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Dietary intake is compromised among elderly living in agricultural settlements (2019) Nutrition and Food Science, .

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Purpose: This study aims to investigate dietary intake among elderly living in agricultural settlements in comparison with a recent nutritional recommendation. Design/methodology/approach: This cross-sectional study was carried out among elderly living in five agricultural settlements in Kuantan, Pahang, Malaysia. Participants were interviewed on socio-demographic information such as age, gender, marital status, smoking status, household income, education level and living status. Data on individual dietary intake were obtained through diet history method. Dietary intake data were analyzed using Nutritionist Pro software and compared to the recommended nutrient intakes (RNI) for Malaysia version 2017. Statistical analyses were performed using SPSS software version 21. Findings: A total of 413 participants (male 32.4 per cent and female 67.6 per cent) with the mean age of 69.4 ± 7.9 years participated in this study. Dietary intake results demonstrated that participants did not meet the Malaysian RNI for energy and most nutrients (p < 0.05). This study also found that energy, carbohydrate, protein, fat, folate and iron intake were significantly higher in male than female (p < 0.05). Meanwhile, calcium and vitamin A intake were significantly higher in female than male (p < 0.05). Research limitations/implications: Integrated nutrition education and health promotion programme with a multidisciplinary approach are essential to be designed and executed to improve dietary intake of the elderly, which can further lead to appropriate dietary practices and knowledge improvement related to healthy food choices. Factors associated with inadequate dietary intake and awareness on the importance of adequate nutrients intake among the elderly warrant further investigation. Originality/value: This research is at the forefront, which indicated that the dietary intake of elderly individuals living in the agricultural settlement was inadequate in comparison to the latest recommendation. Strategies to improve their intakes need to be developed and implemented accordingly to improve nutritional status and prevent adverse effects to health. © 2019, Emerald Publishing Limited.

Author Keywords

Dietary intake; Elderly; Nutrients; Nutritional status; Recommended nutrient intakes

References

Afolabi, W.A.O., Olayiwola, I.O., Sanni, S.A., Oyawoye, O.

Nutrient intake and nutritional status of the aged in low income areas of Southwest,

(2012) Journal of Aging Research and Clinical Practice, 4 (1), pp. 66-72.

- Amarantos, E., Martinez, A., Dwyer, J.
 - Nutrition and quality of life in older adults

(2001) The Journals of Gerontology Series A: Biological Sciences and Medical Sciences, 56, pp. 54-64.

- Amarya, S., Singh, K., Sabharwal, M.
 - Changes during aging and their association with malnutrition (2015) Journal of Clinical Gerontology and Geriatrics, 6 (3), pp. 78-84.
- Bhatia, V.
 - Dietary calcium intake a critical reappraisal

(2008) The Indian Journal of Medical Research, 127 (3), pp. 269-273.

- Bowman, S.
 - Low economic status is associated with suboptimal intakes of nutritious foods by adults in the national health and nutrition examination survey 1999-2002 (2007) Nutrition Research, 27 (9), pp. 515-523.
- Damião, R., Santos, Á., da, S., Matijasevich, A., Menezes, P.R.

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Factors associated with risk of malnutrition in the elderly in South-Eastern Brazil (2017) Revista Brasileira de Epidemiologia, 20 (4), pp. 598-610.

• Darmon, N., Drewnowski, A. Contribution of food prices and diet cost to socioeconomic disparities in diet quality and health: a systematic review and analysis (2015) Nutrition Reviews, 73 (10), pp. 643-660.

• de Morais, C., Oliveira, B., Afonso, C., Lumbers, M., Raats, M., de Almeida, M.D. **Nutritional risk of European elderly** (2013) European Journal of Clinical Nutrition, 67 (11), pp. 1215-1219.

 Donini, L.M., Savina, C., Cannella, C. Eating habits and appetite control in the elderly: the anorexia of aging (2003) International Psychogeriatrics, 15 (1), pp. 73-87.

• Drewnowski, A., Shultz, J.M. Impact of aging on eating behaviors, food choices, nutrition and health status (2001) The Journal of Nutrition, Health and Aging, 5 (2), pp. 75-79.

 Fakhruddin, N., Shahar, S., Aziz, N.A.A. Which aging group prone to have inadequate nutrient intake?: TUA study (2016) Sains Malaysiana, 45 (9), pp. 1381-1391.

• Fisberg, R.M., Marchioni, D.M., Castro, M.A., Junior, E.V., Aroujo, M.C., Bezerra, I.N., Sichieri, R.

Inadequate nutrient intake among the Brazilian elderly: national dietary survey 2008-2009

(2013) Revista de Saude Publica, 47 (1), pp. 222-230.

• Hickson, M.

Malnutrition and ageing

(2006) Postgraduate Medical Journal, 82 (963), pp. 2-8.

 Jiménez-Redondo, S., Beltran De Miguel, B., Gavidia Banegas, J., Guzman Mercedes, L., Gomez-Pavon, J., Cuadrado Vives, C.

Influence of nutritional status on health-related quality of life of non-institutionalized older people

(2013) The Journal of Nutrition, Health and Aging, 18 (4), pp. 359-364.

• Johnson, C.S., Begum, M.N.

Adequacy of nutrient intake among elderly persons receiving home care (2008) Journal of Nutrition for the Elderly, 27 (1-2), pp. 65-82.

• JonesDuffyCoull, J., Wilkinson, H. (2009) Older people living in the community-nutritional needs, barriers and interventions: a literature review,

· Karaglani, L., Derbyshire, E.

(accessed: 21 January 2019

Dietary intake in an elderly population living in Athens (2008) Nutrition and Food Science, 38 (4), pp. 348-354.

· Langhans, W.

Signals generating anorexia during acute illness (2007) Proceedings of the Nutrition Society, 66 (3), pp. 321-330.

Lee, J.S., Frongillo, E.A.

Nutritional and health consequences are associated with food insecurity among US **Elderly persons**

(2001) The Journal of Nutrition, 131 (5), pp. 1503-1509.

• Lee, J.S., Kritchevsky, S.B., Tylavsky, F., Harris, T.B., Ayonayon, H.N., Newman, A.B. Factors associated with impaired appetite in well-functioning community-dwelling older adults

(2006) Journal of Nutrition for Elderly, 26 (1-2), pp. 27-43.

Leslie, W., Hankey, C.

Aging, nutritional status and health

(2015) Healthcare (Basel, Switzerland), 3 (3), pp. 648-658.

Lilley, J.M., Johnson, A.E.

Health and diet in a rural area: the construction of food choice in later life (1996) Nutrition and Food Science, 96 (5), pp. 22-25.

Margetts, B.M., Thompson, R.L., Elia, M., Jackson, A.A.

Prevalence of risk of undernutrition is associated with poor health status in older people in the UK

(2003) European Journal of Clinical Nutrition, 57 (1), pp. 69-74.

• Marshall, T.A., Stumbo, P.J., Warren, J.J., Xie, X.-J.

Inadequate nutrient intakes are common and are associated with low diet variety in rural, community-dwelling elderly

(2001) The Journal of Nutrition, 131 (8), pp. 2192-2196.

• Martin, C.T., Kayser-Jones, J., Stotts, N., Porter, C., Froelicher, E.S.

Nutritional risk and low weight in community-living older adults: a review of the literature (1995-2005)

(2006) The Journals of Gerontology Series A: Biological Sciences and Medical Sciences, 61 (9), pp. 927-934.

Mat Hussin, A.

(2006) Prevalence of metabolic syndrome and factors associated with it among women in Felda Palong, Gemas, Negeri Sembilan,

Masters thesis, Universiti Putra Malaysia

. Morris, M.S.

The role of B vitamins in preventing and treating cognitive impairment and decline (2012) Advances in Nutrition, 3 (6), pp. 801-812.

- (2005) Recommended Nutrient Intakes for Malaysia, Ministry of Health Malaysia, Putrajaya
- (2017) Recommended Nutrient Intakes for Malaysia, Ministry of Health Malaysia, Putrajaya
- Nozue, M., Ishikawa, M., Takemi, Y., Kusama, K., Fukuda, Y., Yokoyama, T., Nakaya, T., Murayama, N.

Prevalence of inadequate nutrient intake in Japanese community-dwelling older adults who live alone

(2016) Journal of Nutritional Science and Vitaminology, 62 (2), pp. 116-122.

• Paúl, C., Ribeiro, O., Teixeira, L.

Active ageing: an empirical approach to the WHO model (2012) Current Gerontology and Geriatrics Research, 2012, pp. 1-10. (accessed: 21 January 2019

• Ramic, E., Pranjic, N., Batic-Mujanovic, O., Karic, E., Alibasic, E., Alic, A. The effect of loneliness on malnutrition in elderly population (2011) Medical Archives, 65 (2), pp. 92-95.

Rina, K.

Gender differences in nutritional intake and status in healthy free-living elderly

(2008) *Universa Medicina*, 27 (3), pp. 113-124.

• Ruxton, C.

The role of micronutrients in healthy ageing (2011) Nutrition and Food Science, 41 (6), pp. 420-429.

- Shahar, S., Earland, J., Rahman, S.A. Food intakes and habits of rural elderly Malays (2000) Asia Pacific Journal of Clinical Nutrition, 9 (2), pp. 122-129.
- Shahar, S., Earland, J., Powers, H.J., Rahman, S.A. Nutritional status of rural elderly Malays: dietary and biochemical findings (1999) International Journal for Vitamin and Nutrition Research, 69 (4), pp. 277-284.
- Shahar, S., Ibrahim, Z., Fatah, A., Rahman, S., Yusoff, N., Arshad, F., Yassin, Z., Adznam,

A multidimensional assessment of nutritional and health status of rural elderly **Malavs**

(2007) Asia Pacific Journal of Clinical Nutrition, 16 (2), pp. 246-353.

Soon, S.D., Khor, G.L.

Nutritional status of children aged one to six years in Sg. Koyan FELDA in Pahang (1995) Malaysian Journal of Nutrition, 1 (2), pp. 115-128.

• Suriah, A.R., Zainorni, M., Shafawi, S., Mimie Suraya, S., Zarina, N., Wan Zainuddin, W., Zalifah, M.

Nutrient intake among elderly in Southern peninsular Malaysia (1996) Malaysian Journal of Nutrition, 2 (1), pp. 11-19.

- Tee, E.S., Noor, M.I., Azudin, M.N., Idris, K. (1997) Nutrition Composition of Malaysian Foods. Institute for Medical Research, Kuala Lumpur
- Ter Borg, S., Verlaan, S., Hemsworth, J., Mijnarends, D.M., Schols, J.M., Luiking, Y.C., de Groot, L.C.

Micronutrient intakes and potential inadequacies of community-dwelling older adults: a systematic review (2015) British Journal of Nutrition, 113 (8), pp. 1195-1206.

• Trabulsi, J., Schoeller, D.A.

Evaluation of dietary assessment instruments against doubly labeled water, a biomarker of habitual energy intake

(2001) American Journal of Physiology-Endocrinology and Metabolism, 281 (5), pp. 891-899.

- Tucker, K.L., Buranapin, S. Nutrition and aging in developing countries (2001) The Journal of Nutrition, 131 (9), pp. 2417-2423.
- Tur, J.A., Colomer, M., Moñino, M., Bonnin, T., Llompart, I., Pons, A. Dietary intake and nutritional risk among free-living elderly people in Palma De Mallorca

(2005) The Journal of Nutrition, Health and Aging, 9 (6), pp. 390-396.

- (2019) Sustainable development goal 3, (accessed: 21 June 2019
- Volkert, D., Kreuel, K., Heseker, H., Stehle, P. Energy and nutrient intake of young-old, old-old and very-old elderly in Germany (2004) European Journal of Clinical Nutrition, 58 (8), pp. 1190-1200.
- Wolfe, W.S., Frongillo, E.A., Valois, P.

Understanding the experience of food insecurity by elders suggests ways to improve its measurement

(2003) The Journal of Nutrition, 133 (9), pp. 2762-2769.

- (2019) Healthy ageing and the sustainable development goals, (accessed: 21 June 2019
- (2000) Obesity: Preventing and Managing the Global Epidemic, World Health Organization, Geneva
- Wynne, A.

Nutrition in older people

(1999) Nutrition and Food Science, 99 (5), pp. 219-224.

 Zainudin, N., Hamirudin, A.H., A. Rahman, N.A., Sidek, S. Malnutrition risk and perception on dietary practices among elderly living in agricultural settlements: a mixed-methods research (2018) Nutrition and Food Science, (accessed: 28 November 2018

 Sharkey, J.R., Branch, L.G., Zohoori, N., Giuliani, C., Busby-Whitehead, J., Haines, P.S. Inadequate nutrient intakes among homebound elderly and their correlation with individual characteristics and health-related factors (2002) The American Journal of Clinical Nutrition, 76 (6), pp. 1435-1445.

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