MJN

NUTRITIONAL STATUS AND QUALITY OF LIFE IN ELDERLY

Dewi Kurniawati*, A. Dewi

Nursing Department, Yarsi Health College, West Sumatera, Indonesia

**Corresponding Author's Email: syabib_alkhalil@yahoo.co.id*

ABSTRACT

Background: Nutritional status has an essential role in older person. Nutrition helps to promote health and slow down the progression of the diseases. The impact of malnutrition results in the loss of the mass muscle, functional impairment and decreased the quality of life. **Objective:** This study examined the relationship between nutritional status and quality of life among elderly in West Sumatera. **Materials:** A Total 125 aged person living at Elderly Center in West Sumatera, 76 men (60.8%) and 49 women(39.2%). **Methods:** Mini Nutritional Assessment (MNA) and WHO Quality of Life –BREF (WHOQOL-BREF) were used to assess nutritional status and quality of life in elderly. **Results:** Twenty seven (21.6%) patients were well-nourished, 84 (67.2%) were at high risk to malnutrition while 14 (11.2%) were malnourished. Total sample were at risk of malnutrition and have lower QoL. About 7 (25.9%) well-nourished patients also have lower QoL, which may be caused by their health condition. **Conclusions:** There were significant relationship between nutritional status and QoL among elderly people.

Keywords: Elderly, MNA, Nutrition, Quality of Life

INTRODUCTION

Global Health and Aging (2012) recorded that elderly populations in the world at present is about 6 million and in 2025 the number is estimated to rise to 1.2 million population. In the countries included within ASEAN, it was found that elderly individuals who are older than 60 years are about 142 million (8%) which is estimated to reach 426 million by the year 2050. These increasing numbers, demand special attention for elderly population so that they are healthy and help them to age gracefully which include the years of healthy life and with quality of life (QoL) (Kotska & Bogus, 2007). Nowadays QoL in older populations have become the main goal for elderly health promotion. It is more important than morbidity and mortality (Drewnowski & Evans, 2001), because among elderly worthy living is better than longer aging (Brooks, Rabin & De Charro, 2003). Moreover measuring QoL will give another treatment evaluation which means patients can be holistically assessed among elderly population (Vetta *et al.*, 1999; Drewnosky & Evan, 2001). Lower QoL among elderly may indicate interference related to disability and malnutrition.

Nutritional status plays an essential role in the health status among older person. So by promoting health, an active life will be maintained which will slow down the progress of the diseases. Furthermore poor nutritional status in older person will accelerate the state from vulnerability to frailty and finally dependence. Other than that, malnutrition becomes another concern among elderly above 65 years. There is increasing number of evidence that show malnutrition in aging people (Mcwhriter & Pennington, 1994; Hersink *et al.*, 2010; Russel & Elia, 2010). Wherein this condition can be decrease health status and impact in economic aspect (Kaiser *et al.*, 2010; Carmienke *et al.*, 2013; Prospective Studies Collaboration, Whitlock *et al.*, 2009). Besides that malnutrition in extreme condition will cause the loss of muscle strength and muscle mass, decrease functional condition and lower QoL (Muhlethaler *et al.*, 1995; La Rue *et al.*, 1997).

Some studies have indicated a relationship between lack of nutritional status and lower QoL in some patients with cancer (Bottomley & Therasse 2002; Gramignano *et al.*, 2006; Oates *et al*., 2007; Trabal *et al.*, 2006; Van

Bokhorst-de *et al.*, 2000). Hence the association between nutritional status and QoL in elderly stills fewer in number especially in West Sumatera, Indonesia. Therefore, the present study aimed to examine the relationship between nutritional status and quality of life in elderly in West Sumatera.

RESEARCH METHODOLOGY

Study Design

A cross sectional study was conducted to examine relationship nutritional status and quality of life at Elderly Home Center in West Sumatera. Face to face interview was held from February to June 2015. Participants were included if they were 60 years and older, staying at Elderly Home Center. The participants signed the consent form. Exclusion criteria were impaired cognitive, visual and hearing function.

This study was approved by the Unity of the Nation and Politics Board, the local ethic committee of the city of Bukittnggi in West Sumatera (reference number: B.070/917/Was-BKpol/2015).

Participant characteristics

Participants characteristic were assessed by interview. Weight was measured in light clothing; height was assessed by knee height measurements. Body Mass Index (BMI) was calculated by measuring height and weight as weight (kg) / height^2 (m). BMI was used to examine underweight with less than 18.5kg/m^2, normal weight within 18.5-25.0kg/m^2, overweight with more than 25 kg/m^2. Level of education was defined as 'primary' for participants with elementary school or no degree, 'secondary' for those with apprenticeship certificate or a university entrance diploma ('Matura'), and 'tertiary' for participants with education after the university entrance diploma as university degrees. Marital status was categorized as 'married', 'widowed' and 'unmarried'. The disease was divided to 'one disease' and 'more than one'.

Mini Nutritional Assessment (MNA)

Nutritional status was assessed by the MNA, an instrument which is validated for the nutritional assessment of older persons which consist of 18 items and divided into 4 category; anthropometry measurement, global assessment, diet assessment and subjective assessment.

World Health Organization Quality of Life – BREF (WHOQUL-BREF)

World Health Organization Quality of Life – BREF (WHOQOL-BREF) The WHOQOL-BREF (Orley, 1996) is a self-rated and multidimensional instrument with 26 items scored on a five-point Likert scale. The first two questions assess the 'overall QoL, whereas the remaining questions covering four domains of 'physical health' (7 items), 'psychological health' (6 items) 'social relationship' (3 items), and 'environment' (8 items). The items were transformed into domain scores with a range of 0 to 100, as higher scores indicate higher QoL (Orley, 1996).

Statistical analysis

All data were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistic including mean, range, standard deviation and frequency were used to present subject's demographic information; median, minimum and maximum for continuous variables. The score of overall QoL was treated as categorical variable by split of lower or higher than 40 points base on median calculation (Luger *et al.*, 2016). In bivariate analysis, Chi Square were calculated for relationship between nutritional status and QoL.

RESULTS

One hundred and twenty five elderly from two Elderly Home Center in West Sumatera were included for this research. Characteristic of respondents has been shown in Table 1. There were 76 men (60.8%) and 49 women (39.2%), aged 62-90 years. Most of the respondents had a primarily level of education and most of the participants were widow. About 59.2% elderly were un-well and 68.8% the participants have normal BMI. Sixty seven percents of them had high risk of malnutrition and more than half of elderly have lower QoL.

Table 2 gives the chi square result between nutritional status and QoL. There is significant relationship for two variables (p=0.012). It means that persons are under high risk if they are malnourished or if the malnourishment has already lowered their QoL compared to persons with normal nourishment.

Table 1: Respondents' Characteristics in Elderly Nursing Home in West Sumatera 2015

Respondents Characteristics	f	%
Sex		
Men	76	60.8
Women	49	39.2
Education		
Primary	102	81.6
Secondary	17	13·6
Tertiary	6	4.8
Marital status		
Married	2	1.6
Unmarried	5	4.0
Widow	118	94.4
Diseases		
1 disease	51	40.8
>1 diseases	74	59.2
BMI		
BMI < 18.5 kg/m^2	26	20.8
BMI 18.5-25 kg/m^2	81	68.8
BMI > 25 kg/m^{2}Klmlk	18	14.4
Nutritional Status		
Normal nourished	26	20.8
Risk of malnutrition	85	68.0
Malnourished	14	11.2
QoL		
Higher	61	48.8
Lower	64	51.4

Table 2: Relationship between Nutritional Status and QoL in Elderly Home Center in West Sumatera 2015

MNA	Min-Max	Mean ± SD	*p value*
Normal nourished	24 – 30	24.77 ± 1.415	0.012
Risk of malnutrition	17 – 23	20.88 ± 1.919	
Malnourished	13 – 16	14.71 ± .852	

DISCUSSION

In present study the prevalence of risk of malnutrition is the highest number in Elderly Home Center. This study is similar with Kehayias (2002) which showed that about 76.8% respondents in old age home were malnourished or at high risk of malnutrition. Besides that research work of Rashed & Woods (2013) reported that the nutritional status was significantly associated with QoL. The study noted that a significantly lower QoL was experienced by the malnourished respondents, vice versa to individual who were well nourished. Food intake, mobility and psychological stress have an effect on QoL among elderly. Malnourished individuals are likely to be disabling, and disabled individuals have high risk for nutritional problems, because they are more dependent on others for their needs (Dwyer, 1991).

Furthermore, acute and chronic diseases in elderly also have impact on the health status, more to the quality of life. The incidence of diseases could reduce nutritional status in elderly (Li, Kuo & Lin, 2013). Nutritional status is important to individual health and avoids morbidity. Unfortunately appetite conditions are not included in this research.

Interestingly in this study 25.9% elderly who were well nourished have lower QoL. It might be caused by the health condition and the age of elderly. Most of them are aged more than 80 years. In aging people all the functional conditions deteriorate gradually. As a result it leads to psychological, medical and social problems.

CONCLUSION

The results reported in the present study show that malnutrition risk is linked to a poorer QoL in elderly in Home Center. Statistical analysis revealed significant relationship between nutritional status and QoL. Therefore it is evident from the present finding that nutrition is an important factor for QoL improvements.

REFERENCES

Bottomley, A. & Therasse, P. (2002). Quality of life in patients undergoing systemic therapy for advanced breast cancer. *The Lancet Oncology*, 3(10), pp 620–628.

Brooks, R.G., Rabin, R. & De Charro, F. (2003). The Measurement and Valuation of Health Status Using EQ-5D: a European Perspective: Evidence From the Euro Qol BIOMED. *Research Programme*. Rotterda: Kluwer Academic.

Carmienke, S., Freitag, M.H., Pischon, T., Schlattmann, P., Fankhaenel, T. & Goebel, H. (2013). General and abdominal obesity parameters and their combination in relation to mortality: a systematic review and meta-regression analysis. *European Journal Clinical Nutrition,* 67(6), pp 573–585.

Dwyer, J.T. (1991). Screening Olde American Nutritional Health: Current Practices and Future Possibilities, Nutritional Screening Initiative, Washington, DC. Retrieved from: https://journals.lww.com/nutritiontodayonline/Abstract/1991/09000/Screening_Older_Americans__Nutritional_Health_.4.aspx

Drewnowski, A. & Evans, W. J.(2001). Nutrition, physical activity, and quality of life in older adults: summary.*Journal Gerontology and Biology Sciences and Medical Science*, 56 (2), pp 89–94.

Gramignano, G., Lusso, M. R., Madeddu. C., Massa, E., Serpe, R., Deiana, L., Lamonica, G., Dessì, M., Spiga, C., Astara, G., Macciò, A. & Mantovani, G. (2006). Efficacy of L-carnitine administration on fatigue, nutritional status, oxidative stress, and related quality of life in 12 advanced cancer patients undergoing anticancer therapy. *Nutrition*, 22(2), pp 136–145.

Heersink, J.T., Brown, C.J., Dimariahalili, R.A. & Locher, J.L. (2010). Undernutrition in Hospitalized Older Adults: Patterns and Correlates, Outcomes, and Opportunities for Intervention with a Focus on Processes of Care. *Journal Nutritional Elderly*, 29(1), pp 4–41.

Kaiser, M.J., Bauer, J.M., Rämsch, C., Uter, W., Guigoz, Y., Cederholm, T., Thomas, D. R., Anthony, P. S., Charlton, K. E., Maggio, M., Tsai, A. C., Vellas, B., Sieber, C. C.; Mini Nutritional Assessment International Group. (2010). Frequency of malnutrition in older adults: a multinational perspective using the mini nutritional assessment. *Journal American Geriatric Social*, 58(9), pp 1734–1738.

Kehayias, J.J. (2002). Aging and Body Composition. In: I.H. Rosenberg; A. Sastre (eds), Nestl´e Nutrition Workshop Series Clinical & Performance Program, *Nutrition and Aging*, 6, pp 63-78.

Kostka, T. & Bogus, K. (2007). Independent Contribution of Overweight/Obesity and Physical Inactivity to Lower Health-Related Quality of Life In Community-Dwelling Older Subjects. *Journal Gerontology Geriatric*, 40(1), pp 43-51.

La Rue, A., Koehler, K., Wayne, J., Chiulli, S. J., Haaland, K. Y. & Garry, P.J. (1997). Nutritional status and cognitive functioning in a normally aging sample: a 6-year reassessment. *American Journal Clinical Nutrition*, 65(1), pp 20–29.

Li, I.C., Kuo, H.T. & Lin, Y.C. (2013). The mediating effects of depressive symptoms on nutritional status of older adults in long-term care facilities. *Journal Nutritional Health Aging*, 17(7), pp 633–636.

Luger, E., Haider, S., Kapan, A., Schindler, K., Lackinger, K. & Dorner, T.E. (2016). Association Between Nutritional Status And Quality of Life In (Pre) Frail Community-Dwelling Older Persons. *The Journal of Frailty & Aging*, 5(3), pp 141-148.

Mcwhirter, J. P. & Pennington, C.R. (1994). Incidence and recognition of malnutrition in hospital. *British Medical Journal*, 308(6934), pp 945–948.

Mühlethaler, R., Stuck, A., Minder, C.E. & Frey, B. M. (1995). The prognostic significance of protein-energy malnutrition in geriatric patients. *Age Ageing*, 24(3), pp 193–197.

Orley, J. (1996). WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment. Program on mental health, Geneva. Retrieved from: http://www.who.int/mental_health/media/en/76.pdf

Oates, J. E., Clark. J. R., Read, J., Reeves, N., Gao, K. & Boyer, M. (2007). Prospective evaluation of quality of life and nutrition before and after treatment for nasopharyngeal carcinoma. *Otolaryngology Head Neck Surgery*, 133(6), pp 533–540

Prospective Studies Collaboration, Whitlock, G., Lewington, S., Sherliker, P., Clarke, R. & Emberson, J. (2009). Body-mass index and cause-specific mortality in 900000 adults: Collaborative analyses of 57 prospective studies. *Lancet*, 373(9669), pp 1083–1096.

Rasheed, S. & Woods, R.T. (2014). An investigation into the association between nutritional status and quality of life in older people admitted to hospital. *Journal of Human Nutrition and Dietetics*, 27(2), pp 142–151.

Russell, C.A.& Elia, M. (2010). Malnutrition in the UK: where does it begin? *The Proceeding of the Nutrition Society*, 69(4), pp 465-469.

Trabal, J., Leyes, P., Forga, M. T. & Hervas, S. (2006). Quality of life, dietary intake and nutritional status assessment in hospital admitted cancer patients. *Nutritional Hospitalaria*, 21(4), pp 505–510.

Van Bokhorst-de, Van der Schuer, M. A., Langendoen, S.I., Vondeling, H., Kuik, D. J., Quak, D. J. & Van Leeuwen, P. A. (2000). Perioperative enteral nutrition and quality of life of severely malnourished head and neck cancer patients: a randomized clinical trial. *Clinical Nutrition*, 19(6), pp 437–444.

Vetta, F., Ronzoni, S., Taglieri, G. & Bollea, M.R. (1999). The impact of malnutrition on the quality of life in the elderly, *Clinical Nutrition*, 18(5), pp 259–67.

World Health Organization. (2012). Health situation and trend assessment: Health situation and trend assessment. Elderly population. WHO, Geneva.