ORIGINAL ARTICLE

DEPRESSION AND LONELINESS/SOCIAL ISOLATION AMONG PATIENTS WITH COGNITIVE IMPAIRMENT IN NURSING HOME

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Abstract

Objective*: The evaluation of mental health among older adults has become increasingly important in health and social science. Although this has been studied in developed countries, there are also issues for emerging countries, which have aging populations. The aims of this study were to determine the prevalence of loneliness/social isolation and late-life depression among older adults with cognitive impairment living in institutional care. *Methods*: A cross sectional survey involving residents of four government nursing homes in West Malaysia was carried out. All residents aged 60 years old and above with cognitive impairment were included in the study. Participants were assessed by the Short Mini Mental State Examination (SMMSE), Friendship Scale (FS) and Geriatric Depression Scale (GDS). *Results*: The prevalence of depression and loneliness/social isolation were 85.5% and 95.5% respectively. Depression was strongly associated with age, education attainment, financial conditions, health, cognitive impairment and loneliness/social isolation. Loneliness/social isolation was strongly associated to depression and relationship satisfaction with children. *Conclusion*: There was high prevalence of depression and loneliness/social isolation among older adults with cognitive impairment living in institutional care. Depression and loneliness/social isolation are interrelated and influence each other and these problems need to be addressed to improve their quality of life. *ASEAN Journal of Psychiatry, Vol. 16 (2): July – December 2015: XX XX.

Keywords: **Cognitive Impairment, Nursing Home, Depression, Social Isolation**

Introduction

Older adults are defined as those age 60 years old and above by the United Nation and most developing countries like Malaysia. It is estimated that the proportion of the world's population over 60 years will double from about 11% in 2000 to 22% in 2050 [1]. As the population of older adults is increasing, understanding factors to optimize their quality of life is paramount important [2]. A recent comprehensive and integrated review of qualitative and quantitative studies suggested that among the important predictors of quality of life in older adults were the presence of loneliness and feeling depressed.

Loneliness which refers to a state of feelings distressed, unhappy, detached and isolated as a result of a gaping emptiness in a person's social and/or emotional life were experienced by people of all age [3]. However, loneliness in older adults, especially in those with cognitive impairment is believed to create more serious problems compared to younger people [4]. A framework of loneliness among older adults suggested that it occurred as a result of the interconnection between various individual‘s cognitive and emotional aspects, social needs and expectations as well as the living condition and cultural norm [5]. Absence of an intimate partner, family members, friends and acquaintances reduced

the structure and the quality of their social network and social integration, resulted to the emergence of loneliness [6-8].

Older adults who experience loneliness had been reported to have a higher tendency for chronic physical diseases as well as psychological disturbances such as late-life depression [9]. Prevalence rate of late-life depression varies according to studies and ranged between 4.5% and 37.4% [10, 11]. Recent review study of late-life depression indicated that the incidence rate of Major Depression in older adults was 0.2–14.1/100 person-years, and incidence of clinically relevant depressive symptoms was 6.8/100 person-years [12]. In relation to people with cognitive impairment, a large UK study reported that depression was present in 20.5% of the dementia group, compared with only 8.6% of those without dementia [13]. Concerning those who lives in nursing homes, studies suggested that the incidence rate for both loneliness and depression were higher compared to those who lived in the community [14-16].

Various factors such as poor activities of daily living [17], poor cognitive abilities [18], chronic physical illness [19] and having a poor social relation [11, 17] had been investigated to have two ways relationship with late-life depression and loneliness. These factors could contribute to the occurrence as well as complicate further the late-life depression which leads to poor quality of life among older adults [2, 20]. Furthermore, little is known about loneliness and late-life depression among people with cognitive impairment in institutional care in Malaysia. Therefore, the aim of this study was to determine the prevalence of loneliness and late-life depression among older adults with cognitive impairment living in institutional care. The findings will provide evidence-based information, which may assist policy makers (government) in decisions concerning management for people with cognitive impairment, reducing caregivers' burden and providing a better life for those suffering cognitive impairment.

Methods

Participants

This was a cross-sectional study involving people with cognitive impairment residing in government nursing homes. Of nine governments' nursing homes in West Malaysia, four were selected based on geographical factors and accessibility. All four nursing homes that agreed to participate in this study were Rumah Sri Kenangan Seremban, Rumah Sri Kenangan Melaka, Rumah Sri Kenangan Ulu Kinta and Rumah Sri Kenangan Kelantan.

All residents aged 60 years old and above were invited to participate in the study. The selection of cases in this study was made based on the information documented in the residents' medical record. Presence of cognitive impairment was defined following the Short Mini Mental State Examination (SMMSE) score performed by the researcher. A cut-off 10 out of 12 points was used as an inclusion criterion [21] and those who scored 11 points and above were excluded from the study. This cut-off was selected since a score of 10 or lower corresponds with the likely presence of cognitive impairment [21]. Those who were unable to communicate in or understand Malay or English were also excluded. To minimize bias in the study, the entire procedure of reviewing medical records, contacting and interviewing the participants was conducted by the main researcher (AN).

Procedure

Prior to the study, ethical approval was sought and granted from the Human Research Ethics Committee of The University of Melbourne, Victoria, Australia, the Malaysia Research Ethics Committee and the National Institute of Health, Malaysia (3 lots of ethics approval). As participants in this study were classified as a vulnerable group in research, such ethics approval was gained conforming to the Helsinki Declaration [22], particularly with regard to informed consent.

In selecting the participants, systemic sampling technique was used. The managers of the nursing homes provided the researcher a list of residents, which started at the top with the patient who had been moved most recently into the nursing home. The researcher then accessed the patient files which contain residents information such as personal details (for example; name, age, identification number, address, contact number), diagnosis and dormitory number. Potential participants (age between 60 years old and above) were introduced by the allied health staff to the researcher and they were directly invited for their participation in the study. The nature and purpose of the study were explained to the participants before getting their verbal consent.

Following verbal consent, participants were invited to a meeting room and provided with a consent form and participant information sheet (PICF). Relative and medical doctors we not involved in this process as is commonly the case in Malaysia for research occurring in nursing homes. Participants were excluded if the clinical impression showed that they were not competent for this study (i.e. unable to follow the consenting process or it was evident that they could not understand verbal language to a degree where they understood the nature of this research study).

Consenting participants were then assessed using the Short Mini Mental State Examination (SMMSE). Responses from the SMMSE were scored at that particular time. Only participants with a SMMSE score of less than 11 [21] were included and proceeded with the interview. The interview covered a set of questionnaires consisting the socio-demographic information, the Geriatric Depression Scale [23] to assess depression and the Friendship Scale (FS) to assess loneliness/social isolation [24].

Questionnaires were translated into Malay using forward and backwards translation with reconciliation by the Malaysian National Institution for Translation. It took an average of 30 minutes to conduct each interview. Participants were offered a break during the procedure.

Measures

Demographic data: age, gender, ethnicity, education attained, marital status, length of stay in nursing home, number of children, relationship satisfaction with children, financial situation. In addition, six questions were asked regarding health condition, medication and length of suffering from cognitive impairment.

Assessment of Cognitive Severity: The Short Mini Mental State Examination (SMMSE) [21] is a brief cognitive screening tool derived from the original Mental State Examination [25]. It consists of 12 items namely, year, month, date, day, country, postal code, spell backwards, recall, repeat sentence, three stage command, write a sentence and copy design. Each of these items was scored binomially which gave a total score of 12. Giving a sensitivity of 98% and specificity of 91%, a cut off score of 10 was used to differentiate those with cognitive impairment [21]. Classification of cognitive impairment was defined based on the SMMSE score as; 1) mild to moderate cognitive impairment (a score between 5 to10) and 2) moderate to severe cognitive impairment (a score ranging from 0 to 4).

Assessment of Depression: The Geriatric Depression Scale (GDS) [26] is a self-rating scale developed to screen depression in elderly population [27]. The original version of GDS consists of 30 items (GDS-30), while a short version of the GDS contains 15 items (GDS-15). These items seek information representing lowered affect, decreased activity levels, irritability, withdrawal, distressing thoughts, and negative judgments about the past, present and future [26]. It is presented in a yes/no response format with one point is assigned to each answer. Items were summed and higher scores indicatehigher depressionlevel.

Assessment of Loneliness/social isolation: The Friendship Scale (FS) [24] is an instrument which assesses aspects of both perceived social isolation and loneliness. It consists of 6-items with three of the items covering the feelings of loneliness and the other three items probing the importance of actual social contacts. Responses are categorized into 5 levels of perceived social

isolation (Almost always/Most of the time/About half the time/Occasionally/Not at all). A total score is derived from the summation of item responses (items 1, 3 and 6 are reversed prior to scoring). A score of '0' indicates complete social isolation and a score of '24' indicates high social connectedness [24].

Statistical methods

Data were analyzed using the Statistical Package for the Social Sciences Version 16 [28]. Descriptive statistics and categorical variables are presented as counts, proportions or percentages. Categorical data was analyzed using $\chi 2$ (Chi-square); where distributional assumptions were violated, the Fisher Exact test was used. Analysis of variance (ANOVA) was used to examine differences between groups.

Results

Demographic

A total of 149 older adults' age between 60 to 89 years old from 4 nursing homes were approached. In all, 129 gave their verbal consent but only 127 were screened for evidence of cognitive impairment. The remaining 2 were not screened due to the presence of psychotic symptoms and being bed ridden. Of 217, 110 met the inclusion criteria for the study and completed the questionnaires. Following the recommendation for calculating response rate by Lynn and colleagues, the response rate for the study was 74% [29]. There was no significant difference between consenting and non-consenting participants with regards to gender and age.

Table 1. Demographics data of people with cognitive impairment in nursing homes

Variables		N (%)
Age	Mean = 71.6 (SD= 7.8)	
Gender	Male	55 (50)
	Female	55 (50)
Ethnicity	Malay	76 (69.1)
	Chinese	15 (13.6)
	Indian	19 (17.)
Education	Non-formal	36 (32.7)
	Primary school	62 (56.4)
	Higher	12 (10.9)
Marital status	Single/separated	64 (58.2)
	Partnered	7 (6.4)
	Widowed	39 (35.5)
Family support	No partner/child	62 (56.4)
	Either partner or child	48 (43.6)
Relationship	Satisfied	4 (8.7)
	Dissatisfied	42 (91.3)
Financial status	Average	12 (10.9)
	Below average	98 (89.1)
Months of stay in nursing home	Mean = 56.5 (SD= 54.8)	
Health condition	Not healthy	48 (47.5)
	Healthy	62 (52.5)

Health functions and other measures

Table 1 summarized the socio-demographic of participants in the study. The mean age for study participants was 71.6 years (SD=7.8). Seventy six of the participants (69.1%) were Malays and 64 were single/separated (58.2%). Participants who were widowed were significantly older in age (mean=74.4, SD=7.7) compared to those who were partnered (mean=66.6, SD=7.4) or singles (mean=70.4, SD=7.4) (ANOVA, F (2,110) =

5.2, p<0.01). Seventy four (67.3%) of participants had formal education with 56.4% of having at least a primary school education. Participants with a formal education were significantly younger with a mean of 69.8 years (SD=6.9) (primary school) and a mean of 69 years (SD=8.7) (secondary school) compared to those who received informal education (mean=75.5 years, SD=7.7) (F (2,110) = 7.6, p<0.01). The majority (89.1%) of participants reported to have below average income. The average length of stay in the nursing homes was 56.5 months (SD=54.8). On a self-rated health condition question, 48 (47.5%) of participants reported feeling unhealthy, and they were significantly older in age (F (1,110) = 6.7, p=0.01) compared to those who reported feeling healthy.

Table 2. Health function and other measures of people with cognitive impairment in nursing homes

Variables		N (%)
GDS^	Median =14 (IQR* = 12-15)	
Depression category	Major depression	94 (85.5)
	Mild depression	11 (10)
	Non-case	5 (4.5)
SMMSE^^	Mean = 5.11(SD** = 2.4)	
Cognitive impairment category	Moderate to severe cognitive impairment	48 (43.6)
	Mild to moderate cognitive impairment	62 (56.4)
FS[#]	Mean = 8.47 (SD** = 3.4)	
Social isolation category	Very isolated	89 (80.9)
	Isolated	16 (14.5)
	Some isolation/connectedness	5 (4.5)

GDS^ = Geriatric Depression Scale; SMMSE^^ = Short Mini Mental State Examination;
FS[#] = Friendship Scale; IQR* = inter-quartile range; SD** = standard deviation

Table 2 reported the health functions, depression and loneliness measures of participants in the study. The mean score on the SMMSE was 5.1 (SD=2.4), indicating mild to moderate cognitive impairment. The median score for depression as assessed by the GDS was 14 (IQR=2-15), which represents major depression. The majority (85.5%) of people with cognitive impairment in this study suffered from major depression with only 4.5% were not depressed. As for loneliness/social isolation, the mean score on the FS was 8.5 (SD=3.4) indicating that people with cognitive impairment in this study were very isolated.

Factors related to depression and loneliness

Table 3 shows the correlations of depression and loneliness with other variables in the study. The GDS showed strong associations with age, education attainment, financial conditions, health, cognitive impairment and loneliness/social isolation. Moderate associations were observed between depression and marital status and relationship satisfaction with children. As for the FS, strong associations were observed with two variables; depression and relationship satisfaction with children. Age, financial conditions and cognitive impairment were moderately associated with loneliness/social isolation. No associations were observed for gender, ethnicity, medication intake and co-morbidities for both scales.

Table 3. Matrix correlation between depression and loneliness and other variables

Variables	GDS^	FS#
Age	.42**	-.19*
Marital	.23*	.09
Gender	.04	.10
Ethnicity	-.04	-.06
Education	-.27**	-.03
Relationship	.39*	-.47**
Financial	.31**	-.29*
Health	-.46**	.17
Medication	.12	.03
Co-morbid	.12	-.04
SMMSE^^	-.60**	.26*
GDS^	-	-.48**
FS#	-.48**	-

Spearman correlation. *≤0.05; **≤0.01;
GDS^ = Geriatric Depression Scale; FS# = Friendship Scale;
SMMSE^^ = Short Mini-Mental State Examination

Discussion

The aim of this study was to investigate depression and loneliness/social isolation among older adults with cognitive impairment living in nursing homes in Malaysia. The major finding from this study was more than 80% of participants reported of having major depression and feeling very socially isolated. This is considerably high in comparison to other studies done locally or internationally.
Regarding depression, for example, a prevalence of 64% of depressive symptoms was reported in a study conducted by Khairuddin and colleagues among older adults residing in the central part of Malaysia [30]. In an earlier study conducted by Al-Jawad and his team only 13.2% of the older adults in Malaysia's nursing home scored under major depression range. Other countries like Hong Kong and Taiwan indicated a prevalence of 65% and 43% respectively was reported among older adults living in nursing homes [31], with a much lower prevalence (27%) was reported in a study involving people with cognitive impairment residing in aged care facilities in Australia [32].

The most possible explanation for the large discrepancies is because most of the previous studies excluded participants with cognitive impairment. It is important to note that all the participants for this study were having cognitive impairment, with 56% of the participants scored under mild to moderate range of cognitive impairment and 44% were scored under moderate to a severe range. Studies showed that people with cognitive impairment had higher risk for depression due to the decline of cognitive functions, particularly in relation to memory. Without the ability to remember, performing normal daily activities and engaging in favourite pastimes like gardening, knitting and reading would be difficult and thus could lead to boredom and frustration and subsequently depression [33]. Furthermore, one study suggested that depression often coexisted with dementia [32] which may have resulted to a higher prevalence of depression cases for this study, as nearly 50% of the participants were having dementia.

Another major finding from this study was a large number of participants had reported to feel very socially isolated (81%). This is consistent with the findings reported by Kim et al. [34], which indicated that about 94% of Korean older adults living in institutionalized care experienced a moderate to high level of loneliness. As the current research focused on older adult with cognitive impairment and residing in nursing homes, it is not surprising to obtain such a result. Loneliness was significantly related with cognitive impairments [35], and it is evident in this

study as it found a moderate association between cognitive impairment and social isolation (loneliness).
Additionally, it can be argued that changes from the familiar environment of the home and the neighbourhood to an institutional setting can be the contributing factors that cause loneliness. As stated by Antonelli and colleagues, living in nursing homes means to reduce contact with significant others, to leave known environments and cherished objects, and to reduce social roles [36]. Furthermore, it is well known that older adults have greater difficult throughout in adapting to a new environment [37].

This study also found a strong association between the FS score and relationship dissatisfaction with children. About 91% of participants reported dissatisfaction in their relationship with children. Consistent with the study by Drageset [38], he also found a significant relationship between frequency of contact with children and level of loneliness. The more contact that they have with their children the less level of loneliness experienced. Perhaps, this is another factor that contributes to the high score of loneliness scale. Additionally, having family members (either partner or children) is a protective factor against depression [39], which most of the participants from nursing home in this study do not have.

Concerning financial status, the finding from this study is consistent with those reported by other studies [31,39, 40]. In a case control study conducted by Rashid and colleagues on older adults living in rural north Malaysia, it was reported that those who earned less than or equal to RM600 (AUD 200) per month were two times more likely to have depression compared to those who earn more than RM600 (AUD 200) per month [40]. Similarly, perceived income adequacy, along with few other variables have been identified as significant predictors of depressive symptoms among nursing home residents in Taiwan as well as among older adults in Malaysia [31, 39].

Based on our findings, it is suggested that depression and loneliness is interrelated and influence each other. It also indicates that there are a positive correlation between depression and loneliness. Prieto-Flores and his colleagues [41] also found a strong association between depression and loneliness. Drageset and his team [42] also suggested that depression had a significant contribution to loneliness although the participants were not impaired cognitively. This study is also in accordance with a study conducted by Kim and his colleagues [34] which reported that depression was found to be influenced by loneliness in Korean and Japanese older adults and loneliness might help to further develop depression [43].

There were a number of limitations in this study, which must be acknowledged. We had investigated the level of family support with regards to the presence of participants' partner or child, but had not captured the actual level of support perceived by the participants. The level of perceived support is one of the essential element associates with depression and loneliness among older adults. Concerning design, the study was carried out in a naturalistic setting, and therefore, the findings were subject to the associated limitations. It is also acknowledged that this study was cross-sectional in nature, and the results pointed to possible relationships between variables but could not imply causation. Furthermore, the findings from this study could not be generalized to people with cognitive impairment in Malaysia as the sample was not a nationally representative sample. Apart from that, as Malaysia is a multiracial and multilingual country, language barrier during the interview was also a challenge.

In conclusion, our study demonstrated that depression and loneliness is a common and important problem among elderly with cognitive impairment in nursing homes. Therefore more attempts should be made to enhance social interaction and to foster a sense of belonging that would help to reduce the risk of loneliness and depression. In addition, efforts should be made to strengthen social engagement in nursing homes and provide better management of mood disorders. This could possibly be achieved by establishing linkages with other government institutions such as the Ministry of Higher Education, the Ministry of Health and the Ministry of Youth and Sports by introducing programs such as

student placement/internship, school visits, community health service and sports days with the community.

Acknowledgement

The work presented here was funded by the Research Management Institute, University Teknologi MARA (Grants 600-RMI/ST/DANA 5/3/Dst (80/2011)) and supported by The University of Melbourne, Australia. The sponsor of the study was the Ministry of Higher Education of Malaysia. The research team gratefully acknowledges the help and support of the residents, family and staff at the four nursing care facilities. Also, the authors thank Assoc. Prof Graeme Hawthorne and Prof Syed Hassan for assistance in developing the framework of the study.

References

1. WHO. Ageing and Life Course. 2014 .Available from: http://www.who.int/ageing/en/. Date of access: 12 August 2014.

2. Chan, S.W., Chiu, H. F., Chien, W. T., Goggins, W., Thompson, D., Hong, B. Predictors of change in health-related quality of life among older people with depression: a longitudinal study. Int Psychogeriatr, 2009. 21(6): 1171-9.

3. Chen, Y., A. Hicks, A.E. While, Loneliness and social support of older people in China: a systematic literature review. Health & Social Care in the Community, 2014. 22(2): 113-123.

4. Aylaz, R., Akturk, U., Erci, B., Ozturk, H., Aslan, H. Relationship between depression and loneliness in elderly and examination of influential factors. Archives of Gerontology and Geriatrics, 2012. 55(3): 548-554.

5. de Jong Gierveld, J., C. Tesch-Römer. Loneliness in old age in Eastern and Western European societies: theoretical perspectives. European Journal of Ageing, 2012. 9(4): p. 285-295.

6. Beal, C., Loneliness in older women: a review of the literature. Issues in Mental Health Nursing, 2006. 27(7): 795.

7. Glaser, K., Tomassini, C., Racioppi, F., Stuchbury, R. Marital disruptions and loss of support in later life: a longitudinal study of the United Kingdom European Journal of Ageing, 2006. 3(4): 207-216.

8. Thomopoulou, I., D. Thomopoulou, D. Koutsouki. The differences at quality of life and loneliness between elderly people. Biology of Exercise, 2010. 6(2): 13-28.

9. Jaremka, L.M., Andridge, R. R., Fagundes, C. P., Alfano, C. M., Povoski, S. P., Lipari, A. M. et al. Pain, depression, and fatigue: loneliness as a longitudinal risk factor. Health Psychol, 2014. 33(9): 948-57.

10. Forlani, C., Morri, M., Ferrari, B., Dalmonte, E., Menchetti, M., De Ronchi, D., Atti, A. R. Prevalence and Gender Differences in Late-Life Depression: A Population-Based Study. The American Journal of Geriatric Psychiatry, 2014. 22(4): 370-380.

11. Schwarzbach, M., Luppa, M., Forstmeier, S., Konig, H. H., Riedel-Heller, S. G. Social relations and depression in late life—A systematic review. International Journal of Geriatric Psychiatry, 2014. 29(1): 1-21.

12. Büchtemann, D., Luppa, M., Bramesfeld, A., & Riedel-Heller, S. Incidence of late-life depression: A systematic review. Journal of Affective Disorders, 2012. 142(1–3): p. 172-179.

13. Winblad, B., Palmer, K., Kivipelto, M., Jelic, V., Fratiglioni, L., Wahlund, L. O. et, al. Mild cognitive impairment

– beyond controversies, towards a consensus: report of the International Working Group on Mild Cognitive Impairment. Journal of Internal Medicine, 2004. 256(3): 240-246.

14. Casey, D.A., Depression in the elderly: A review and update. Asia-Pacific Psychiatry, 2012. 4(3): 160-167.
15. Jongenelis, K., Pot, A. M., Eisses, A. M. H., Beekman, A. T. F., Kluiter, H., Ribbe, M. W. Prevalence and risk indicators of depression in elderly nursing home patients: The AGED study. Journal of Affective Disorders, 2004. 83(2-3): 135-142.
16. Nikmat, A., The comparison of quality of life among people with mild dementia in nursing home and home care – a preliminary report. Dementia: The International Journal of Social Research and Practice, 2015. 14(1): 114-125.
17. Luppa, M., Sikorski, C., Luck, T., Ehreke, L., Konnopka, A., Wiese, B. et. al. Age- and gender-specific prevalence of depression in latest-life--systematic review and meta-analysis. J Affect Disord, 2012. 136(3): 212-21.
18. Richard, E., Reitz, C., Honig, L. H., Schupf, N., Tang, M. X., Manly, J. J. et al. Late-life depression, mild cognitive impairment, and dementia. JAMA Neurol, 2013. 70(3): 374-82.
19. Gleason, O.C., Pierce, A. M., Walker, A. E., & Warnock, J. K. The two-way relationship between medical illness and late-life depression. Psychiatr Clin North Am, 2013. 36(4): 533-44.
20. Sullivan, L.J., M.E. Asselin. Revisiting Quality of Life for Elders in Long-Term Care: An Integrative Review. Nursing Forum, 2013. 48(3): 191-204.
21. Braekhus, A., K. Laake, K. Engedal. The Mini-Mental State Examination: identifying the most efficient variables for detecting cognitive impairment in the elderly. Journal of the American Geriatrics Society, 1992. 40(11): 1139-45.
22. World Medical Association. Helsinki Declaration. 2004.Available from: http://www.wma.net/en/30publications/10policies/b3/ Date of access 21 July 2013.
23. Sheikh, J.I., J.A. Yesavage, Geriatric Depression Scale: recent evidence and development of a shorter version. Clinical Gerontologist, 1986. 5(1/2): 165-173.
24. Hawthorne, G., Measuring social isolation in older adults: development and initial validation of the Friendship Scale. Social Indicators Research, 2006. 77(3): 521-548.
25. Folstein, M., S. Folstein, P. McHugh. 'Mini-Mental State': a practical method for grading the cognitive state of patients for the clinician. Journal of Psychiatric Research, 1975. 12: 189-198.
26. Yesavage, J.A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., Leirer, V. O. Development and validation of a geriatric depression screening scale: a preliminary report. Journal of Psychiatric Research, 1983. 17(1): 37-49.
27. Pedraza, O., Dotson, V. M., Willis, F. B., Graff-Radford, N. R., Lucas, J. A. Internal consistency and test-tetest stability of the Geriatric Depression Scale-Short Form in African American older adults. Journal of Psychopathology and Behavioral Assessment, 2009. 31: 412-416.
28. SPSS Inc. Released 2008. SPSS Statistics for Windows, Version 16.0. Chicago: SPSS Inc.
29. Lynn, P., Beerten, R., Laiho, J., Martin, J. Recommended Standard Final Outcome Categories and Standard Definitions of Response Rate for Social Surveys, in Working Papers. 2001, Institute for Social and Economic Research, University of Essex: Colchester. p. 39.
30. Khairudin, R., Nasir, R., Zainah, A. Z., Fatimah, Y., Fatimah, O. Depression,

Anxiety and Locus of Control among Elderly with Dementia. Pertanika Journal of Social Sciences & Humanities, 2011. 19: 27-31.

31. Tsai, Y.-F., Chung, J. W. Y., Wong, T. K. S., Chiu-Mieh, H. Comparison of the prevalence and risk factors for depressive symptoms among elderly nursing home residents in Taiwan and Hong Kong. International Journal of Geriatric Psychiatry, 2005. 20(4): 315-321.

32. McCabe, M.P., Davison, T., Mellor, D., George, K., Moore, K., & Ski, C. Depression among older people with cognitive impairment: prevalence and detection. International Journal of Geriatric Psychiatry, 2006. 21(7): 633-644.

33. Choi, N.G., S. Ransom, R.J. Wyllie. Depression in older nursing home residents: The influence of nursing home environmental stressors, coping, and acceptance of group and individual therapy. Aging & Mental Health, 2008. 12(5): 536-547.

34. Kim, O., Byeon, Y.-S., Kim, J.-H., Endo, E., Akahoshi, M., Ogasawara, H. Loneliness, Depression and Health Status of the Institutionalized Elderly in Korea and Japan. Asian Nursing Research, 2009. 3(2): 63-70.

35. Hicks, T.J., Jr. What is your life like now? Loneliness and elderly individuals residing in nursing homes. J Gerontol Nurs, 2000. 26(8): 15-9.

36. Antonelli, E., V. Rubini, C. Fassone. The self-concept in institutionalized and non-institutionalized elderly people. Journal of Environmental Psychology, 2000. 20(2): 151-164.

37. Townsend, P. The Family Life of Old People. London; Penguin Books; 1963: 188-205.

38. Drageset, J. The importance of activities of daily living and social contact for loneliness: a survey among residents in nursing homes. Scandinavian Journal of Caring Sciences, 2004. 18(1): p. 65-71.

39. Imran A, Azidah AK, Asrenee AR, Rosediani M. Prevalence of depression and its associated factors among elderly patients in outpatient clinic of Universiti Sains Malaysia Hospital. Med J Malaysia. 2009;64(2):134-9.

40. Rashid, A., E.K. Ong, E.S. Yi Wong. The Attitude Towards Ageing Among Residents Of An Elderly Care Institution In Penang Malaysia. International Journal of Collaborative Research on Internal Medicine & Public Health (IJCRIMPH), 2012. 4(6): p. 1069-1083.

41. Prieto-Flores, M.E., Forjaz, M. J., Fernandez-Mayoralas, G., Rojo-Perez, F., Martinez-Martin, P. Factors associated with loneliness of noninstitutionalized and institutionalized older adults. Journal of Aging and Health, 2011. 23(1): p. 177-94.

42. Drageset, J., B. Espehaug, M. Kirkevold. The impact of depression and sense of coherence on emotional and social loneliness among nursing home residents without cognitive impairment – a questionnaire survey. Journal of Clinical Nursing, 2012. 21(7-8): p. 965-974.

43. Tiong, W.W., Yap, P., Huat Koh, G. C., Phoon Fong, N., Luo, N. Prevalence and risk factors of depression in the elderly nursing home residents in Singapore. Aging Ment Health, 2013. 17(6): p. 724-31.

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Received: 1 July 2015 Accepted: 13 September 2015