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Brief communication

Malnutrition in hospitalized Asian seniors: An issue that calls for action

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ABSTRACT

In Asia, the proportion of older people (i.e., > 65 years) in the population is already high and will continue to grow in the 21st century. Malnutrition, particularly undernutrition, is a common and costly problem among older people in communities and in hospitals. People with acute and chronic conditions are at a high risk of malnutrition. In our paper, we review the tools that are used to screen for malnutrition risk and to ascertain malnutrition. We call on health care professionals in Asia to take action against malnutrition in older people. Increased attention to nutritional care is essential to improving the wellbeing of older people and containing health care costs.

1. Introduction

The world's population is aging. The percentage of people who are aged 60 years or older increased globally from 9.2% in 1990 to 11.7% in 2013, and will reach 21.1% of the population by 2050. These figures affect Asia more than any other continent: three of the four countries with the most people aged ≥ 80 years are Asian. More than 60% of persons aged ≥ 80 years—144 million people—live in Asia (United Nations, Department of Economic and Social Affairs, Population Division (2013). World Population Ageing 2013. ST/ESA/SER.A/348).[1] It is therefore imperative that Asia prepares for the major issues that an aged society will face. Among such issues is the widespread prevalence of malnutrition in the elderly. Studies of hospitalized patients worldwide have reported that the prevalence of malnutrition (i.e., undernutrition) and nutritional risk affect up to 50% of individuals.[2–8] Such pervasiveness is particularly evident among seniors and individuals with comorbid conditions that are associated with nutritional intake. Aging is frequently accompanied by decreased taste acuity and smell, deteriorating dental health, and a decline in physical activity because of lifestyle or disability, all of which may affect nutrient intake[9] and lead to undernourishment and its potentially serious consequences. However, undernutrition is not an inevitable consequence of aging. This article aims to raise clinicians' awareness of the prevalence of malnutrition in hospitalized seniors. With inadequate strategic planning and actions, this preventable problem is gradually becoming a significant health care issue and a future economic burden.

Some countries are beginning to take actions that will help improve the health status of older people. In an Urban Aging Forum, Chen et al[10] discussed initiating programs for long-term care insurance (LTCI). Germany and Japan initiated LTCI programs when the elderly population rates reached 17–18%, whereas Korea introduced a LTCI program when its elderly population was just 10%.[10] Korean health care leaders recognized that the care of older people consumed up to 30% of its public health resources, and that its senior population (i.e., people aged ≥ 60 years) was continuing to grow.[10]

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2. Study results reviewed

2.1. Malnutrition and undernutrition: synonyms in hospital settings

Malnutrition (i.e., undernutrition) is a widespread condition that impacts millions of people across the world annually. Adult undernutrition typically occurs along a continuum of inadequate intake and/or increased nutritional requirements, impaired absorption, altered transport, and altered nutrient utilization. Weight loss can, and frequently does, occur at multiple points along this continuum. According to the definition by the British Association of Parenteral and Enteral Nutrition, malnutrition is a state of nutrition in which a deficiency or excess (i.e., imbalance) of energy, protein, and other nutrients causes measurable adverse effects on tissue/body form (i.e., body shape, size and composition, function, and clinical outcome).[11] Although the term malnutrition refers to overnutrition/obesity too, our discussion focuses on undernutrition.

In late 2009, the Academy of Nutrition and Dietetics (AND; Chicago, IL, USA) appointed a workgroup that included representation from the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.; Silver Spring, MD, USA) to identify and standardize the markers and characteristics of nutritional status that are distinct from the inflammatory response associated with various diseases and conditions.[12] No single parameter is definitive as undernutrition for adult malnutrition. The identification of two or more of the following six characteristics is recommended for diagnosis: (1) insufficient energy intake,[13–15] (2) weight loss,[6–19] (3) loss of muscle mass,[19,20] (4) loss of subcutaneous fat,[19,20] (5) localized or generalized fluid accumulation that may mask weight loss,[19,20] and (6) diminished functional status as measured by handgrip strength.[19,21–26] The Consensus Statement of the Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) suggested that the term "adult malnutrition" should be synonymous with "adult undernutrition."[12]

2.2. Prevalence of malnutrition in Asian hospitals

Malnutrition as undernutrition is common among hospitalized patients, even in well-developed countries such as the United States, and its coded prevalence is increasing.[27] The prevalence varies, depending on several factors such as a patient's diagnoses, age, nutrition parameters, and the screening and assessment tools used. Table 1 shows the prevalence of malnutrition in hospitalized seniors in Asia, according to country and setting, from data collected from studies conducted from 2005 to 2012.[43–51]

Our review of the studies conducted in Asia from 2005 to 2012 demonstrated that the prevalence of malnutrition (which includes the risk of malnutrition) among hospitalized seniors ranged from 16% to 78%. This range is consistent with the prevalence of malnutrition that has been documented in the United Kingdom (UK). For example, one study in the UK found that 29–61% of hospitalized older people had malnutrition,[28] and another study places the figure at 58%.[29] This wide range can be attributed to differences in the criteria used to identify malnutrition or its risk. However, it is clear that malnutrition is common in hospitalized elderly patients.

2.3. Nutrition screening and assessment tools

Screening tools such as the Malnutrition Screening Tool (MST), the Malnutrition Universal Screening Tool (MUST), and the Nutrition Risk Screening (NRS 2002) tool can quickly flag high-risk patients for further assessment. Thorough assessments can be completed efficiently by using tools such as the Subjective Global Assessment (SGA). The results can help personnel design appropriate nutrition intervention plans. Assessment tools such as the SGA provide a more complete picture of nutritional status beyond biochemical or anthropometric markers alone, both of which can be affected by factors other than nutrition. Table 2 provides a brief description of commonly used validated tools.[52–60]

Table 1
Prevalence of malnutrition in Asian countries.

Country	Study	Study population	Subjects (no.)	Health care setting	Prevalence of malnutrition &/or at risk of malnutrition (%)	Method & details of patients with reported malnutrition & patients at risk of malnutrition
China	Lei et al 2009 [43]	>60 y	184	Hospital	72.8	MNA: at risk, 53.2%; malnourished, 19.6%
	Shum et al 2005	≥60 y	120	Convalescent & rehabilitation hospital	16.7	Malnutrition: BMI <18.5 & albumin level <35 g/L
	Woo et al 2005 [45]	≥65 y	867	Hospitals & nursing homes	35.9	Chinese Nutrition Screening (CNS): at risk, 25.8%; undernourished, 10.1%
Vietnam	Pham et al 2006 [46]	Surgical patients, age not specified	438	Hospital admission	55.7	SGA • Total patient group: moderate, 28.8%; severe, 26.9%
					77.7	• Major surgery group: moderate, 35.4%; severe, 42.3%
India	Karmakar et al 2010 [47]	>60 y	76	Hospital	27.6 42.1	• BMI: undernourished, <18.5 kg/m2 • IBW: undernourished, <85%
Singapore	Lim et al 2011 [48]	Adults, 18–74 y	818	Acute tertiary hospital (i.e., within 48 hours of admission)	29	SGA: moderate, 25%; severe, 4%
Korea	Chung & Sohn 2005 [49]	Hospitalized geriatric patients, ≥65 y	108	Hospital	63	MNA Malnutrition: 22.3% At risk: 40.7%
Malaysia	Sakinah & Tan 2012 [50]	Medical & oncology elderly patients, ≥65 y	100	Hospital	21	Malnutrition Risk Screening Tool–Hospital (MRST-H; structured questionnaire), followed by anthropometry measurements. A total score ≥5 indicates "at high risk of malnutrition"
Indonesia	Sutanto 2011 [51]	Radiation therapy & gastrointestinal surgery patients	36	Hospital	34.8–37.1	Identified as underweight by BMI: • 34.8% of 23 patients in the Radiotherapy Unit • 37.1% of 13 patients in the Gastrointestinal Surgery Unit

BMI = body mass index; IBW = ideal body weight; MNA = Mini Nutrition Assessment; SGA = Subjective Global Assessment.