



**Spiritual belief, social support, physical functioning and depression among older people in rural areas in Bulgaria and Romania**

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## Spiritual belief, social support, physical functioning and depression among older people in rural areas in Bulgaria and Romania

### Abstract

#### **Objectives:**

An exploratory investigation is reported into the role of spirituality and religious practice in protecting against depression among older people living in rural villages in Bulgaria and Romania, two neighbouring countries with similar cultural, political and religious histories, but with differing levels of current religiosity.

#### **Methods:**

In both countries interviews were conducted with samples of 160 persons of 60 years and over in villages of similar socio-economic status. The HAD-D scale and the Royal Free Interview for Religious and Spiritual Beliefs were used to assess depression and spiritual belief and practice respectively. In addition social support, physical functioning and the presence of chronic diseases were assessed. One year later follow-up interviews were conducted with 58 of the original sample in Bulgaria, in which additional measures of depression and of spiritual belief and practice were also included.

#### **Results:**

The study demonstrates, as expected, significantly lower levels of spiritual belief in the Bulgarian sample, as well as significantly higher levels of depression, the latter attributable in large part to higher morbidity and disability rates, but less evidently to differences in strength of belief. However analyses from both the cross-sectional study and the one year follow-up of the Bulgarian sample do suggest that spiritual belief and practice both influence and reflect physical and mental illness.

#### **Conclusions:**

Religious and spiritual belief and practice constitute important means of coping with both physical and mental health problems in later life. Further investigation of their protective role is encouraged in populations of diverse religiosity.

**Keywords:** religion; Eastern Europe; social change; coping; mental health services

## Spiritual belief, social support, physical functioning and depression among older people in rural areas in Bulgaria and Romania

### Introduction

#### *Depression, ageing and religion/spirituality*

Depression is a common mental health problem amongst older persons and with the projected rise in the older population combating depression has become a major priority for health policy. Major depressive disorder, characterised by the presence of a number of vegetative as well as psychiatric symptoms, is not frequent, but ratings of minor depression, characterised principally by symptoms of dysphoria or anhedonia, are high, reaching levels of 15-25% in some epidemiologic studies of adults aged 65 and over (Fiske & Jones, 2005).

Risk factors for depression are similar at all ages but many become much more common in older people: bereavement and other major life changes, resultant social isolation and loss of roles, and especially physical illness and chronic disability. Indeed the fact that depression levels are not higher than they are among the older age groups suggests some degree of resilience that increases with age. Understanding better the factors that help many older people to cope with the stresses and losses of later life could provide clues on ways to help better those who succumb (Brandstaedter, 2006).

One set of resources that have been relatively little investigated are religious and spiritual practice and belief (Coleman, 2010). In correlation studies conducted in the US these appear as minor although statistically significant associates (Smith, McCullough, & Poll, 2003). However their true significance may be much greater because persons may turn to greater use of religious coping in times of difficulties.

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3 For example, in contrast to church attendance which is associated positively with  
4 physical health, frequency of prayer activity is related negatively, suggesting its use as  
5 a coping resource (Nicholson, Rose, & Bobak, 2009).  
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10 Until recently the study of the relationship of religion and spirituality to  
11 mental health has been almost exclusively the preserve of North American researchers  
12 (Miller & Kelley, 2005) and reflect the high levels of religiosity evident in the US and  
13 elsewhere. However the recent development of measures of spirituality for use in a  
14 health context (Fetzer Institute, 1999; King, Speck, & Thomas, 2001; King et al,  
15 2005) now provide alternative approaches. They have some advantages over previous  
16 measures in that they emphasise assessment of general spiritual belief, thus reflecting  
17 the much lower levels of religious belief evident in European countries rather than the  
18 specific religious features of, for example, American evangelical protestant  
19 Christianity.  
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### 36 *The situation of older people in Bulgaria and Romania*

37 Eastern Europe provides major opportunities for research on depression in later life.  
38 There is evidence of high rates of depression in these countries linked to  
39 disadvantaged physical and social circumstances (Nicholson et al, 2008; Paykel,  
40 Brugha, & Fryers, 2005). The older population in particular has suffered significant  
41 decline in living standards, particularly pension values, following the collapse of  
42 communist government in the former Soviet block countries from 1989 onwards.  
43 They have also been affected negatively, especially in rural areas, by the out-  
44 migration of younger people. Studies have highlighted the challenges posed to older  
45 people's mental health and sense of well-being by the social upheaval in Eastern  
46 Europe in the last decade of the 20<sup>th</sup> century (Petrov, 1996a; 1996b).  
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3 Bulgaria and Romania are two neighbouring countries in South East Europe of  
4 similar levels of socio-economic development who have recently (2007) joined the  
5 European Union. They share many important cultural, religious and historical  
6 characteristics. Both, for example, were subject to Ottoman rule for many centuries  
7 but succeeded in preserving their Christian, principally Eastern Orthodox, heritage.  
8 However there are also striking religious differences between them. Whereas  
9 Romania has remained one of the most religious societies in Europe, which is evident  
10 also from the recent Eurobarometer report on values across the European Union  
11 (Eurobarometer, 2005), religious belief in Bulgaria has declined to a level more  
12 comparable to rates observable in Western Europe. This difference can be attributed  
13 in large part to recent historical factors. The Romanian Orthodox Church succeeded in  
14 maintaining a prominent role in society despite the persecution inflicted by  
15 communist governments (Gavril, Szilagyig, & Roudometof, 2005). It maintained a  
16 level of autonomy and was a trusted institution to fill the post communist era. By  
17 contrast, the Bulgarian Orthodox church found itself in a period of stagnation during  
18 communism, suffering considerable repression (Kanev, 2002). Since the fall of  
19 communism it has not yet been able to recover its previous position in society,  
20 although Orthodoxy remains a potent part of national culture and tradition.  
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45 It was hypothesised that in both societies religious belief and practice would  
46 have an overall positive association on mental health, but that this effect would be  
47 more apparent in Romania than in Bulgaria as a result of stronger religious norms of  
48 behaviour. Evidence in favour of this hypothesis has also been found in a recent study  
49 in Western Europe (Braam et al, 2001). Religion may be a more important resource,  
50 also at the individual level, in countries with a stronger culture of belief. It was also  
51 hypothesised that religious forms of coping would be more evident in circumstances  
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3 of physical and social stresses and would also be more beneficial in those  
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5 circumstances (Kirby, Coleman, & Daley, 2004). Therefore it was necessary to  
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7 include as part of the data collection measures of some of the main factors known to  
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9 be associated with depression in later life such as diminished physical functioning and  
10  
11 ill health, negative life events, and lack of social support Braam et al, 2005; Kraaij,  
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13 Arensman, & Spinhoven, 2002; Prince, Harwood, Blizard, Thomas, & Mann, 1997a;  
14  
15 Prince, Harwood, Blizard, Thomas, & Mann, 1997b).

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18 For this preliminary study it was decided to focus on rural rather than urban  
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20 areas. Studies of rural areas are often neglected despite risk factors for depression  
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22 being high there as well (Heilig, 2002). Moreover in Eastern Europe large proportions  
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24 of older people live rurally in isolation since younger adults tend to seek education or  
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26 employment in cities. The infrastructure of rural mental health services may also be  
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28 smaller with poorer accessibility (Yuen, Gerdes, & Gonzales, 1996). A recent United  
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30 Nations report on population ageing highlights the large differences in much of  
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32 Eastern Europe between the proportion of older persons in rural and urban areas, with  
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34 Bulgaria identified as one of only ten countries in the world in which people aged 60  
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36 or over constituted more than 25% of the total rural population (United Nations,  
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2010).

## Methods

### *Participants*

Rural areas were selected for study in both countries. Samples of 160 participants over the age of 60 years were collected from two villages in Bulgaria and one village in Romania, of similar apparent levels of affluence and of between 3,500-4,000 inhabitants each. Interviews were conducted first in a Romanian village lying 30 km from the city of Braşov. Subsequently interviews were conducted in a village situated 11 km from the city of Sofia. To match the Romanian numbers further interviews were conducted in an additional village situated 9 km from Sofia.

### *Measures*

The questionnaire consisted of sections taken and/or adapted from existing validated measures. Translation and back translation were used to ensure the language equivalence of the original and the target languages.

The primary outcome measure was assessed by means of the seven item Depression subscale of the Hospital Anxiety and Depression Scale (HAD-D). It is an easily understood self-administered scale that focuses on anhedonia (Flint & Rifat, 1995). Scores of 11-21 are generally considered to indicate probable depression, 8-10 possible depression, and 0-7 depression unlikely (Zigmond & Snaith, 1983).

The Royal Free Interview for Religious and Spiritual Beliefs (King et al, 2001) examines the strength and the consequences of spiritual faith. It was designed for use across a diversity of faiths. Strength of spiritual belief is calculated from five

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3 questions each scored on a 0 to 10 Likert scale, indicating the person's confidence in  
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5 belief in a transcendent power which relates to the individual, the society and the  
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7 world. The questionnaire includes additional questions on prayer and attendance at  
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9 communal religious worship. Prayer frequency was assessed on a six point scale;  
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11 attendance at worship on a five point scale.  
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15 Physical Limitation was assessed from the 10 item subscale of the MOS SF36  
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17 (Ware & Sherbourne, 1992). Additional questions were asked on the presence of any  
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19 long term illness or disability, as well as on age, gender, marital status, level of  
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21 education, employment, perceived financial status, and housing situation.  
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25 The Medical Outcomes Study Social Support Survey (MOS SSS) (Sherbourne  
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27 & Stewart, 1991) is a 19 item, structured, self-report questionnaire that the patient can  
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29 generally complete with little or no intervention from an interviewer. It has the  
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31 advantage of measuring four subscales: emotional/informational support, tangible  
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33 support, affectionate support and positive social interaction. It also generates an  
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35 overall functional social support value from 0 to 100.  
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39 'Threatening Life Events' encountered over the previous year were assessed  
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41 using a revised version of the scale devised by Brugha et al. (1985).  
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44 In addition each participant was asked to identify each 'major long-term  
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46 illness from which they suffered. The most frequently reported were joint diseases,  
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48 hypertension, ischaemic heart disease, and diabetes.  
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#### 51 52 53 54 *Procedure*

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57 Ethical approval was obtained from the University of Southampton to conduct  
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59 questionnaire based face to face interviews with participants in both Bulgaria and  
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3 Romania. Participants over the age of 60 years were recruited by means principally of  
4 door to door knocking in the villages concerned by Southampton medical students in  
5 the company of Bulgarian/Romanian interpreters during the late summer and autumn  
6 of 2007. The interviews were also monitored by medical doctors in both countries.  
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8 Interviews were conducted first in Romania. Refusal rates were low, but higher in  
9 Bulgaria than Romania (estimated at 35 vs 20%). Suspicion of government  
10 involvement in the study was a commonly cited reason for refusal in the former. A  
11 total of 160 persons were interviewed in both countries. To achieve this number in  
12 Bulgaria interviews needed to be extended to a second village.  
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16 Follow-up interviews were attempted with the Bulgarian sample exactly one  
17 year after the initial data collection, and it proved possible to trace and interview 58  
18 (36.3%) of the original sample. The same principal measures were used, apart from  
19 the assessments of chronic disease and social support, with some additions. Besides  
20 the HAD-D scale, the 15 item Geriatric Depression Scale (GDS) (Sheikh, &  
21 Yesavage, 1986) was also administered. Other additional variables assessed included  
22 the 'Beliefs and Values Scale' (King et al, 2005), which provided an alternative  
23 measure of strength of belief to the previous Royal Free Scale, and the  
24 Religious/Spiritual Coping subscale of the Multidimensional Measure of  
25 Religiousness/Spirituality for Use in Health Research (Fetzer Institute, 1999).  
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## Results

### *Sample characteristics*

Despite the apparent similarity of the villages there were notable differences between the two samples studied. As shown in Table 1, the Bulgarian sample, although only a little older in average age to the Romanian, contained significantly more women, more widows, and correspondingly more persons living alone. The Bulgarians also indicated that they were experiencing more financial difficulties.

#### TABLE 1

### *Prevalence of depressive symptoms*

Both the Bulgarian and Romanian samples, but especially the Bulgarian, indicated high rates of depressive symptoms. Indeed the mean score for the Bulgarian sample (11.99) was over the HAD-D scale's criterion for probable major depression. As Table 2 indicates depressive symptoms were expressed significantly more by females than males in both Bulgaria and Romania.

#### TABLE 2

### *Associations of depression with health, social support and recent life events*

Table 3 indicates mean scores on the assessed variables which might account for the significantly higher depression rates between the Bulgarian and Romanian samples: age, limitations in physical functioning, number of chronic conditions, social support,

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3 and number of recent life events, including bereavement over the last year (assessed  
4 also as a single item). These figures are separated for males and females.  
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12 Most striking are the difference on the health variables. Bulgarians indicated  
13 significantly higher rates of chronic illness (especially diabetes, stroke, hypertension,  
14 and ear/eye disorders) and limitations of physical function than Romanians. Females  
15 also displayed more physical dysfunction than males in both countries.  
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23 The differences on the measure of social support are smaller and not  
24 statistically significant. However Romanians did indicate a significantly greater  
25 number of family members to whom they felt close (for Romanians a mean of 9.13  
26 compared with 6.04 for Bulgarians). The other major difference was in regard to life  
27 events where the Bulgarians and particularly the Bulgarian women had suffered more  
28 recent life changes, in particular a close bereavement. It is plausible that both the  
29 higher morbidity and the higher bereavement rate might account for the higher level  
30 of depression among the sample of older Bulgarians.  
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44 Table 4 displays the Spearman correlations for depression with age, limits to  
45 physical function, number of chronic illnesses, social support and number of recent  
46 life events for the four groups. For both Romanian and Bulgarian males and for  
47 Bulgarian females the highest correlations are with limits to physical function, but for  
48 Romanian females lack of social support appears to be more important. Although  
49 there is no correlation with number of recent life events, recent bereavement was  
50 more frequent in the Bulgarian sample, and was associated with significantly  
51 increased depressive symptoms.  
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TABLE 4

*Associations with religious and spiritual variables*

Consistent with the findings of the recent Eurobarometer report, the Romanian sample displayed much stronger levels of spiritual belief than the Bulgarian sample (Table 5). Both Romanian males and females also displayed much higher frequency of prayer (praying on average almost daily whereas the average for Bulgarians was less than monthly) but, interestingly, not of attendance at religious services (averaging near monthly in both countries). It is also noteworthy that whereas strength of belief and prayer were significantly associated in all four groups, moderately among Romanian males and females (0.39, 0.36 respectively) and more strongly among Bulgarian males and females (0.70, 0.70), the same did not apply to strength of belief and church attendance. Only among the Romanian males (0.24) and the Bulgarian females (0.47) was this association statistically significant.

TABLE 5

Analysis revealed few associations between depression and the three religious variables studied (Table 6). There was a significant weak association between frequency of prayer and depression among Bulgarian females, and an approaching significant negative association between strength of belief and depression among Bulgarian males.

TABLE 6

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3 Analysis of relationships between the religious/spiritual variables and other predictors  
4 of depression showed no significant relationships with social support or life events.  
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6 However, limitations to physical function, and to a lesser extent age and chronic  
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8 illness, were associated with lower levels of church attendance among Romanians and  
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10 specifically Romanian females (-0.25,  $p < 0.05$  with limited physical functioning). By  
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12 contrast and more importantly, higher levels of prayer among females (but not males)  
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14 both in Bulgaria (0.46,  $p < 0.01$ ) and Romania (0.28,  $p < 0.05$ ) were also associated with  
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16 increased limitations to physical function. A similar pattern was found for chronic  
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18 illness in Bulgaria (0.23,  $p < 0.05$ ). This would suggest that prayer may be a coping  
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20 response to increasing disability with age, at least among women. This suggestion is  
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22 also supported by the additional associations found between physical limitation and  
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24 spiritual belief and between depression and prayer among Bulgarian females.  
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### 38 *Multiple regression analyses*

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40 Hierarchical multiple regressions were carried out to assess the independent  
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42 prognostic role of the various factors found to be associated with depression. The  
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44 independent variables were ordered in blocks, with block 1 consisting of age and  
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46 gender, block 2 physical function, block 3 social support, and the last block each of  
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48 the spiritual/religious variables in successive analyses.  
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52 In the Romanian sample, age and gender explained a significant percentage  
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54 (14.1%) of the variance in depression ( $p < 0.01$ ). Physical function added a significant  
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56 increment of 5.5% ( $p < 0.01$ ) and social support a further 10.9% of the variance ( $p <$   
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58 0.01). Strength of spiritual belief, church attendance and prayer did not make a  
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60 significant addition.

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In the Bulgarian sample, the results were similar, but with one important difference. Age and gender explained 15% of the variance in depression ( $p<0.01$ ), limitation in physical function a further 11.2% ( $p<0.01$ ), and social support a further 5.5% ( $p<0.01$ ). However in this sample strength of spiritual belief did make a further small but statistically significant addition (1.8%,  $p<0.05$ ). Strength of belief, as social support, appeared as a protective factor against depression.

#### *Follow-up study in Bulgarian sample*

The subsample of the original Bulgarian sample interviewed one year later displayed a somewhat lower but still very high level of depressive symptoms, with a mean score of 10.84 on the HAD-D scale compared with 11.98 the previous year. Thus still half the sample scored above the criterion for probable depression. As many as 32 (55%) of the 58 interviewed in 2008 also scored at or above the criterion mark of 5 indicating probable depression on the short Geriatric Depression Scale.

Similar significant associations of depression with age, physical function and bereavement (over the last year) were identified as at the previous year's assessment. In addition an association was found again between limited physical function and strength of belief (0.28,  $p<0.05$ ) and the newly introduced measure of religious/spiritual coping (0.30,  $p<0.05$ ), confirming the hypothesis that use of religion may be a coping response. Although correlations did not reach significance, a significant association was found between a GDS rating of probable depression and both a declared religious and/or spiritual understanding of life (chi square = 4.97,  $p=0.026$ ) and a high level of strength of belief (chi square = 8.85,  $p=0.012$ ).

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3 An additional analysis was carried out on those 'depressed' and 'not  
4 depressed' (above and below the criterion for probable depression on the HAD-D  
5 scale) in 2007 and 2008. The measure of religious/spiritual coping in 2008 was  
6 significantly associated with the depression score in 2007 (0.33,  $p < 0.05$ ), but not in  
7 2008 (0.12), which is consistent with the hypothesis that greater religious/spiritual  
8 coping is consequent upon depression. That a religious/spiritual attitude could also be  
9 beneficial is suggested by the fact that a comparison of those whose depression scores  
10 had declined over the year ( $n=30$ ) with those whose scores had remained static or  
11 increased ( $n=28$ ) had significantly higher strength of spiritual belief at baseline  
12 ( $p < 0.05$ ).

## 32 Discussion

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38 As expected this study uncovered relatively high levels of expressed depressive  
39 symptoms in both Bulgaria and Romania, but the degree of difference found between  
40 the Bulgarian and Romanian samples was unexpected. To a large degree the much  
41 higher levels of depression in the former could be attributed to the greater physical  
42 morbidity and lower physical functioning evident in the Bulgarian sample. Other  
43 studies have pointed to the high prevalence of disease, particularly high rates of  
44 stroke, in the older Bulgarian population (Dragoeva-Bozhinova, 2004).

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54 The higher reporting of depressive symptoms found in women in both  
55 Bulgaria and Romania was consistent with previous studies across a range of  
56 countries (Murakumi, 2002). Also consistent with previous studies was the finding  
57 that social support was negatively correlated to depressive symptoms in all cross-  
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3 sectional analyses. The Bulgarian sample displayed somewhat lower social support  
4 than the Romanian sample, so this could be a further factor in their higher levels of  
5 depression. However the differences in social support between the samples may be  
6 largely explainable by the higher widowed rates in Bulgaria. Although depression was  
7 not associated with number of recent life events, there was an association with  
8 widowhood over the course of the previous year in the Bulgarian sample. The same  
9 finding emerged in the smaller Bulgarian sample re-interviewed a year later.

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20 The principal aim of the study was to investigate whether spiritual and  
21 religious variables might also contribute to the differences in depression. In this  
22 respect the findings are both equivocal and suggestive. Certainly the markedly lower  
23 rates of depression in the Romanian compared with the Bulgarian sample coincided  
24 with an equally significant higher level of strength of spiritual belief in Romania.  
25 However the within countries cross-sectional analyses did not provide evidence of a  
26 strong protective relationship between strength of spiritual belief, religiosity  
27 (attending church) or spirituality (prayer) and avoidance of depression. Nevertheless  
28 the importance of national differences in religiosity should not be discounted, since  
29 they have been associated with differential rates of protection against depression.  
30 Braam and colleagues, for example, found fewer depressive symptoms among female  
31 older people in countries, generally Roman Catholic, with high rates of regular  
32 church-attendance (Braam et al, 2001).

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51 Religion is an important but neglected aspect of social capital. Whereas formal  
52 social capital describes participation in civil society or generalized (social) trust,  
53 informal social capital describes the density, strength and extensiveness of social  
54 networks (Pichler and Wallace, 2007). Bulgaria and Romania are both described as  
55 low on formal social capital and reliant on informal social networks. This is because  
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3 they have large rural populations and the transition after communism into the  
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5 European Union (EU) has been longer. In addition, integration deficits (feelings of  
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7 uselessness, inferiority and being left out of society) are more prevalent in Eastern  
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9 Europe (Boehnke, 2005). Bulgaria reports a fourth of its population lacking a sense of  
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11 belonging.  
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15 It is possible therefore that the greater religious, and associated communal, life  
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17 of Romanian society may in itself offer protection against depression. However it is  
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19 noteworthy that, in this study of particular rural areas, despite the much greater  
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21 evidence for spiritual practice (prayer) in Romania, church attendance was just as  
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23 high in Bulgaria. It may well be that Bulgarian older people no less than Romanian  
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25 attend church also as part of traditional community social practice.  
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29 At the intrapsychic level, actual degree of spiritual belief may be important to  
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31 mental health in more complex ways. Some previous studies have shown curvilinear  
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33 relationships between strength of spiritual belief and mental health variables including  
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35 depression, with those of strong or no belief doing better than those of weak or  
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37 moderate belief (Miller et al, 2005; Wink & Scott, 2005; Coleman, McKiernan, Mills,  
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39 & Speck, 2007). We did not find any significant patterns in this regard in these data  
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41 sets.  
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45 However research needs to be longitudinal if it is to provide more definitive  
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47 answers on the role of religion in the etiology of depression. Clinical depression is a  
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49 recurring disease and cross-sectional data has limited capacity to assess reverse  
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51 causality. We were able to explore these issues in the follow-up study in Bulgaria  
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53 with interesting results which both confirm the importance of religious/spiritual  
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55 coping and also suggest that strong spiritual belief may be associated with a better  
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57 prognosis of recovery from depression. This accords with previous literature  
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3 demonstrating associations between religiousness and remission from depression  
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5 (Braam, Beekman, Deeg, Smit, & van Tilburg, 1997; Koenig, George, & Peterson,  
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7 1998). More longitudinal study is required with different types of samples in various  
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9 religious cultures to test this hypothesis further. It is also necessary to be aware of the  
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11 possibility that the associations between depression and religious involvement may  
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13 reflect causation in both directions (Braam et al, 2004).  
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17 Although we were able to collect relatively large samples of older people in  
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19 Bulgaria and Romania, even greater numbers are probably necessary to effectively  
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21 study the complex relationships between religiosity and mental health, as well as the  
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23 mediating roles of social support and physical health. In the US consistent protective  
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25 relationships of religiosity on depression have been found but averaging only 0.1  
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27 (Smith et al, 2003).  
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31 The study did confirm the relative ease with which disadvantaged and  
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33 depressed older people can be approached for interview in Eastern European  
34  
35 countries. Door to door knocking produced a good response, and likely uncovered  
36  
37 higher levels of depression than interviewing out of doors. Eastern Europe currently  
38  
39 provides an important testing ground for investigating factors contributing to  
40  
41 depression, and most importantly resilience to depression, in later life. Older Eastern  
42  
43 Europeans report much chronic social stress resulting from an inability to change their  
44  
45 state of economic and political uncertainty. The instabilities and pervasive sense of  
46  
47 lack of control that they have experienced have had psychological impacts upon their  
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49 health. Future research could include assessment of variables such as belief in chance  
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51 or powerful others (including health professionals), pessimism and fatalism (Stephoe  
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53 & Wardle, 2001).  
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Choice of the most appropriate method for assessing depression is also important. We suspected that use of the HAD-D scale might have exaggerated depressive symptomatology in an older population, in particular the item 'I feel as if I am slowed down' to which the overwhelming majority of older Bulgarians (but, interestingly, not the Romanians) gave the maximum negative response. However use of the GDS did not result in a lower estimate. We have to conclude that depressive symptomatology is remarkably high among current older Bulgarians. This may well be related to the greater prevalence of vascular disease noted among Bulgarians which has been shown in US studies to predict future depression (Mast et al, 2008)

Eastern European countries face the difficult challenge of growing old before they become wealthy. Bulgaria is an extreme example of this phenomenon (Rangelova, 2003). Its mental health services in particular remain underdeveloped (Tomov, Mladenova, Lazarova, Sotirov, & Okoliyski, 2004). In developing these services it is important to build in consideration for the cultural and social context. Physicians need training in enhancing patients' own resources in managing their illness. One of the most important social supports for older people's mental health is religion and spirituality. To harness such resources more effectively physicians need to learn to work together with religious ministers as well as others involved in pastoral care (Leavey, & King, 2007).

## References

Boehnke, P. (2005) *Quality of life in Europe. Perceptions of social integration and exclusion in an enlarged Europe*. European Foundation for the Improvement of Living and Working Conditions. Available online (<http://www.eurofound.eu.int>).

- 1  
2  
3 Braam, A.W., Beekman, A.T.F., Deeg, D.J.H., Smit, J.H., & van Tilburg, W. (1997).  
4  
5 Religiosity as a protective or prognostic factor of depression in later life. Results  
6  
7 from a community study in the Netherlands. *Acta Psychiatrica Scandinavia*, *96*, 199-  
8  
9 205.
- 10  
11  
12  
13 Braam, A.W., van den Eeden, P., Prince, M.J., Beekman, A.T.F., Kivela, S.-L.,  
14  
15 Lawlor, B.A., Birkhofer, A., Fuhrer, R., Lobo, A., Magnusson, H., Mann, A.H.,  
16  
17 Meller, I., Roelands, M., Skoog, I., Turrina, C., & Copeland, J.R.M. (2001). Religion  
18  
19 as a cross-cultural determinant of depression in elderly Europeans. Results from the  
20  
21 EURODEP collaboration. *Psychological Medicine*, *31*, 803-814.
- 22  
23  
24  
25  
26 Braam, A.W., Hein, E., Deeg, D.J.H., Twisk, J.W.R., Beekman, A.T.F., & van  
27  
28 Tilburg, W. (2004). Religious involvement and a 6-years course of depressive  
29  
30 symptoms in older Dutch citizens. *Journal of Aging and Health*, *16*, 467-489.
- 31  
32  
33  
34  
35 Braam, A.W., Prince, M.J., Beekman, A.T.F., Delespaul, P., Dewey, M.E., Geerlings,  
36  
37 S.W., Kivela, S.-L., Lawlor, B.A., Magnusson, H., Meller, I., Peres, K., Reischies,  
38  
39 F.M., Roelands, M., Schoevers, R.A., Saz, P., Skoog, I., Turrina, C., Versporten, A.,  
40  
41 & Copeland, J.R.M. (2005). Physical health and depressive symptoms in older  
42  
43 Europeans. Results from EURODEP. *British Journal of Psychiatry*, *187*, 35-42.
- 44  
45  
46  
47  
48 Brandtstaedter, J. (2006). Adaptive resources in later life: Tenacious goal pursuit and  
49  
50 flexible goal adjustment. In M. Csikszentmihalyi, & I.S. Csikszentmihalyi (Eds.) *A*  
51  
52 *life worth living. Contributions to positive psychology*. New York: Oxford University  
53  
54 Press (pp. 143-164).
- 55  
56  
57  
58  
59  
60

1  
2  
3 Brugha, T., Bebbington, P., Tennant, C., & Hurry, J. (1985). The List of Threatening  
4 Experiences: a subset of 12 life event categories with considerable long term  
5  
6 contextual threat. *Psychological Medicine*, 15, 189-194.  
7  
8

9  
10  
11 Coleman, P.G., McKiernan, F., Mills, M., & Speck, P. (2007). In sure and uncertain  
12 faith: belief and coping with loss of spouse in later life. *Ageing and Society*, 27, 869-  
13  
14 890.  
15  
16

17  
18  
19 Coleman, P.G. (2010). Religion and age. In D. Dannefer, & C. Phillipson (Eds.),  
20  
21 *International handbook of social gerontology*. New York: Sage (in press).  
22  
23

24  
25  
26 Dragoeva-Bozhinova, M. (2004). Geriatrics in Eastern Europe – a perspective from  
27  
28 Bulgaria. *British Geriatrics Society Newsletter*. England. Available online  
29  
30 (<http://www.bgsnet.org.uk/Sept04NL.pdf>).  
31  
32

33  
34 Eurobarometer (2005). *Social values, science and technology. Report 225*. Brussels:  
35  
36 European Commission.  
37  
38

39  
40 Fetzer Institute (1999). *Multidimensional measurement of religiousness/spirituality*  
41  
42 *for use in health research. A report of a national working group supported by the*  
43  
44 *Fetzer Institute in collaboration with the National Institute on Aging*. Kalamazoo, MI:  
45  
46 Fetzer Institute.  
47  
48

49  
50  
51 Fiske, A., & Jones, R.S. (2005). Depression. In M.L. Johnson, V.L. Bengston, P.G.  
52  
53 Coleman, & T.B.L. Kirkwood (Eds.) *The Cambridge handbook of age and ageing*.  
54  
55 Cambridge: Cambridge University Press (pp. 245-251).  
56  
57  
58  
59  
60

1  
2  
3  
4 Flint, A.J., & Rifat, S.L. (1995). Validation of the hospital anxiety and depression  
5 scale as a measure of severity of geriatric depression. *International Journal of*  
6  
7  
8 *Geriatric Psychiatry, 11*, 991-999.

9  
10  
11 Gavril, F., Szilagyig, G., & Roudometof, V. (2005). Religion and national identity in  
12 post-communist Romania. *Journal of Southern Europe and the Balkans, 1*, 63-78.

13  
14  
15  
16  
17 Heilig, G.K. (2002). *European Rural Development, 4th Revision*. International  
18  
19  
20  
21  
22  
23  
24  
25  
26  
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56  
57  
58  
59  
60  
Institute for Applied Systems Analysis, Laxenburg, Austria.

23  
24 Kanev, P. (2002). Religion in Bulgaria after 1989: historical and socio-cultural  
25 aspects. *South East Europe Review, 5*, 75–96.

29  
30  
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Kessler, R.C.(2003) Epidemiology of women and depression. *Journal of Affective*  
*Disorders, 74*, 5-13.

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56  
57  
58  
59  
60  
King, M., Speck, P., & Thomas, A. (2001) The Royal Free Interview for Religious  
and Spiritual Beliefs: development and standardization. *Psychological Medicine, 25*,  
1125- 1134.

44  
45  
46  
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48  
49  
50  
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King, M., Jones, L., Barnes, K., Low, K., Walker, C., Wilkinson, S., Mason, C.,  
Sutherland, J., & Tookman, A. (2005). Measuring spiritual belief: development and  
standardization of a Beliefs and Values Scale. *Psychological Medicine, 36*, 1-9.

52  
53  
54  
55  
56  
57  
58  
59  
60  
Kirby, S.E., Coleman, P.G., & Daley, D. (2004) Spirituality and well-being in frail  
and non-frail older adults. *Journal of Gerontology: Psychological Sciences, 59B*,  
P123-P129.

1  
2  
3 Koenig, H.G., George, L.K., & Peterson, B.L. (1998). Religiosity and remission of  
4 depression in medically ill older patients. *American Journal of Psychiatry*, 155, 536-  
5  
6 542.  
7  
8

9  
10  
11 Kraaij, V., Arensman, E., & Spinhoven, P. (2002). Negative life events and depression  
12 in elderly persons: a meta-analysis. *Journal of Gerontology: Psychological Sciences*,  
13  
14 57, P87-P94.  
15  
16

17  
18  
19  
20 Leavey, G., & King, M. (2007). The devil is in the detail: partnership between  
21 psychiatry and faith-based organisations. *British Journal of Psychiatry*, 191, 97-98.  
22  
23

24  
25  
26 Mast, B.T., Miles, T., Penninx, B.W., Yaffe, K., Rosano, C., Satterfield, S.,  
27  
28 Ayonayon, H.N., Harris, T., & Simonsick, E.M. (2008). Vascular disease and future  
29 risk of depressive symptomatology in older adult: Findings from the Healthy Aging,  
30 and Body Composition study. *Biological Psychiatry*, 64, 320-336.  
31  
32

33  
34  
35  
36 Miller, L., & Kelley, B.S. (2005). Relationships of religiosity and spirituality with  
37 mental health and psychopathology. In R.F. Paloutzian, & C.L. Park (Eds.) *Handbook*  
38  
39 *of the psychology of religion and spirituality*. New York: Guilford Press (pp. 460-  
40  
41 478).  
42  
43

44  
45  
46  
47 Murakumi J. (2002). Gender and depression: explaining the different rates of  
48 depression between men and women. *Perspectives in Psychology*, 5, 27-34.  
49  
50

51  
52  
53 Nicholson, A., Pikhart, H., Pajak, A., Malyutina, S., Kubinova, R., Peasey, A., Topor-  
54  
55 Madry, R., Nikitin, Y., Capkova, N., Marmot, M., & Bobak, M. (2008). Socio-  
56  
57 economic status over the life-course and depressive symptoms in men and women in  
58  
59 Eastern Europe. *Journal of Affective Disorders*, 105, 125-136.  
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55  
56  
57  
58  
59  
60

Nicholson, A., Rose, R., & Bobak, M. (2009). Does religious involvement promote individual health independent of social influences? A comparative test. End of Award Report, RES-000-22-2429. Economic and Social Research Council (UK).

Paykel, E.S., Brugha, T., & Fryers, T. (2005) Size and burden of depressive disorders in Europe. *European Neuropsychopharmacology*, 4, 411-423.

Petrov, I.C. (1996a). Feelings and attitudes toward the changes during social and economic transition. A study on autonomous elderly subjects in Sofia. *Romanian Journal of Gerontology and Geriatrics*, 17, 73-82.

Petrov, I.C. (1996b). Feelings and attitudes toward the changes during social and economic transition. Part II. Evolution of the feelings and attitudes. Comparison with personality, health and social variables. *Romanian Journal of Gerontology and Geriatrics*, 18, 76-85.

Pichler, F., & Wallace, C. (2007). Patterns of formal and informal social capital in Europe. *European Sociological Review*, 23, 423-435.

Prince, M.J., Harwood, R.H., Blizard, R.A., Thomas, A., & Mann, A.H. (1997a). Impairment, disability and handicap as risk factors for depression in old age. The Gospel Oak Project V. *Psychological Medicine*, 27, 311-321.

Prince, M.J., Harwood, R.H., Blizard, R.A., Thomas, A., & Mann, A.H. (1997b). Social support deficits, loneliness and life events as risk factor for depression in old age. The Gospel Oak Project VI. *Psychological Medicine*, 27, 323-332.

Sheikh, J.I., & Yesavage, J.A. (1986). Geriatric Depression Scale (GDS). Recent evidence and development of a shorter version. *Clinical Gerontology*, 5, 165-173.



1  
2  
3 Sherbourne, C.D., & Stewart, A.L. (1991). The MOS [Medical Outcomes Study]  
4 Social Support Survey. *Sociological Science and Medicine*, 32, 705-714.  
5  
6

7  
8  
9 Smith, T., McCullough, M.E., & Poll, J. (2003). Religiousness and depression:  
10 evidence for a main effect and the moderating influence of stressful life events.  
11  
12  
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52  
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59  
60

Step toe, A., & Wardle, J. (2001). Health behaviour, risk awareness and emotional  
well-being in students from Eastern Europe and Western Europe. *Social Science and  
Medicine*, 53, 1621-1630.

Tomov, T., Mladenova, M., Lazarova, I., Sotirov, V., & Okoliyski, M. (2004).  
Bulgaria mental health country profile. *International Review of Psychiatry*, 16, 93-  
106.

United Nations. (2010). *World Population Ageing 2009*. New York: United Nations.

Ware, J.J., & Sherbourne, C.D. (1992) The MOS [Medical Outcomes Study] 36-item  
short- form health survey (SF- 36): I. Conceptual framework and item selection.  
*Medical Care*, 30, 473-483.

Wink, P., & Scott, J. (2005) Does religiousness buffer against the fear of death and  
dying in late adulthood? *Journal of Gerontology: Psychological Sciences*, 60B, 207-  
214.

Yuen, E.J., Gerdes, J.L., & Gonzales, J.J. (1996) Patterns of rural mental health care:  
an exploratory study. *General Hospital Psychiatry*, 18, 14-21.

1  
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60

Zigmond, A.S., & Snaith, R.P. (1983) The Hospital Anxiety and Depression Scale.  
*Acta Psychiatrica Scandinavica*, 67, 361-370.

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TABLE 1. Characteristics of the Samples in Romania and Bulgaria

	Romania	Bulgaria
Numbers	160	160
Gender		
Male	91 (56.9%)	62 (38.8%)
Female	69 (43.1%)	98 (61.3%)
Mean Age	71.36 years	72.56 years
Marital Status		
Married	110 (68.8%)	85 (53.1%)
Widowed	39 (24.4%)	65 (40.6%)
Single	3 ( 1.9%)	3 ( 1.9%)
Divorced/Separated	8 ( 5.1%)	7 ( 4.4%)
Financial Status		
‘Comfortable’	23 (14.4%)	12 ( 7.5%)
‘Getting by’	85 (53.1%)	70 (43.8%)
‘Difficult’	52 (32.5%)	78 (48.8%)
Living Alone	21 (13.1%)	39 (24.4%)

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Table 2: Summary of mean depression scores  
(HAD-D scale) amongst females and males

	Romania	Bulgaria
Males	6.32	10.45
Females	8.59	12.97

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Table 3: Mean scores on age, limits to physical function, chronic illness, social support and life events variables for males and females in Romania and Bulgaria

	Romanian		Bulgarian	
	Males	females	Males	Females
Age	70.78	72.12	72.34	72.69
Limits to Physical Function	14.33	17.52	18.61	21.77
Number of Chronic Illnesses	1.29	1.96	1.98	2.47
Social Support	80.93	78.28	80.58	75.04
Number of Recent Events	1.08	0.99	1.29	1.84
% Recent Bereavement	4%	1%	11%	21%

Table 4: Spearman rank bivariate correlation coefficients of depression with age, limits to physical function, chronic illness, social support, and life events variables

	Romanian		Bulgarian	
	Males	females	Males	Females
Age	0.298**	0.228	0.184	0.371**
Limits to Physical Function	0.361**	0.282*	0.435**	0.430**
Number of Chronic Illnesses	0.133	0.129	0.415**	0.261**
Social Support	-0.326**	-0.456**	-0.165	-0.333**
Recent Life Events	-0.024	0.111	0.080	-0.091

\*\*= Statistically significant at the  $p < 0.01$  level

\*= Statistically significant at the  $p < 0.05$  level

Table 5: Mean scores for strength of spiritual belief, prayer and church attendance  
in Romanian and Bulgarian males and females

	Romanian		Bulgarian	
	Males	Females	Males	females
Strength of belief	46.54	49.01	23.26	33.80
Frequency of prayer	5.56	5.83	1.79	2.23
Frequency of church service attendance	2.71	3.19	2.47	3.67

Table 6: Spearman rank bivariate correlation coefficients for strength of spiritual belief with depression in Romanian and Bulgarian males and females

	Romanian		Bulgarian	
	Males	Females	Males	females
Strength of belief	0.047	-0.157	-0.233	0.064
Frequency of prayer	0.135	-0.068	-0.154	0.244*
Frequency of church service attendance	-0.114	0.085	-0.165	-0.004

\*\*= Statistically significant at the  $p < 0.01$  level

\*= Statistically significant at the  $p < 0.05$  level