Research Journal of Medical Sciences 3 (6): 188-193, 2009
ISSN: 1815-9346
© Medwell Journals, 2009

# The Role of Religiosity on Relationship between Chronic Health Problems and Psychological Well-Being among Malay Muslim older persons

Yadollah Abolfathi Momtaz, Tengku Aizan Hamid and Nurizan Yahaya
Institute of Gerontology, Putra Malaysia University, 43400, Serdang, Selangor, Darul Ehsan, Malaysia

**Abstract:** It is recognized that religiosity contributes to psychological well-being of older persons, however, effects of religiosity on psychological well-being older person with chronic health problems is lacking. This study aimed to examine the mediating effect of religiosity on the relationship between chronic health problems and psychological well being among Malay Muslim older persons aged 60 years and over. Data for this study came from the national survey (PSRPWO) that employed a cross-sectional research design conducted from 2007 until 2008 in Peninsular Malaysia. Religiosity, psychological well being and morbidity were measured using intrinsic/extrinsic revised scale, WHO-5 well-being index and a checklist of 16 chronic health problems, respectively. In this study, the reliability test for WHO-5 Well-Being Index revealed 0.84 Cronbach's $\alpha$ and 0.85 for the religiosity scale. Out of 1415 subjects examined in this study 51.0% were female and 49.0% male. The mean score for religiosity found 47.1 (SD = 5.87). The mean of psychological well being was 62.36 (SD = 22.47).The mean number of chronic health problems computed was 1.3 (SD = 1.33). The results of multiple regression analysis and Sobel-test (t = -2.61, $p<0.01$) indicated that relationship between chronic health problems and psychological well being is significantly moderated by religiosity. This study implies that religiosity is an important resource in improving psychological well being of older persons with chronic health problems.

**Key words:** Religiosity, psychological well-being, chronic health problems, Malay Muslim elderly people

## INTRODUCTION

The rapid growth of the aged population in the world has resulted in international interest in the improvement of psychological well-being, as a key component of successful aging (Moen and Fields, 2003) in old age. Psychological well-being is one of the most important and significant aspects of life among older persons (Ingersoll-Dayton *et al.*, 2001) and an indicator of the quality of life of older adults, successful aging and a focus of empirical study by gerontologists for decades (Levin and Chatters, 1998). Results of the studies revealed a clear tendency for individuals with high levels of psychological well-being to engage in positive activities when managing daily stress, to have a positive self-regard and a sense of competence and control (Tuicomepee and Romano, 2005). Older persons with high psychological well being feel more confident in their ability to face challenges and may be better able to identify specific ways to respond to events of life.

In light of these considerations, many studies in gerontology field have examined relationship between psychological well being of older persons and religiosity as a coping strategy. A growing body of study suggests religiosity has a significant influence on the psychological well-being of older adults (Mackenzie *et al.*, 2000). Clarke (2005) found religiosity is positively associated with a decrease in the amount of depressive symptoms and a better quality of life. Similarly, Boey (2003) noted that religious belief and faith are significantly associated with psychological well-being. Similar results were reported in Canada among 181 adult forensic psychiatric patients (Mela *et al.*, 2008).

In the study, religiosity has been defined as a multidimensional concept measuring attitudinal and behavioral indicators of belief (Mela *et al.*, 2008) and as personal beliefs about a higher power (Zinnbauer *et al.*, 1997).

According to Roget's thesaurus (Lewis, 1966), religiosity has been synonymized with terms such as religiousness, faith, belief, loyalty and holiness.

Many recent studies have explored the relationship between psychological well-being and religiosity and indicate that religiosity is associated with better mental health and better adjustment with life's problems. For example, Clark *et al.* (1999) stated that individuals who used religiosity as a coping mechanism with problems and

**Corresponding Author:** Yadollah Abolfathi Momtaz, Institute of Gerontology, Putra Malaysia University, 43400, Serdang, Selangor, Darul Ehsan, Malaysia

difficulties in life rated lower on aggression, hostility and rebelliousness than non-religious coppers. In addition, when a situation is uncontrollable, believer accepts condition rather than focusing on ways to change it.

Similarly, Smith *et al.* (2003) in a meta-analytic study involving 98,975 respondents, found that greater religiousness is associated with less depressive symptoms.

In addition, a few longitudinal studies have found that greater religiousness was associated with less depression in the future (Koenig and Larson, 2001). Furthermore findings of other studies show that religiosity has a favorable effect on survival. For example, Chida *et al.* (2009) using meta-analytic methods examined association between religiosity and mortality. Results of 69 examined studies showed that religiosity was associated with reduced mortality in healthy population studies but not in diseased population studies. Similarly, results of a prospective study demonstrated that women who were more religious had a lower risk of premature mortality during the following four decades than women less, or not at all, religious (Clark *et al.*, 1999).

Since, study review supported association between religiosity and psychological well being and it is also recognized that chronic health conditions negatively affect psychological well being of elderly people (Jelicic *et al.*,1998) and are associated with low mental health (Piazza *et al.*, 2007).

As mentioned above, it is recognized that religiosity contributes to psychological well-being of older persons, however mediating effects of religiosity on psychological well-being older person with chronic health problems is lacking. This study aimed to examine the mediating effect of religiosity on the relationship between chronic health problems and psychological well being among Malay Muslim older persons aged 60 years and over.

## MATERIALS AND METHODS

The data for this study derived from a national survey entitled Patterns of Social Relationship and Psychological Well Being among Older Persons in Peninsular Malaysia (PSRPWO), which conducted from 2007 until 2008 by a cross-sectional research design.

A multi-stage proportional stratified sampling procedure taking into account the total population in each state based on rural-urban dichotomy as well as the sex component was employed to obtain a total of 1781 community-dwelling older persons in Malaysia, ranging in age from 60-110 years, were interviewed in the respondent's home.

This survey used an in-person interviewing technique for data collection which was conducted in the respondent's home. Only one older person from each selected household was interviewed. In the case when there was >1 sequenced sex present in the household, random sampling was employed to select the respondent.

Sample size for current analysis consists of 1415 (n = 722 women and n = 693 men) Malay Muslim older persons aged 60 and over years.

**Measurements:** Psychological well-being was measured using The WHO-5 well-being index. This scale is a self-assessment instrument consisting of five multiple choice questions designed to measure the level of psychological well-being. It was developed for the WHO collaboration centre for mental health and is a useful tool for assessment psychological well being status among elderly subjects (Bonsignore *et al.*, 2001) and has been used in several studies. The maximum possible score is 100 points. A higher score indicates a higher level of psychological well-being (Schenstrom *et al.*, 2006). Each of the 5 items is rated on a 6-point Likert scale from 0-5. The theoretical raw score ranges from 0-25 and is transformed into a scale from 0 (worst thinkable well-being) to 100 (best thinkable well-being).

Religiosity was measured using Intrinsic/Extrinsic-Revised Scale (I/E-R). Responses on I/E-R are on a Likert scale (from 1 = strongly disagree, to 5 = strongly agree). Higher scores indicate higher levels of religiosity (Salsman and Carlson, 2005).

Chronic health problems measured using a checklist including 16 diseases. As results of previous studies indicate acceptable agreements between self-ratings of chronic diseases and physician-registered conditions, except for arthritis (Kempen *et al.*, 1999), we used a self-reported method for gathering of data. Respondents were asked whether they have a specific chronic medical problem including: hypertension, joint pain (arthritis), heart disease, diabetes, visual problem, hypercholesterolemia, hearing problem, gastritis, asthma, kidney disease, skin disorder, tuberculosis, cancer, effects of stroke, liver disease and psychiatric problem.

The Statistical Package for Social Sciences (version 13) was used in data analysis. Ranges, frequency distributions, percentages, means, standard deviations and bivariate correlations were computed to describe preliminary data. We employed multiple regressions analysis and Sobel test to examine mediating effect of religiosity on the relationship between chronic health problems and psychological well being.

According to Baron and Kenny (1986), conditions for mediation and moderation are following: independent variable (Chronic health problems) should be associated

with mediator variable (religiosity) and dependent variable (psychological well being). When mediator variable (religiosity) is included in the regression model, the influence of independent variable (Chronic health problems) on dependent variable (psychological well being) should be attenuated (ratio of betas <1.0) after controlling for demographic factors (sex, marital status and age). Then, we calculated Sobel-test to examine whether a mediator variable (religiosity) significantly carries the influence of an independent variable (Chronic health problems) to a dependent variable (psychological well being). In other word, Sobel-test examine, whether the indirect effect of the independent variable on the dependent variable through the mediator variable is significant (Dudley *et al*., 2004).

Sobel test was calculated by following formula:

$$\text{Sobel-test} = \frac{a \times b}{\sqrt{(a^2 \times Se_b^{\,2}) + (b^2 \times Se_a^{\,2})}}$$

Where,

A = The regression weight (regression coefficient) for the relationship between the independent variable and the mediator

$Se_a$ = The standard error of the relationship between the independent variable and the mediator

B = The regression weight (regression coefficient) for the relationship between the mediator variable and the dependent variable

$Se_b$ = The standard error of the relationship between the mediator variable and the dependent variable

## RESULTS AND DISCUSSION

Out of 1415 subjects examined in this study 51.0% were female and 49.0% male. A 52.9% of respondents reported married and 47.1% were non married including widowed, never married and divorced. The mean scores and reliability for variables of this study are presented in Table 1. In order to assess normal distribution of psychological well being, we used Skewness and kurtosis. Skewness ($-1 \le 0.191 > 1$) and kurtosis ($-1 \le 0.688 > 1$) suggested a reasonably normal distribution for psychological well being.

To examine associations among variables we carried out bivariate correlations. These correlations are shown in Table 2. Results of bivariate correlation indicated that psychological well being was positively associated with religiosity, sex and marital status. Chronic health problems were negatively correlated with psychological well being and religiosity.

In order to examine, the mediating effect of religiosity on the relationship between chronic health problems and psychological well being, we ran a 3 step multiple regression analysis. Table 3 shows results of multiple regression analyses.

Table 1: Descriptive result of variables in the study

| Variables | % | Mean±SD | Cronbach's α | Expected range |
|---|---|---|---|---|
| Psychological well-being | - | 62.3±22.54 | 0.84 | 0-100 |
| Religiosity | - | 47.1±5.870 | 0.85 | 11-55 |
| Chronic health problems | - | 1.3±1.330 | - | - |
| Age | - | 69.8±7.560 | - | - |
| **Marital status** | | | | |
| Married | 52.9 | - | - | - |
| Non-married | 47.1 | - | - | - |
| **Sex** | | | | |
| Male | 49.0 | - | - | - |
| Female | 51.0 | - | - | - |

In the first step, a significant model ($F_{(4,1401)} = 6.86$, $p<0.001$) emerged and revealed that chronic health problems contributed significantly ($p<0.01$) toward religiosity. Second model looked for any direct effects that chronic health problems, sex, marital status and age might have on psychological well being. This step indicated that chronic health problems was significantly ($p<0.001$) associated with psychological well being after controlling for sex, marital status and age.

Result of step 3 indicated when religiosity was included in the regression model, the influence of chronic health problems on psychological well being has been decreased (ratio of betas <1.0) after controlling for sex, marital status and age.

In the next step, we calculated Sobel-test. Result of computation indicated that value of Sobel test is -2.61. So, since Sobel test is >2.58 in absolute value, reject the null hypothesis that the indirect effect is zero at 0.01 level of significance.

The first purpose of this study was to examine associations among religiosity, chronic health problems and psychological well being amongst older Malaysians.

Results of bivariate correlation reflected a strong significant association between psychological well being and religiosity ($r = 0.24$, $p<0.01$). This indicated that older persons with greater religiosity had better psychological well being. The results of this study concur with the previous research on religiosity, in that greater religiosity is associated with better psychological well-being. For example, a study by Francis and Kaldor (2002), in a random sample of 997 Australian adults demonstrated a positive association between psychological well-being and three indices of Christian belief and practice. Similarly results of a study in Algeria as an Islamic country by Tiliouine *et al.* (2009) in a sample of 2909 participants found a strong positive relationship between subjective well being and Islamic religiosity. Likewise, Harris (2000) conducted two meta-analyses to examine the

Table 2: Results of bivariate correlations

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Psychological well being | - | -0.153** | 0.245** | 0.157** | 0.185** | -0.204** |
| Chronic health problems | - | - | -0.101** | -0.049 | -0.103** | 0.093** |
| Religiosity | - | - | - | 0.106** | 0.094** | -0.070** |
| Sex | - | - | - | - | 0.498** | -0.075** |
| Marital status | - | - | - | - | - | -0.268** |
| Age | - | - | - | - | - | - |

**Correlation is significant at the 0.01 level (2-tailed); Sex (Male = 1, Female = 0), Marital status (Married = 1, Non-married = 0)

Table 3: Results of multiple regression analysis

| Models | B | SE | β | t | Sig. |
|---|---|---|---|---|---|
| Constant | 50.20 | 1.56 | - | 32.25 | 0.000 |
| Chronic health problems | -0.32 | 0.12 | -0.07 | -2.72 | 0.007 |
| Sex | 0.75 | 0.36 | 0.06 | 2.08 | 0.038 |
| Marital status | 0.39 | 0.37 | 0.03 | 1.04 | 0.300 |
| Age | -0.05 | 0.02 | -0.06 | -2.19 | 0.029 |
| Constant | 95.89 | 5.75 | - | 16.68 | 0.000 |
| Chronic health problems | -2.24 | 0.43 | -0.13 | -5.16 | 0.000 |
| Sex | 4.50 | 1.33 | 0.10 | 3.39 | 0.001 |
| Marital status | 3.65 | 1.38 | 0.08 | 2.64 | 0.008 |
| Age | -0.50 | 0.08 | -0.17 | -6.30 | 0.000 |
| Constant | 53.06 | 7.36 | - | 7.21 | 0.000 |
| Chronic health problems | -1.91 | 0.42 | -0.11 | -4.53 | 0.000 |
| Sex | 3.81 | 1.29 | 0.08 | 2.95 | 0.003 |
| Marital status | 3.26 | 1.34 | 0.07 | 2.43 | 0.015 |
| Age | -0.48 | 0.08 | -0.16 | -6.19 | 0.000 |
| Religiosity | 0.88 | 0.10 | 0.23 | 9.20 | 0.000 |

Model 1 DV: Religiosity $F_{(4, 1401)}$: 6.86, p<0.001, R: 0.14, $R^2$: 0.02; Model 2 DV: Psychological well being $F_{(4, 1406)}$: 33.17, p<0.01, R: 0.29, $R^2$: 0.09; Model 3 DV: Psychological well being $F_{(5,1399)}$: 45.59, p<0.001, R: 0.37, $R^2$: 0.14

relationship between religiosity and psychological well-being and found a significant association between higher levels of religiosity and better psychological well-being. In particular, older adults with higher levels of religiosity experienced lower levels of depression and older persons with higher levels of religiosity had greater levels of life satisfaction, happiness and mastery.

In addition, it was found an inverse significant association between psychological well being and chronic health problems ( r = -0.15, p<0.01). This finding is in accordance with research by Jelicic *et al*. (1998) who found community dwelling elderly suffering from chronic headache had lower life satisfaction as well as lower affective well-being than headache-free elderly (Jelicic *et al*., 1998). Similarly, results of study to examine associations between chronic medical morbidity and quality of life on 5279 community-dwelling elderly of the Netherlands showed that health-related quality of life is substantially affected by chronic medical morbidity (Kempen *et al*., 1999). Likewise, Joshi *et al*. (2003) according a cross-sectional survey on 200 subjects over 60 years old found that with an increase in the number of morbidities the psychological well being deteriorates and disability increases. Similarly, Karlsen *et al*. (2002) using a self-reported psychological well-being method assessed psychological well-being of 534 Norwegian adults with type 1 and 2 diabetes to explore associations of psychological well-being with disease-related strains, indicated that adults with both types of diabetes reported relatively poor psychological well-being. Similarly, Heidrich (1993) according to a study on 243 elderly women found that poor physical is associated with more depression and anxiety and lower psychological well- being.

The second and main purpose of the current study was to examine the mediating effect of religiosity on the relationship between chronic health problems and psychological well being. Result of Sobel test indicated that religiosity significantly (p<0.01) reduces negative effect of chronic health problems on psychological well being. The finding of the current study parallels with previous studies. For example, Shams and Jackson (1993) explored the role of religiosity as a moderator of the impact of unemployment on psychological well-being and confirmed hypothesis of religiosity as buffering the impact of unemployment on psychological well being. Another study indicated that religious beliefs protect psychological well being during stressful experiences.

The direct positive and moderating effect of religiosity on psychological well being is consistent with finding of Kirby, who found that spirituality was a significant predictor of psychological well being and moderator for the negative effects of frailty on psychological well being. These findings also support the research of Levin and Chatters (1998), who reported that religion had both direct and indirect effects on well-being.

## CONCLUSION

Relationship between chronic health problems and psychological well being is moderated by use of religiosity. Elders, who used religiosity in coping with chronic health problems experience better psychological well being than those at the same level of chronic health problems who do not use of religiosity. Religiosity protects against the negative affective consequences of chronic health problems.

## ACKNOWLEDGEMENTS

This study is a part of survey patterns of social relationships and psychological well being among

older persons in peninsular Malaysia that was funded by ministry of science, technology and innovation.

## REFERENCES

Baron, R.M. and D.A. Kenny, 1986. The moderator-mediator variable distinctionin social psychological research: Conceptual, strategic and statistical considerations. J. Person. Soc. Psychol., 51 (6): 1173-1182. PMID: 3806354.

Boey, K.W., 2003. Religiosity and psychological well-being of older women in Hong Kong. Int. J. Psychiat. Nurs. Res., 8 (2): 921.

Bonsignore, M., K. Barkow, F. Jessen and R. Heun, 2001. Validity of the 5-items WHO Well-Being Index (WHO-5) in an elderly population. European Archives of Psychiatry and Clinical Neuroscience, 251. PMID: 11824831.

Chida, Y., A. Steptoe and L.H. Powell, 2009. Religiosity/spirituality and mortality a systematic quantitative review. Psychoth. Psychos., 78: 81-90. PMID: 19142047.

Clark, K.M., H.S. Friedman and L.R. Martin, 1999. A longitudinal study of religiosity and mortality risk. J. Health Psychol., 4 (3): 381.

Clarke, S., 2005. Religiosity and spirituality in younger and older adults. University of North Texas.

Dudley, W.N., J.G. Benuzillo and M.S. Carrico, 2004. SPSS and SAS Programming for the Testing of Mediation Models. Nurs. Res., 53 (1): 59. PMID: 14726778.

Francis, L.J. and P. Kaldor, 2002. The relationship between psychological well-being and Christian faith and practice in an Australian population sample. J. Scient. Study Religion, pp: 179-184.

Harris, S.J., 2000. Religiosity and psychological well-being among older adults: A meta-analysis. Dissertation Abstracts Int., 63 (6-B): 3008.

Heidrich, S.M., 1993. The relationship between physical health and psychological well-being in elderly women: A development perspective. Res. Nurs. Health, 16 (2): 123-130. PMID: 8502764.

Ingersoll-Dayton, B., C. Saengtienchai, J. Kespichaya-wattana and Y. Aungsuroch, 2001. Psychological well-being Asian style: The perspective of Thai elders. J. Cross-Cultural Gerontol., 16 (3): 283-302. PMID: 14617984.

Jelicic, M., G. Kempen and J. Passchier, 1998. Psychological well-being in older adults suffering from chronic headache. Headache. J. Head Face Pain, 38 (4): 292-294. PMID: 9595869.

Joshi, K., R. Kumar and A. Avasthi, 2003. Morbidity profile and its relationship with disability and psychological distress among elderly people in Northern India. Int. J. Epidemiol., 32 (6): 978-987.

Karlsen, B., E. Bru and B.R. Hanestad, 2002. Self-reported psychological well-being and disease-related strains among adults with diabetes. Psychol. Health, 17 (4): 459-473.

Kempen, G., E.I. Brilman, A.V. Ranchor and J. Ormel, 1999. Morbidity and quality of life and the moderating effects of level of education in the elderly. Soc. Sci. Med., 49 (1): 143-149. PMID: 10414847.

Kempen, G.I.J.M., M.J.G. Van Heuvelen, E. Van Sonderen, Van Den R.H.S. Brink, A.C. Kooijman and J. Ormel, 1999. The relationship of functional limitations to disability and the moderating effects of psychological attributes in community-dwelling older persons. Soc. Sci. Med., 48 (9): 1161-1172. PMID: 10220017.

Koenig, H.G. and D.B. Larson, 2001. Religion and mental health: Evidence for an association. Int. Rev. Psych., 13 (2): 67-78. DOI: 10.1080/09540260124661.

Levin, J.S. and L.M. Chatters, 1998. Religion, health and psychological well-being in older adults: Findings from 3 National surveys. J. Aging Health, 10 (4): 504.

Lewis, N., 1966. The new Roget's thesaurus in dictionary form.

Mackenzie, E.R., D.E. Rajagopal, M. Meibohm and R. Lavizzo-Mourey, 2000. Spiritual support and psychological well-being: Older adults' perceptions of the religion and health connection. Altern. Therap. Health Med., 6 (6): 37. PMID: 11076445.

Mela, M.A., E. Marcoux and G.U. Deqiang, 2008. The effect of religiosity and spirituality on psychological well-being among forensic psychiatric patients in Canada. Mental Health, Religion Cult., 11 (5): 517-532.

Moen, P. and V. Fields, 2003. Midcourse in the United States: Does unpaid community participation replace paid work? Ageing Int., 28 (3): 21-48.

Piazza, J.R., S.T. Charles and D.M. Almeida, 2007. Living with chronic health conditions: age differences in affective well-being. J. Gerontol. Series B: Psychol. Sci. Soc. Sci., 62 (6): P313. PMID: 18079415.

Salsman, J.M. and C.R. Carlson, 2005. Religious orientation, mature faith and psychological distress: Elements of positive and negative associations. J. Scient. Study Religion, 44 (2): 201-209.

Schenstrom, A., S. Ronnberg and O. Bodlund, 2006. Mindfulness-based cognitive attitude training for primary care staff: A pilot study. Complement. Health Pract. Rev., 11 (3): 144. DOI: 0.1177/1533210106297033.

Shams, M. and P.R. Jackson, 1993. Religiosity as a predictor of well-being and moderator of the psychological impact of unemployment. Br. J. Med. Psychol., 66: 341-352. PMID: 8123602.

Smith, T.B., M.E. McCullough and J. Poll, 2003. Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. Psychol. Bull., 129 (4): 614-636. PMID: 12848223.

Tiliouine, H., R.A. Cummins and M. Davern, 2009. Islamic religiosity, subjective well-being and health. Mental Health, Religion Culture, 12 (1): 55-74.

Tuicomepee, A. and J.L. Romano, 2005. Psychological Well-Being of Thai Drug Users: Implications for Prevention. Int. J. Adv. Counsell., 27 (3): 431-444. DOI: 10.1007/s10447-005-8204-x.

Zinnbauer, B.J., K.I. Pargament, B. Cole, M.S. Rye, E.M. Butter and T.G. Belavich *et al*., 1997. Religion and spirituality: Unfuzzying the fuzzy. J. Scient. Stud. Religion, pp: 549-564.