2004), for example, in a sample of inpatients found that stronger religious beliefs were related to fewer complications, but attendance at religious services was unrelated to complications. Aghamohammadi Kalkhoran and Karimollahi (2007) in surgical patients, found no significant correlation between religious beliefs and preoperative anxiety. Fitchett, Rybarczyk, DeMarco, and Nicholas (1999) found no significant relationship between several religiousness indices and health outcomes in a sample of medical rehabilitation patients. Koenig, George, and Titus (2004) in a large sample of inpatients found that ‘organizational religious activity’ (frequency of attendance at religious meetings), ‘non-organizational religious activity’ (e.g. frequency of private prayer), and religious beliefs were related to higher levels of perceived social support, and fewer depressive symptoms. Contrariwise, most indices were unrelated to physical health. Also, Koenig et al. (1998) found that religious affiliation and religion coping of acutely hospitalized male medical patients were not associated with survival rates almost 10 years later. According to several studies (e.g. Fitchett et al., 1999; Koenig, Pargament, & Nielsen, 1998; Pargament, Smith, Koenig, & Perez, 1998), it is positive religious coping (e.g. spiritual support, benevolent religious reframing) that is associated with better health in clinical and normal samples. On the other hand, negative religious coping (e.g. punitive religious coping) is linked to poorer outcomes.

Recently, Chen and Koenig (2006) in a longitudinal study of medical inpatients reported another thought-provoking finding. They found that it was the worsening of the illness severity that preceded decreases in religiousness. This and the above-mentioned findings suggest that there is a great need for more data in order to elucidate the religiousness – health association in medical inpatients.

A further limitation in the study of religiousness refers to the lack of research that examines the specific pathways through which it is related to health (Thoresen & Harris, 2004). Although the beneficial role of religiousness is often attributed to several factors, such as its ability to generate positive emotions and promote healthy life-styles (Kim & Seidlitz, 2002; Powell et al., 2003), and although there is evidence that certain variables (e.g. optimism, social support) mediate the relationship between religiousness and well-being (Salsman, Brown, Brechting, & Carlson, 2005; Sherman et al., 2001), there is still need for mediation studies. Therefore, we examined the role of illness-related coping strategies as possible mediators in the intrinsic religiousness – subjective health relationship.

The role of coping in the stress process is well established. Religiousness, on the other hand, seems to be involved in the cognitive appraisal of a stressful situation and, therefore, in the strategies persons use to deal with that situation (Thoresen & Harris, 2004). Furthermore, coping is a critical factor for patients’ well-being (e.g. Gilbar, Or-Han, & Plivazky, 2005; Shen, Myers, & McCreary, 2006). However, their possible mediating role in the religiousness – health association has not been examined.
In this study, we focused on intrinsic religiousness, since overt religious behaviours (e.g. participation in religious activities) although an integral part of many religious denominations (Cohen, Hall, Koenig, & Meador, 2005), may be confounded with sociality (Donahue, 1995; Thyné-Boyle et al., 2006), as well as connected with the patient’s physical capacity (Chen & Koenig, 2006). Thus, many researchers underline the need to move beyond such indices (Cacioppo, Hawkley, Rickett, & Masi, 2005; Thyné-Boyle et al., 2006).

In sum, our research questions were: (1) is intrinsic religiousness related to subjective health (as assessed by psychological problems and self-rated health) in medical inpatients suffering from a chronic disease? (2) Is intrinsic religiousness related to subjective health even after controlling for demographic and medical variables (i.e. type of disease, illness duration, and health-related quality of life)? Both sets of variables are important for health and religion (Sloan, Bagiella, & Powell, 1999) and they could impact the health-intrinsic religiousness relation. (3) Does coping mediate the relationship between intrinsic religiousness and subjective health?

Method

Participants and procedure

Medical patients with a previous diagnosis of a chronic coronary artery disease, cancer, or chronic renal disease, who were admitted to a single urban public hospital in Greece, participated in the study. Of those invited by the researchers to participate, almost 65% agreed to. The main reasons for refusing participation were the lack of interest, and the inability to concentrate due to their health problems. The final sample consisted of 128 inpatients, 71 males (55.5%) and 57 females (44.5%). The mean age of the participants was 58.02 years (SD = 12.40). Fifty-one (39.84%) were suffering from a coronary artery disease, forty (32.25%) from cancer, and 37 (28.91%) from a chronic renal disease. All participants were Greek-speaking members of the Orthodox Christian Church (for information about the Orthodox Church we refer to Golitzin (1996) and Parry, Brady, Griffith, Melling, & Healey (2000)). Of the participants, 66.2% were married; 23.6% were divorced or windowed; 10.20% were singles. Also, 43.1% had finished the mandatory education or some grades; 33.6% had finished high school; 23.3% were holders of a higher education degree. Participants signed an informed consent form and completed the measures of the study in a single meeting with the researchers during their stay in hospital. The study was conducted after approval by the hospital Ethics Committee.

Measures

Psychological symptoms

Psychological symptoms were assessed by the 12-item version of the General Health Questionnaire (Goldberg, 1992). GHQ-12 produces a total score of current psychological problems (Cronbach’s α = 0.92).

Self-rated health

A single item measured overall self-rated health. Participants were asked to rate their personal health on a Likert-type scale ranging from 1 (worst possible health) to 100.
(best possible health). Despite its simplicity, self-rated health appears to represent a useful summary of the ways a person evaluates overall personal health (Fayers & Sprangers, 2002).

**Intrinsic religiousness**

The Intrinsic Subscale from the Religious Orientation Scale by Allport and Ross (1967) was used to assess intrinsic religiousness. It consists of 9 items (e.g. my religious beliefs are what really lie behind my whole approach to life; Cronbach’s $\alpha = 0.81$). Participants were asked to respond by using a 5-point Likert-type scale, with higher scores indicating higher intrinsic religiousness. This scale was selected as it has proven to be empirically robust and theoretically sound (Donahue, 1995).

**Coping with illness**

Illness-related coping strategies were measured with the Coping with Health Injuries and Problems Scale (Endler, Parker, & Summerfeldt, 1998), as adapted in Greek (Karademas, Zarogiannos, Stravodimos, Gyftopoulos, & Constadinides, in press). The Greek version consists of five factors: instrumental coping, which includes strategies such as information or medical help seeking (8 items; e.g. find out more information; Cronbach’s $\alpha = 0.78$); adherence to medical advice (4 items; e.g. comply with advice; Cronbach’s $\alpha = 0.82$); palliative coping, which refers to strategies aiming in reducing the unpleasantness of the health problem (4 items; e.g. stay in bed; Cronbach’s $\alpha = 0.64$); wishful thinking and daydreaming (5 items; e.g. wished it hadn’t happened; Cronbach’s $\alpha = 0.77$); emotional reactions (4 items; e.g. worry about my health; Cronbach’s $\alpha = 0.84$). Participants were asked to respond in relation to their own health problem by using a 5-point frequency Likert-type scale ranging from 1 (not at all) to 5 (very much).

**Health-related quality of life**

Health-related quality of life was assessed with the EQ-5D (Szende & Williams, 2004), which measures quality of life on five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression). Participants were asked to indicate whether they had no, some or many problems (levels 1–3) concerning the five areas described above. The data on the five dimensions is not continuous but ordinal. However, because the number of persons reporting severe problems is usually very small, the sum of the reported levels 2 and 3 is frequently used (Szende & Williams, 2004). Dimension 5 was omitted from analyses in this study, in order to avoid confounding with the psychological symptoms measure.

**Results**

All data were checked for assumptions of normality and homogeneity of variance before parametric analyses (using the Statistical Package for the Social Sciences, SPSS 15). Table 1 presents the correlations between intrinsic religiousness, subjective health measures (psychological symptoms and self-rated health), and coping strategies. Correlations of intrinsic religiousness to subjective health were low. Also, intrinsic religiousness was modestly related to three coping strategies: Emotional reactions, palliative coping and wishful thinking (Pearson
r = 0.23–0.31, p < 0.01). Higher intrinsic religiousness was related to more use of these strategies.

The association between intrinsic religiousness and subjective health measures, after controlling for demographic and medical variables, were examined with two hierarchical regression analyses. Self-rated health and psychological symptoms served as the dependent variables, whereas age, gender, educational level and marital status, as well as the type of disease (as dummy variables), illness duration, health-related quality of life (entered on step 1), and intrinsic religiousness (entered on step 2) served as the independent variables. As shown in Table 2, intrinsic religiousness did not account for a significant proportion of the subjective health measures variance (Δ$R^2 < 0.01$, $F_{\text{change}} (1, 115) = 0.1$, $p > 0.10$).

To examine whether coping acts as a mediator in the intrinsic religiousness – subjective health relationship, we followed the linear regression model proposed by Baron and Kenny (1986). Results are presented in Table 3. Three coping strategies (i.e. emotional reactions, palliative coping, and wishful thinking) were found to mediate the relationship of intrinsic religiousness to subjective health measures. It should be noted that the above-mentioned strategies have been related to worse health outcomes in previous research (e.g. Bucker, Evon, Losielle, Finkel, & Mill, 2005; McCabe, McKern, & McDonald, 2004).

Discussion

The purpose of our study was to examine the relation of intrinsic religiousness to subjective health in a sample of medical inpatients and test the possible mediating function of illness-related coping. According to the results, intrinsic religiousness was correlated neither to psychological symptoms nor self-rated health. Intrinsic religiousness was, however, related to stronger emotional reactions, as well as more use of palliative coping and wishful thinking. These three strategies were also found to mediate the relationship of intrinsic religiousness to subjective health measures. It should be noted that the above-mentioned strategies have been related to worse health outcomes in previous research (e.g. Bucker, Evon, Losielle, Finkel, & Mill, 2005; McCabe, McKern, & McDonald, 2004).

Although most research points towards a beneficial effect of intrinsic (as well as extrinsic) religiousness (Thoresen & Harris, 2004), results like the present are not uncommon at all. Several previous studies have demonstrated a weak and/or negative relation of intrinsic religiousness to medical patients’ well-being (e.g. Fitchett et al., 1999; Koenig et al., 2004; Powell et al., 2003). Such results underline...
the possibility that religiousness is either indifferent or even detrimental for well-being in certain conditions. In fact, Pargament and Ano (2006) have already suggested that an illness may sometimes lead to questions about personal relation with the deity or cause doubts about own religious beliefs, which in turn can be detrimental for health.

Table 2. Summary of hierarchical regression analyses for variables predicting psychological symptoms and self-rated health (N = 128).

<table>
<thead>
<tr>
<th></th>
<th>Psychological symptoms</th>
<th>Self-rated health</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1 – Demographics and medical variables</strong></td>
<td><strong>ΔR²</strong></td>
<td><strong>F_{change} (df)</strong></td>
</tr>
<tr>
<td>Psychological symptoms</td>
<td>0.27</td>
<td>5.31** (11, 116)</td>
</tr>
<tr>
<td>Self-rated health</td>
<td>0.12</td>
<td>2.61** (11, 116)</td>
</tr>
</tbody>
</table>

**Note:** In Step 1, the demographic variables entered were: gender, age, marital status, and educational level; the medical variables entered were: type of disease (as dummy variables), illness duration, and health-related quality of life.

Marital status coding: 0 = living with family, 1 = living alone; educational level coding: 0 = high school or lower, 1 = higher education; quality of life (problems with mobility, self-care, usual activities, pain) coding: 0 = no problems, 1 = some or severe problems.

**p < 0.01.

Table 3. Standard coefficients (β) derived from the linear regressions testing for the mediating effect of coping (N = 128).

<table>
<thead>
<tr>
<th></th>
<th>Psychological symptoms</th>
<th>Self-rated health</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relations of intrinsic religiousness to coping</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumental coping</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Adherence</td>
<td>−0.06</td>
<td></td>
</tr>
<tr>
<td>Palliative coping</td>
<td>0.31**</td>
<td></td>
</tr>
<tr>
<td>Wishful thinking</td>
<td>0.23**</td>
<td></td>
</tr>
<tr>
<td>Emotional reactions</td>
<td>0.24**</td>
<td></td>
</tr>
<tr>
<td><strong>Relations of intrinsic religiousness and coping to subjective health measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic religiousness</td>
<td>0.16^a</td>
<td>−0.05^a</td>
</tr>
<tr>
<td>Instrumental coping^b</td>
<td>−0.12</td>
<td>0.08</td>
</tr>
<tr>
<td>Adherence^b</td>
<td>−0.11</td>
<td>0.06</td>
</tr>
<tr>
<td>Palliative coping^b</td>
<td>0.28**</td>
<td>−0.19^*</td>
</tr>
<tr>
<td>Wishful thinking^b</td>
<td>0.39**</td>
<td>−0.31**</td>
</tr>
<tr>
<td>Emotional reactions^b</td>
<td>0.57**</td>
<td>−0.27**</td>
</tr>
<tr>
<td><strong>Relations of intrinsic religiousness to subjective health measures, controlling for ...</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumental coping</td>
<td>0.17</td>
<td>−0.05</td>
</tr>
<tr>
<td>Adherence</td>
<td>0.15</td>
<td>−0.04</td>
</tr>
<tr>
<td>Palliative coping</td>
<td>0.08</td>
<td>0.01</td>
</tr>
<tr>
<td>Wishful thinking</td>
<td>0.07</td>
<td>0.03</td>
</tr>
<tr>
<td>Emotional reactions</td>
<td>0.04</td>
<td>0.01</td>
</tr>
</tbody>
</table>

^aThe relations of intrinsic religiousness to subjective health measures were not significant. Although the predictor variable is usually expected to be correlated with the outcome variable, this path is not required for establishing mediation (Kenny, Kashy, & Bolger, 1998). The essential steps in establishing mediation are: (1) The predictor variable is related to the mediator; (2) the mediator affects the outcome variable, controlling for the predictor variable.

^bControlling for intrinsic religiousness.

*p < 0.05; **p < 0.01.
With respect to our results, the indirect relation of intrinsic religiousness to subjective health might be the result of our participants’ condition. They were dealing with a major stressful condition (i.e. hospitalization), which is probably more affected by close situation-specific factors than more ‘distant’ variables, like religiousness (Lazarus, 1999). A second possibility might be that hospitalization is such a severe stressor (Taylor, 1979) that overwhelms patients. In such conditions, certain usual resources (e.g. intrinsic religiousness) are possibly missing a large part of their potential influence. In addition, our sample consisted of patients at different stages in their illness course. That might have interfered with the results, since the use of religiousness as a resource varies with the progression of the disease (Pargament, 1997; Sloan et al., 1999). This does not, however, explain the negative, even if indirect, effect of intrinsic religiousness on subjective health.

A possible reason for the negative effect of intrinsic religiousness might be that patients, when their health condition worsens, tend to give up religion as a coping mechanism, as it appears incapable of protecting them (Chen & Koenig, 2006). In turn, however, this tendency may negatively affect health (Pargament & Ano, 2006). Another possibility might be that it is not intrinsic religiousness in general, but its specific features that are related to well-being. Different ‘accents’ or manifestations of religiousness may lead to dissimilar associations with functioning and health. If personal religious beliefs are based, for example, on fear or expectation of rewards, then the emergence of a negative event (i.e. a hospitalization) could be perceived as an undesirable and frustrating punishment or as a warning from God. In that case, intrinsic religiousness would be related to worse evaluations about the illness and more negative reactions, as in this study. Indeed, a number of studies have demonstrated that certain ‘negative’ religious reactions (such as, doubt regarding faith or God) are related to lower levels of health and well-being (e.g. Koenig et al., 1998; Pargament, Koenig, Tarakeshwar, & Hahn, 2004; Trevino et al., in press).

A further aim of the study was to test the possible mediating role of coping. The examination of mediating variables is important, as it will permit a more thorough understanding of the pathways through which religiousness is associated with health and functioning. Thus, it was an interesting finding that intrinsic religiousness was associated with subjective health through coping. This seems to provide support to the assumption that intrinsic religiousness represents a cognitive-appraisal component of the illness-related stress process, which also includes coping (Lazarus & Folkman, 1984). However, we should note that this is a cross-sectional study, which provides only a first support to our assumption about the relationship between intrinsic religiousness and coping. A longitudinal study is needed to verify it.

In summary, our results suggest an indirect and negative association between intrinsic religiousness and medical inpatients’ psychological symptoms and self-rated health. These findings imply that the impact of religiousness may not always be beneficial, at least for medically ill inpatients. These findings and conclusions should, however, be considered with caution. Religion is a complex experience embedded in culture, which is inextricable from personal well-being and lifestyle (Marks, Murray, Evans, & Willig, 2000). Thus, the examination of a single aspect of religiousness (i.e. intrinsic religiousness) and its relation to well-being may be insufficient. Moreover, our study is faced with certain limitations. It is a cross-sectional study, based on self-reported data. Consequently, no assumptions regarding the direction of causality
between the variables included in the study could be tested. Second, intrinsic religiousness, although a complex variance, was measured with a single instrument. Additionally, intrinsic religiousness is possibly reflecting an American Protestant view (Cohen et al., 2005) and, consequently, does not fit well to Orthodoxy. Third, a modest sample of inpatients suffering from different illnesses at different stages participated in our study. Also, participants were all affiliated to the same religious (as well as ethnic) group. Thus, our findings may reflect specific features of this particular group. Furthermore, results concerning palliative care coping strategy should be interpreted with caution as its Cronbach’s $a$ was rather low. Finally, the role of other significant coping strategies (such as seeking social support or denial) was not examined. On the other hand, our results stress the strong need for further research in order to clarify the role of religiousness in diverse populations and religious groups. Also, future research is needed to study the mediating role of several variables, as well as closely examine the role of several other religious mechanisms, such as religious coping (Pargament, 1997).

References


