The Relationship between Spirituality and Depression Among the Elderly in Indonesia

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Abstract

Background: Studies have shown that there is an association between spirituality and better physical and mental health. Depression has one of the highest prevalence amongst the mental health illnesses in the elderly, and it can lead to poor physical health. This study aims to determine the relationship between spirituality and depression. **Methods:** Data was obtained from the 4th Indonesian Family Life Survey, that was conducted in 2007; the total study sample included 3,103 elderly Indonesians. Logistic regression was performed to determine the relationship between spirituality and depression. **Results:** This study found that the prevalence of depression was 7.2%, with the largest proportion of those being ≥70 years, female, less educated, unemployed, elderly with multimorbidities, unmarried, and less spiritual. Logistic regression analysis showed a strong relationship between spirituality and depression (odds ratio = 1.869; 95% confidence interval; 1.422 to 2.458) after it was controlled for all variables. **Conclusions:** This study found that spirituality has a significant relationship with rates of depression. The government needs to develop a program that strengthens spirituality to improve mental health in the elderly.

Keywords: depression, elderly, health behaviour, multimorbidity, spirituality

Introduction

Depression is one of the most highly prevalent mental health problems amongst the elderly population and can lead to poor physical health.[1,2,3] It is estimated that approximately 12 to 20% of the elderly, 16.6% of the general population, and 10.6% of those aged 60 years and above suffer from varying degrees of depression.[1,3] Depressive disorders can have an enormous impact on an individual's ability to function at work, in relationships, and in other areas of life.[4] The World Health Organisation projects that by the year 2020 major depression will be one of the world's most debilitating conditions, second only to cardiovascular disease.[5] Several cross-sectional and longitudinal studies have found that depression is associated with a risk of physical disability.[3,6-8] In the elderly population depression mainly affects those with chronic medical illnesses and cognitive impairment. It leads to suffering, family disruptions, disability, increased mortality, and it can worsen the outcome of many medical illnesses.[9]

Several factors have been found to be variables that are related to depression. Cole and Dendukuri found that disability, new diseases, poor health status, a history of previous depression, death, sleep disorders, and females were significant risk factors for depression.[10] Studies have also shown that physical activity can act as a protective factor and reduce the prevalence and incidence of depression.[11] Socioeconomic factors that are measured using income variables has a significant association with depression.[12] Psychosocial adversity including economic impoverishment, disability, isolation, relocation, caregiving, and bereavement can contribute to physiological changes thus further increasing susceptibility to depression, or triggering depression in already vulnerable elderly individuals.[9]

Spirituality is another important variable with surveys showing that a significant proportion of the world's population has strong religious beliefs and practices that are important to their daily life. A Gallup World Poll surveyed populations in 143 countries (n = 140,000) and found that 92% of people in 32 developing countries indicated that religion was an important part of their daily life.[4] Spirituality is a multidimensional concept and involves a bond or relationship with the transcendent i.e. God, the self, others, and the environment. The importance of spirituality in health proposed by Crowther *et al.* revised the previously proposed model of successful ageing by Rowe and Kahn.[13,14] Crowther *et al.* added a fourth component that they believed was missing and would strengthen the model; positive spirituality. It shows a perspective that reflects the importance of looking at the whole person, and promotes spirituality

along with emotional, social, and physical health as an important component in ageing.[15]

Several studies have shown an association between spirituality and better physical and mental health.[16-18] Research that studies the relationship between spirituality and depression in Indonesia is important as the value of religion and spirituality is not separated from Indonesia's community and government. Indonesia is a country that values religion as a strategic matter, and with an increasing ageing population that values spirituality as a part of the ageing process it is important to improve the mental health of the elderly. It is hoped that the findings of this study are considered by the government for policy development in improving the quality of life of the elderly.

Methods

This study used data from The Indonesian Family Life Survey (IFLS). The IFLS is a continuing longitudinal socioeconomic and health survey that has previously been completed in 1993, 1998, 2000, and 2007. Started in 1993, the IFLS is based on a sample of households representing around 83% of the Indonesian population, living in 13 of 26 provinces. Within each of the 13 provinces around 60,000 households were randomly chosen from a nationally representative sample frame used in the 1993 SUSENAS (National Social and Economic Survey), carried out by Bappenas/National Planning and Development Board. The IFLS randomly selected 321 enumeration areas (EAs) from the 13 provinces, the EAs included over-sampling urban EAs and EAs in smaller provinces to facilitate the urban and rural and Javanese and Non-Javanese comparisons. Within a selected EA, households were randomly chosen based on the 1993 SUSENAS listings obtained from regional BPS (Central Bureau of Statistics) office.[19]

The survey collected data from individuals, families, households, and communities in which they live, including the health and education facilities that they used. The IFLS first stage survey (IFLS1) was implemented in 1993 and the IFLS2 interviewed the same respondents four years later. Stage IFLS3 was carried out on the entire sample in 2000 and the IFLS4 was implemented in late 2007 and early 2008 in the same households that participated in 1993. In total 13,535 households and 44,103 individuals were interviewed.[19] This study analysed 3,103 respondents who were aged 60 years and over.

Depression, as the dependent variable, was measured using 10 questions and respondents answered using the Centre for Epidemiologic Studies of Depression scale; 1 rare (<1 day), 2 little (1-2 days), 3 sometimes (3-4 days), and 4 often (5-7 days). Values above 10 were used as the cut of point for determining depression. Spirituality as an independent variable was measured by using questions

that covered aspects of obedience, frequency of prayer, abstinence, participation in religious activities, religious life, and the importance of values in life. Good spirituality was determined with a median score and this score was used as the cut of point for determining spirituality.

Descriptive analysis was used to describe all study variables. Bivariate analysis using chi-square tests were conducted to identify some of the variables associated with depression. Variables found that related to the bivariate analysis with $p < 0.25$ were included in the multivariate analysis. Logistic regression analysis was performed to estimate the odds ratios (ORs) and 95% confidence intervals (CI) of depression and its relation to several factors.

Results

The distribution of depression and all variables are outlined in Table 1. Table 1 provides an overview of the distribution throughout the study variables. Depression was experienced by 7.2% of the elderly population in Indonesia. 63% of the sample was aged between 60 and 69 years, 54% of respondents were women, who were mostly low educated, almost 60% were employed, and 84% had a low income. 70% of them were non-smokers, 92% had mild physical activity, only 44% ate vegetables daily, and only 12% ate fruit daily. Multimorbidity was experienced by 12% of the elderly, more than a third were not married (unmarried or separated), 70% were living with a partner, 65% were spiritual, and 51% of them lived in rural areas.

Table 2 provides an overview of the relationship between depression and all of the variables. The proportion of depression was significantly greater amongst those aged 70 years or older and in women. The distribution of depression based on socioeconomic status showed a difference only on the variable of level of education where depression was greater amongst those who were uneducated or had a low educational level, when compared with those who had a secondary or higher educational level. A greater proportion of depression was also found amongst those who had multimorbidities and those who were unmarried. Additionally, those who identified as less spiritual appeared to have greater rates of depression than those who identified as highly spiritual.

Table 3 presents the results of the multivariate analysis using multiple logistic regression models, there were two models that were used throughout the study, the full model and the model that controlled all variables, the adjusted model. Results using the full model showed a strong relationship with spirituality with the OR = 1.767 (95% CI; 1.331 to 1.345). After eliminating the variables with $p < 0.05$ and confounding tests by controlling all the variables significantly associated with depression (adjusted model), it appears that there is a strong relationship between spirituality and depression (OR = 1.869; 95% CI; 1.422 to 2.458).

Table 1. Descriptive Statistics of all Variables (n = 3103)

Variables	n (%)
Depression	
No	2880 (92.8)
Yes	223 (7.2)
Age	
60-69 y	1976 (63.7)
≥70 y	1127 (36.3)
Sex	
Male	1427 (46.0)
Female	1676 (54.0)
Education	
Middle - High	310 (10.0)
Low	1735 (55.9)
No Education	1058 (34.1)
Employment	
Employment	1338 (43.1)
Unemployment	1765 (56.9)
Income	
Middle - High (≥ 3rd quintile)	484 (15.6)
Low (< 3rd quintile)	2619 (84.4)
Smoking	
Non Smoker	2229 (71.8)
Ex Smoker	195 (6.3)
Current Smoker	679 (21.9)
Physical Activity	
Vigorous	42 (1.4)
Moderate	198 (6.4)
Mild	2863 (92.3)
Consumption of Vegetables	
At least once a day	1388 (44.7)
4-6 times a week	1071 (34.5)
<4 times a week	644 (20.8)
Consumption of Fruit	
At least once a day	380 (12.2)
4-6 times a week	894 (28.8)
<4 times a week	1829 (58.9)
Multimorbidity	
No	2705 (87.2)
Yes	398 (12.8)
Marital Status	
Married	1926 (62.1)
Unmarried/Separated	1177 (37.9)
Living Arrangement	
Living with Spouse	2180 (70.3)
Living with Other	598 (19.3)
Living Alone	325 (10.5)
Spirituality	
Good	2031 (65.5)
Not Good	1071 (34.5)
Residence	
Rural	1592 (51.3)
Urban	1511 (48.7)

Table 2. Relationship of Depression with all Variables

Variables	Depression		*p*
	No (N = 2880)	Yes (N = 223)	
Age			0.036*
60-69 y	1849 (93.6)	127 (6.4)	
≥70 y	1031 (91.5)	96 (8.5)	
Sex			0.000*
Male	1357 (95.1)	70 (4.9)	
Female	1523 (90.9)	153 (9.1)	
Education			0.001*
Middle - High	300 (96.8)	10 (3.2)	
Low	1619 (93.3)	116 (6.7)	
No Education	961 (90.8)	97 (9.2)	
Employment			0.000*
Employment	1271 (95)	67 (5.0)	
Unemployment	1609 (91.2)	156 (8.8)	
Income			0.412
Middle - High (≥3rd quintile)	454 (93.8)	30 (6.2)	
Low (<3rd quintile)	2426 (92.6)	193 (7.4)	
Smoking			0.186
Non Smoker	2058 (92.3)	171 (7.7)	
Ex Smoker	181 (92.8)	14 (7.2)	
Current Smoker	641 (94.4)	38 (5.6)	
Physical Activity			0.266
Vigorous	2651 (92.6)	212 (7.4)	
Moderate	189 (95.5)	9 (4.5)	
Mild	40 (95.2)	2 (4.8)	
Consumption of Vegetables			0.950
At least once a day	1289 (92.9)	99 (7.1)	
4-6 times a week	992 (92.6)	79 (7.4)	
<4 times a week	599 (93.0)	45 (7.0)	
Consumption of Fruit			0.161
At least once a day	349 (91.8)	31 (8.2)	
4-6 times a week	842 (94.2)	52 (5.8)	
<4 times a week	1689 (92.3)	140 (7.7)	
Multimorbidity			0.000*
No	2541 (93.9)	164 (6.1)	
Yes	339 (85.2)	59 (14.8)	
Marital Status			0.000*
Married	1823 (94.7)	103 (5.3)	
Unmarried/Separated	1057 (89.8)	120 (10.2)	
Living Arrangement			0.144
Living with Spouse	556 (93.0)	42 (7.0)	
Living with Other	2031 (93.2)	149 (6.8)	
Living Alone	293 (90.2)	32 (9.8)	
Residence			0.123
Rural	1466 (92.1)	126 (7.9)	
Urban	1414 (93.6)	97 (6.4)	
Spirituality			0.000*
Good	1917 (94.3)	115 (5.7)	
Not Good	963 (89.9)	108 (10.1)	

*significant at level 0.05

Table 3. Multivariate Analysis (Logistic Regression)

Variables	B	SE	Sig.	Exp (B)	95% CI for Exp (B)	
					Lower	Upper
Full Model						
Age						
60-69 y (Ref.)						
≥70 y	0.076	0.151	0.616	1.079	0.802	1.450
Sex						
Male (Ref.)						
Female	0.316	0.212	0.136	1.371	0.905	2.077
Education						
Middle - High (Ref.)			0.174			
Low	0.565	0.347	0.103	1.759	0.892	3.470
No Education	0.680	0.365	0.062	1.975	0.966	4.035
Employment						
Employment (Ref.)						
Unemployment	0.421	0.164	0.010*	1.524	1.104	2.103
Smoking						
Non Smoker			0.562			
Ex Smoker	0.342	0.322	0.289	1.407	0.749	2.646
Current Smoker	0.104	0.223	0.640	1.110	0.717	1.718
Consumption of Fruit						
At least once a day (Ref.)			0.226			
4-6 times a week	-0.372	0.242	0.124	0.689	0.439	1.107
<4 times a week	-0.121	0.214	0.572	0.886	0.583	1.348
Multimorbidity						
No (Ref.)						
Yes	0.992	0.170	0.000*	2.697	1.934	3.761
Marital Status						
Married (Ref.)						
Not Married/Separated	0.545	0.195	0.005*	1.725	1.178	2.525
Living Arrangement						
Living with Spouse (Ref.)			0.191			
Living with Other	-0.386	0.212	0.069	0.680	0.449	1.031
Living Alone	-0.385	0.302	0.203	0.680	0.376	1.231
Residence						
Rural (Ref.)						
Urban	-0.237	0.152	0.118	0.789	0.586	1.062
Spirituality						
Positive (Ref.)						
Not Positive	0.569	0.144	0.000*	1.767	1.331	1.345
Adjusted Model						
Spirituality						
Good (Ref.)						
Not Good	0.626	0.140	0.000	1.869	1.422	2.458

*significant at level 0.05

Discussion

Results revealed that depression rates among the Indonesian elderly is 7.2%, this figure is inline with findings from previous studies that place the prevalence of depression at 10.6% in those aged above 60 years.[1] According to the American Psychiatric Association the estimated prevalence of depression ranges between 2% and 3% in men and between 5% and 12% in women.[20] Depression is more commonly found in those aged over 70 years, the unemployed, and those who are unmarried or separated. Results from this study suggest that rates of depression are lower amongst those who identify as spiritual.

In the multivariate analysis, without controlling for all other variables (full model), spirituality had a strong association with depression rates (OR = 1.767; 95% CI; 1.331 to 1.345). Similarly when using the model that controlled for all variables (adjusted model), there appeared to be a stronger link between spirituality and depression rates (OR = 1.869; 95% CI; 1.422 to 2.458). These results indicate that elderly people who identify as less spiritual are two times more likely to experience depression than those who identify as highly spirituality. These findings are consistent with results published by Smith *et al*. who found there was a negative correlation between religiosity and depressive symptoms, suggesting that greater religiosity is associated with lower depressive symptoms.[20] Similarly, Koenig found that of 444 participants, 272 (61%) reported a negative relationship between spirituality and depression. Furthermore, results from 70 prospective cohort studies showed that 39 cohorts (56%) reported that a greater sense of spirituality resulted in lower levels of depression or faster remission from depression symptoms. Additionally, of 30 clinical studies reviewed, 19 (63%) found that spiritual intervention produced better outcomes than standard care interventions or the control groups.[18]

Multiple researchers have suggested that religion may reduce vulnerability to depressive symptoms through a variety of substantive psychosocial mechanisms. Such findings suggest that religiousness may protect people against depressive symptoms by helping them to avoid the negative psychological sequelae that are frequently associated with stressful life events.[20] A large and growing volume of research suggests that religious or spiritual beliefs and practices may be used to cope with or adapt to stressful life circumstances. Although there are many genetic, developmental, and environmental factors contributing to the onset and maintenance of depression failure to cope with life stress is often a major underlying factor.[4] Smith *et al*. found that social support is often associated with involvement in a local religious congregation and hypothesised that this social aspect may explain how religion can reduce depressive symptoms. When compared with their less religious counterparts, highly religious individuals are more likely to be married and have stable family relationships and are overall more likely to have relationships of high quality. Existing research indicates that religiously committed individuals have relatively hopeful and positive outcome expectancies that might afford them additional strength and comfort in the face of difficulty. Specific religious beliefs may also facilitate better interpretation and management of specific types of negative life events. For example, under conditions of severe physical illness religious beliefs about understanding the meaning of suffering may help normalise experiences of pain and religious beliefs concerning an afterlife may reduce medical patient's fear of death.[20]

The Authors acknowledge that this study has certain strengths and weaknesses. One of the main strengths of this study was the ability to examine the relationship between spirituality and depression on a large scale due to data obtained from the 4th Indonesian Family Life Survey. There are few studies that have examined the relationship between spirituality and depression on such a large scale. A limitation of the study was that the variables were measured based on the response from the participants (self-reported), which can result in bias. Depression was not measured by a clinical diagnosis from experts and multimorbidities were only based amount of diseases experienced, not the intensity or severity of the disease. Measurement using self-reporting may result in a loss of information that may not be known to the participants as it can only be diagnosed by an expert. Additionally, the use of cross-sectional data has limitations in explaining causal relationships.

Conclusions

Result from this study found that spirituality has a significant relationship with rates of depression, a mental health problem that is quite common amongst the elderly population. It is apparent that there is a great need for strategies that enhance the role of spirituality in an attempt to lower the risk of depression in the elderly population. Governments, particularly the Ministry of Religious Affairs, in collaboration with the Ministry of Social Affairs need to develop a program that strengthens the spirituality of the elderly in an effort to improve their mental health.

Conflict of Interest Statement

The author declare that there is no conflicts of interest regarding the publication of this paper.

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