# Factors Affecting Stress in Elderly Staying in Public Nursing Home in Yogyakarta, Indonesia

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*Abstract*— **The population of the elderly has been growing at a faster rate than the total population in almost all world regions. The elderly people are vulnerable to the impact of stress. Previous studies reported that the elderly who had lived in nursing homes may be stimulated stress more often than other groups. The purpose of this study is to examine the factor affecting stress in elderly who staying in public nursing homes in Yogyakarta, Indonesia. A total of 178 elderly people were recruited from three public nursing homes. Statistical analyses were conducted by employing descriptive and logistic regression. The finding also showed that the model of the logistic regression accounted 33.4% of the variance in stress in elderly staying in public nursing home. The result showed that the strongest contribution to stress in elderly was activity of daily living, followed by social support, perceived health status, and education.**

*Keywords*— *Elderly, Stress, Nursing home*

## I. INTRODUCTION

The population of the elderly has been growing at a faster rate than the total population in almost all world regions [1]. The World Health Organization [2] mentioned that between 2000 and 2050, the proportion of the world's elderly population will increase from 605 million to 2 billion (11%-22%). Moreover, an increasingly number of elderly populations is in developing countries [3]. According to the Ministry of Health of Indonesia [4], they reported that the results of the Population Census of 2010 showed that Indonesia was included among the top five countries with the highest number of elderly in the world, reaching 18.1 million in 2010 or 9.6 % of the total population and will increase two times (36 million) in 2025. Yogyakarta is one of the provinces in Indonesia that have the highest percentage of elderly population (13.04%) [5].

Achieving a longer life expectancy has been a big challenge due to the effects of the aging process that may lead to physical [6] and psychological problems [7]. One of the major problems in psychology was related to the mental health problem. This problem could had causes that affected long-term disability and dependency [8].

The elderly were vulnerable to the impacts of stress in that they weakness and physical illness [9]. The elderly in Indonesia had suffered the effect of chronic illness which was around 74 % [10]. Moreover, a high rate of chronic illness was a major cause of disability in the elderly [11]. Moreover, disability can cause stress in the elderly [12].

Stress was a transactional process that arose from real or perceived internal or external environment demands that were appraised as threatening or benign [13]. Stress was a major impact for mental health problems [14]. The elderly who had suffered stress had decreased immunity [15]. Meanwhile, stress had been associated with an increased risk of overall and disease-specific mortality risk [16]. Stressors could have been responsible for increasing the risk of developing depression in the elderly population [17] and the main cause of suicide [18].

Previous studies reported that the elderly who had lived in nursing homes also stimulated the coming out of stress such as; the elderly perceived nursing homes as dumping place where one remained idle until death [19]. Furthermore, the elderly that were in nursing homes typically experienced stress and uncertainty about the future [20] The elderly that were cared by people who were not family members it was a significant life crisis [18]. Moreover, the elderly who stayed in nursing homes emphasized that moving into nursing homes had made them feel safer but the elderly felt that they had a lack of social contact with family, friends, and nurses [20, 21]. The consequences were that the elderly felt useless, loneliness [21]. In hence, stress in institutional settings was higher than those in private households and the study found that 48% of the elderly suffered from stress [1].

Many studies had examined demographic factors, social support, and activities of daily living effects of stress in the elderly, the results were inconsistent. Moreover, studies on the factors of religious activity, perceived health status, and coping effects to stress found there were only few studies that specifically investigated in the elderly that stayed in public nursing homes in Yogyakarta, Indonesia. In summary, to promote the mental well-being of the elderly, it was important to reduce the stressful conditions. In fulfilling this purpose, we

needed to know what the factors were that affected stress was and how the elderly coped with stress.

## II. MATERIAL AND METHODS

This research study was undertaken by deploying a cross-sectional design. Hypothesis of this study is age, gender, activity of daily living, social support, perceived health status, religiosity, and coping affecting stress in elderly.

Sample size for this study was determined by G-power. Purposive sampling was carried out to select 178 respondents from 3 public nursing homes in Yogyakarta, Indonesia. The inclusion criteria of the respondents are elderly were 60 years old and above, staying in public nursing home, have co morbidities, MMSE score $\geq$ 23, and willingly volunteer to participate in this study.

Data collection was performed by deploying instrument of six questionnaires.

1. Demographic Information Form
    Demographic Information Form was used to assess personal data that includes, age, gender, marital status, co morbidities.
2. Social support
    Social support was measured by the Provision Social Support (PSS) questionnaire by Cutrona, C.E. and Rusell, D [22]. This questionnaire consisted of 24 items which includes attachments, social integration, reassurance of worth, guidance, and opportunity for nurturance. The response data from this questionnaire was assessed based on the Likert scale using the score's range of 1 to 4. The score was indicated by strongly disagree = 1, 2=disagree, 3=agree, 4=strongly agree. The Cronbach's alpha was 0.92.
3. Perceived Health Status
    A questionnaire assessing health status of the elderly was measured using a single question with a 5-point Likert scale.
4. Ways of Coping
    Coping of the elderly was measured by Lazarus and Folkman [23] by the Ways of Coping Questionnaire. It is comprise of 66 questions with 8 subscales (confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal). The Cronbach's alpha was 0.79.
5. Thai ADL Scale
    Thai Activity of Daily Living scale (Thai ADL Scale) that developed by Vorapun Senanarong [24]. This questionnaire consists of 13 items. The Cronbach's alpha was 0.92.
6. Perceived Stress Scale
    Perceived Stress Scale (PSS) that developed by Sheldon Cohen [25]. PSS derived from the Lazarus and Folkman theory [26, 27, 28]. The Cronbach's alpha was 0.86.
7. Duke University Religion
    Duke University Religion (DUREL) developed by Koenig and Bussing [29]. The instrument had five items which included religious activity (set of 1 question), non-organizational religious activity (set of 1 question), and intrinsic religiosity or subjective religiosity (set of 3 questions). The Cronbach's alpha was 0.80.

Approval to conduct the study was granted by Ethic Review Board Committee for Research Involving Human Research Subject, Boromarajonani College of Nursing Nopparat Vajira.

## III. DATA COLLECTION

After approval and permission letter were granted by Ethics Review Board Committee for Research Involving Human Research Subject, Boromarajonani College of Nursing Nopparat Vajira, the activity of public nursing home was followed to meet the respondents. Researcher provided explanation of the study to potential participants based on information sheet. One-on-one interview using the structure questionnaire technique was used to complete the questionnaire. The questionnaire were checked and saved in sealed envelope, after finish the interview. Data were collected on July-September 2014.

## IV. DATA ANALYSIS

Data analysis was performed by using a computer software program. Descriptive statistics were used to characterize the sample and to examine the distribution properties of the variable. Logistic regression was used to examine the determinant factor affecting stress in elderly.

## V. RESULTS

The result from 178 respondents revealed that 65.73% were female. Regarding the level education, the study found that 40.44 % of the respondent not educated. Regarding marital status, 72.47% of respondents were widowed. Perceive health status of the elderly showed that 51.69% rated their health status as good health.

TABLE 1. SOCIO-DEMOGRAPHIC DATA THE ELDERLY IN PUBLIC NURSING HOME (N=178)

| Variables | Participants | |
|---|---|---|
| | n | % |
| Gender | | |
| Male | 61 | 34.26 |
| Female | 117 | 65.73 |
| Level of education | | |
| Not educated | 72 | 40.44 |
| Primary school | 54 | 30.33 |
| Secondary school | 30 | 16.85 |
| High school | 22 | 12.35 |
| Marital status | | |
| Single | 26 | 14.60 |
| Married | 23 | 12.92 |
| Widowed | 129 | 72.47 |

TABLE 2. NUMBER AND PERCENTAGE OF VARIABLES (N=178)

| Variables | n | % |
|---|---|---|
| **Coping strategies** | | |
| **Problem-Focused Coping** | | |
| Often used | 139 | 78.09 |
| Rarely used | 39 | 21.91 |
| **Emotion-Focused Coping** | | |
| Often used | 88 | 49.44 |
| Rarely used | 90 | 50.56 |
| | | |
| **Social Support** | | |
| Low | 60 | 33.71 |
| Moderate | 63 | 35.39 |
| High | 55 | 30.90 |
| | | |
| **Perceived health status** | | |
| Good | 92 | 51.69 |
| Moderate | 77 | 43.26 |
| Bad | 9 | 5.05 |
| | | |
| **Stress** | | |
| Much lower than average | 2 | 1.12 |
| Slightly lower than average | 66 | 37.08 |
| Average | 39 | 21.91 |
| Slightly higher than average | 64 | 35.96 |
| Much higher than average | 7 | 3.93 |

Coping was categorically referred as problem-focused coping and emotion-focused problem. Problem-focused coping was a result of summative domain in confrontative coping, seeking social support, planful problem solving and positive appraisal. Meanwhile, emotion-focused coping was result of summation domain distancing, self-controlling, accepting responsibility, and escape avoidance. The result showed that the majority of the respondents had often used problem-focused coping strategy 139 (78.09%). For emotion-focused coping, the number of participants who rarely used of coping strategy 90 (50.56%) was higher than those who often used 88 (49.44%). The respondents who used problem-focused coping were higher than who used emotion-focused coping. It indicated that the respondents attempt to find solution to resolve the problem causing stress or to alter the stressor by direct action.

Out of 178 elderly, 63 (35.4%) they were reported that social support on moderate level. The result pointed that the perception of elderly related to the availability of support from friends, family, and co-workers on the moderate level. Out of 178 elderly, 51.69 % of the elderly perceived a good health status. The result also revealed that the elderly rated their current health status in range 1-5 (Mdn = 2.52). It indicated that half of elderly perceived themselves as being healthy recently.

Out of 40, as the possible total score of stress, the maximum score was 24 with the median score was 13. Sixty

six (37.08%) out of 178 elderly subjects perceived stress level on slightly lower than average scale.

TABLE 3. LOGISTIC REGRESSION OF VARIABLES ON STRESS IN ELDERLY IN PUBLIC NURSING HOME (N = 178).

| | B | Wald | Odds Ratio | SE | 95% CI | p |
|---|---|---|---|---|---|---|
| Not educated (ref) | | 10.03 | | | | .01 |
| Primary school | -1.07 | 5.95 | .34 | .44 | .14-.81 | .01 |
| Secondary school | -1.32 | 5.70 | .26 | .55 | .09-.79 | .01 |
| High school | -1.42 | 5.03 | .24 | .63 | .07-.83 | .02 |
| PHS | -.79 | 7.47 | .45 | .29 | .25-.80 | .00 |
| Social Support | -.13 | 8.74 | .88 | .04 | .81-.95 | .00 |
| ADL | .08 | 3.98 | 1.08 | .04 | 1.00-1.18 | .04 |
| Constant | 13.47 | | | | | |

## VI. DISCUSSION

Perceived health status was the second factor that could predict stress in elderly staying in public nursing home. It was found that perceived health status was negatively correlated with stress, with a statistical significance ($r_s$ = -.352; $p < .01$), (See Table 8), and could explain odds ratio .45 with statistical significance ($p < .01$), (See Table 3). It could be inferred that the elderly with a good perceived health status would have less stress. It seems that perceived health status had a great impact on stress in elderly. Therefore, to prevent stress in the elderly people, it might be useful to focus more on improving life satisfaction in the elderly and help them find personal meaning in their life [30]. This result was consistent with other studies showing that perceived health status was significant predictor for stress [30, 19]. However, another study revealed that perceived health status did not predict the stress [1].

Social support was the third factor that could predict stress in elderly staying in public nursing home. Table 3 showed that odd ratio .88 with statistical significance (p <.01) of the social support. Thus, it could be concluded that the elderly with high social support would have less stress. On the contrary, those with low social support would have high stress. Social support derived contact with and support from the family, staff and friends. The contact and support exchanges with staff and residents in nursing home appeared to be more important for the resident's psychological health than those with the family because the residents in nursing home have no access to a telephone and the family rarely visits them. Family support was the most effective factor influencing the sense of stress experienced by residents of nursing home. Social support is one of the important factors that plays major role in maintaining wellbeing in the elderly. This study was

consistent with another study [31]. Social support is the factor that affects most health behaviours, and declining health and increasing disability overshadowed social support in explaining depression and found that social isolation measures were equally important.

This study showed that the elderly gained social support at medium level. Therefore, this provides a great opportunity for health professional to give more attention to social support of the elderly; in particular to reduce the amount of stress in the elderly in nursing home. It is commonly assumed, and also documented that social relations reduce stress [1], even though another study did not support such a relationship [32]. The link was not found in this study; both measured a perceived social support or whether person lives with someone or alone. The reason for this may lie in the complex nature of social relationships.

Activity of daily living was the last factor that could predict stress in elderly staying in public nursing home and could explain odd ratio 1.08 with statistical significance (p < .05), (See Table 3). It could be inferred that elderly who were dependent in activity of daily living would have high stress. On the contrary, those with independence in activity of daily living would have less stress. This study was consistent with other studies that activity of daily living predicted stress [33, 34, 35, 36, 37, 38, 39]. In contrary, other studies stated that activity of daily living did not predict stress in elderly (40, 1].

## VII. CONCLUSION

This study focused on stress in elderly staying in public nursing home. It presented that some factors, such as education level, perceived health status, social support, coping, and activity of daily living were associated with stress in elderly. Moreover, some factors, such as education level, perceived health status, social support, and activity of daily living were predictors of stress in elderly. Furthermore, the activity of daily living revealed the strongest contribution to stress in the elderly, followed by social support, perceived health status, and education. The finding also showed that the model of the logistic regression accounted 33.4 per cent of the variance in stress in elderly staying in public nursing home.

### REFERENCES

[1] Thygesen, E., H. I. Saevareid, T. C. Lindstrom and K. Engedal. 2009. Psychological distress and its correlates in older care-dependent persons living at home. Aging & Mental Health 13(3): 319-327.

[2] World Health Organization. 2012. Interesting facts about ageing. Available Source: http://www.who.int/ageing/about/facts/en/index.html, January 23, 2014.

[3] Kahnamouei, S. B., M. J. Bazmi and K. Allahvirdiyani. 2011. Relationship of religious orientation (inward-outward) with depression, anxiety and stress. Procedia-Social and Behavioural Science 30:2047-2049.

[4] Ministry of Health of Indonesia. 2013. Penduduk Lansia Capai 18,1 Juta, Pemerintah Tambah Puskesmas Santun. Available Source: http://www.setkab.go.id/berita, January 23, 2014

[5] Indonesian Statistics Bureau. 2014. Harapan Hidup. Available Source: http://www.datastatistikindonesia.com/portal/index.php, January 23, 2014.

[6] Yenni and Herwana. 2006. Prevalensi penyakit kronis dan kualitas hidup pada lanjut usia di Jakarta selatan. Available resource http://www.univmed.org/wp-content/uploads/2012/04/Yenny.pdf, April 22, 2014

[7] Asrianti, R. 2010. Hubungan antara tingkat depresi dengan tingkat kemampuan melaksanakan aktivitas sehari-hari pada lanjut usia di PSTW Sabai Nan Aluih Sicincin. Thesis, Andalas University.

[8] Martin, P., P. Vikram, S. Shekar and M. Mario. 2007. Global mental health 1 no health without mental health. The Lancet Proquest Central 370 (9590): 859-877

[9] Vink, D., M. J. Aartsen, H. C. Comijs, M. W. Heymans, B. W. J. H. Pennix, M. L. Stek, D. J. H. Deeg and A. T. F. Beekman. 2009. Onset of anxiety and depression in the aging population: Comparison of RISK Factors in a 9-year prospective study. The American Journal of Geriatric Psychiatry 17(8): 642–652.

[10] Hospital Association of Indonesia. 2008. 74% Lansia di Indonesia Menderita Kronis. Available Source: http://www.pdpersi.co.id, April 24, 2014.

[11] Gilmour, H. and J. Park. 2003. Dependency, chronic condition and pain in senior. Supplement to Health Reports 16: 21-31.

[12] Quail, J.M., C. Wolfson and A. Lippman. 2011. Unmet need for assistance to perform activities of daily living and psychological distress in community-dwelling elderly women. Canadian Journal on Aging 30(4):591-602.

[13] Lazarus, R. S and S. Folkman. 1984. Stress Appraisal and Coping. Spinger publishing company, New York.

[14] Suldo, S. M., E. Shaunessy and R. Hardesty. 2008. Relationships among stress, coping, and mental health in high-achieving high school students. Wiley Interscience 45(4): 273-290.

[15] Hawkey, L. C. and J. T. Cacioppo. 2004. Stress and the aging immune system. Brain, Behavior, and Immunity 18 (2004) 114-119.

[16] Rasul, F., S. A. Stansfeld, C. L. Hart, C.R. Gillis and G. D. Smith. 2004. Psychological distress, physical illness and mortality risk. Journal of Psychosomatic Research 57(3): 231-236.

[17] Lee, Y and K. Holm. 2012. Stressors related to depression among elderly Korean immigrants. Issues in Mental Health Nursing, 33:52-58.

[18] An, G and K. Jo. 2009. The effect of nursing presence program on reducing stress in older adults in two Korean nursing homes. Australian Journal of Advanced Nursing 26(3): 79-85.

[19] Chang, S. and M. Fang. 2004. The elderly living in nursing home: cross-culture comparison. Tzu Chi Nursing Journal 3(2): 41-49.

[20] Chang, S. J. 2013. Lived experiences of nursing home residents in Korea. Asian Nursing Research 7(2): 83-90.

[21] Sletebo, A. P. 2008. Safe, but lonely: living in a nursing home. Nursing Science Vard 1 Norden 28(1): 22-25.

[22] Cutrona, C. E. and D. W. Russell. 1987. The provision of social relationships and adaptation to stress. Advances in Personal Relationship 1:37-67.

[23] Lazarus, R. S and S. Folkman. 1988. Ways of coping questionnaire. Mind Garden, United States of America

[24] Senanarong, V., K. Harnphadungkit, N Prayoonwiwat, N. Poungvarin, N.Sivasariyanonds. T. Printakul, S. Udomputhurak and J. L. Cummings. 2003. A new measurement of activity daily living for Thai elderly with dementia. International Psychogeriatric 15(2): 135-148.

[25] Cohen, S., T. Kamarck, and R. Mermelstein. 1983. A global measure of perceive stress. Journal of Health and Social Behavior 24(4): 385-396.

[26] Ramirez, M. T. G. and R. L. Hernandez. 2007. Factor structure of the perceived stress scale (PSS) in a sample from Mexico. The Spanish Journal of Psychology 10(1): 199-206.

[27] Gillani, S. W., S. A. Syed., Y. O. Sari, A. Sarrif, A. Amin and M. Baig. 2011. Perceived stress scale psychometric validation for Malaysian diabetic patients. British Journal of Pharmaceutical Research 1(4): 156-163.

[28] Kalaldeh, M. T. A. and G. M. A. Shosa. 2012. Aplication of the perceived stress scale in health care studies, an analysis of literature. International Journal of Academic Research 4(4): 45-50.

[29] Koenig, H. G. and A. Bussing. 2010. The Duke university religion index (DUREL): a five-item measure for use in epidemiology studies. Religions 1(1): 78-85.

[30] Chung, Soondool. 2008. Residential status and depression among Korean elderly people: a comparison between residents of nursing home and those based in the community. Health and Social Care in the Community 14(4): 370-377.

[31] Chan, M.F. and W. Zeng. 2011. Exploring risk factors for depression among older man residing in Macau. Journal of Clinical Nursing, 20(17-18): 2645-2654

[32] Minardi, H. A. and M. Blanchard. 2003. Older people with depression: pilot study. Journal of Advanced Nursing, 46(1): 23-32.

[33] Bramm, A. W., M. J. Prince, A. T. F. Beekman, P. Delespaul, M. E. Dewey, S. W. Geerlings, S. L. Kivela, B. A. Lawlor, H. Magnuson, I. Meller, K. Peres, F. M. Reischies, M. Roelands, R. A. Schoevers, P. Saz, I. Skoog, C. Turrina, A. Versporten and J. R. M. Copelan. 2005. Physical health and depressive symptoms in older Europeans: Result from EURODEP. The British Journal of Psychiatry 187: 35-42.

[34] Cairney, J., G. Faulkner, S. Veldhuizen and T.J. Wade. 2009. Changes over time in physical activity and psychological distress among older adults. Can J Psychiatry 54(3):160-169.

[35] Gadalla, T. M. 2009. Determinant, correlates and mediators of psychological distress: a longitudinal study. Social Science & Medicine 68(12): 2199-2205.

[36] Javapour, A., A. Ghemitri, A. Sahraian and A. Mani. 2009. Psychological stressors and burden of medical condition in older adults: a psychosomatic approach. Iran J Psychiatry 4:107-111.

[37] Permana, F. H., M. Sumarwati and I. Rosyadi. Hubungan penurunan fungsi gerak lansia terhadap strategi koping stress lansia dipanti jompo di Tasikmalaya. The Soedirman Journal of Nursing 4(3): 125-130.

[38] Gadalla, T. M. 2010. The role of mastery and social support in the association between life stressors and psychological distress in older Canadians. Journal of Gerontological Social Work 53:512-530.

[39] Muhsen, K., N. G. Sandalon, R. Gross and M. S. Green. 2010. Psychology distress is independently associated with physical inactivity in Israeli adults. Preventive Medicine 50(3): 118-122.

[40] Greenglass, L., Fiksenbaum and J. Eaton. 2006. The relationship between coping, social support, functional disability and depression in the elderly. Anxiety, Stress, and Coping 19(1): 15-31.