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Health related quality of life and its associated factors among community-dwelling older people in Sri Lanka: A cross-sectional study

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ABSTRACT

Background: Population ageing has become a public health issue as it is associated with increased morbidity, institutionalization and death. These may directly affect health-related quality of life (HRQOL) of older people. **Purpose:** The aim of the study was to investigate HRQOL and its associated factors among community-dwelling older people in Kandy district, Sri Lanka.

Method: This cross-sectional survey involved 1300 older people. The Euro 5D-3L, International Physical Activity Questionnaire, body mass index, handgrip strength were used to measure HRQOL, physical activity and nutritional status of older people respectively. Factors associated with health-related quality of life were identified through complex sample logistic regression analysis.

Results: Majority of older people (81.9%) reported poor health-related quality of life. Middle old (aOR: 12.06, 95% CI: 5.76, 25.23), very old (aOR: 174.74, 95% CI: 39.74, 768.38), vegetarian diets (aOR: 2.13, 95% CI: 1.14, 3.96), under-nutrition (aOR: 3.41, 95% CI: 1.65, 7.04) and over-nutrition (aOR: 1.85, 95% CI: 1.04, 3.28) were significantly associated with poor HRQOL. Using dentures (aOR: 0.05, 95% CI: 0.28, 0.90) was found as a protective factor for poor HRQOL.

Conclusions: HRQOL was poor among community-dwelling older people in Kandy district. Nutrition-related factors need to be further investigated to improve HRQOL among older people.

1. Introduction

Population ageing has become a global phenomenon. Due to a significant decline in fertility and increased life expectancy, the percentage of elderly population aged 60 or over in Sri Lanka is expected to rise from 12.3% to 16.7% in 2021. In 2041, 25% of people in Sri Lanka are expected to be 60 years and older (Nagel, Carlson, Bosworth, & Michael, 2008). This rapid demographic transition adversely affects the health status among older people in numerous ways. It increases the prevalence of various co-morbidities such as angina, arthritis, asthma, stroke, diabetes, depression, chronic lung disease and hypertension among this population (Wu et al., 2013). Further, institutionalization and death within a year have been identified as effects of demographic transition (Bilotta et al., 2011). These may consequently impair the health-related quality of life (HRQOL) of older people (Akosile et al., 2017). Therefore, monitoring and analyzing HRQOL among older

people is crucial to identify older people with low perceived quality of life. This in turn allows these groups to be prioritized when public health policies are implemented to address risk factors (Pietersma, de Vries, & van den Akker-van Marle, 2014). HRQOL is a broad and multidimensional concept. The World Health Organization (WHO) defines it as ‘an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns’ (“The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization,” 1995).

Previous studies have reported that poor or lower HRQOL among older people was associated with socio-demographic factors (Galiana, Gutiérrez, Sancho, Francisco, & Tomás, 2016; Lemos, Rodrigues, & Veiga, 2015; Perneger & Courvoisier, 2011). Under-nutrition, physical disability and emotional concerns, depression and cognitive impairment were also identified as predictors of HRQOL (Chen & Chen, 2017;

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Jimenez-Redondo et al., 2014; Somrongthong, Hongthong, Wongchalee, & Wongtongkam, 2016). In addition, loss of teeth, physical inactivity, consumption of alcohol and vegetarian diets seems to be associated with poor HRQOL among older people (Burkert, Muckenhuber, Großschädl, Rásky, & Freidl, 2014; Chan, von Muhlen, Kritz-Silverstein, & Barrett-Connor, 2009; Halaweh, Willen, Grimby-Ekman, & Svantesson, 2015; Saintrain & de Souza, 2012). However, there is a lack of studies at present that explore factors associated with poor HRQOL among this age group in Sri Lanka. The current study aimed to determine the level of HRQOL and its associated factors among community-dwelling older people in Sri Lanka.

2. Methods

2.1. Study population and data collection

This cross-sectional study was conducted during the period of July 2015 to May 2016 in Kandy district, Sri Lanka. The sampling method was multi-staged sampling of households from Grama Niladari (GN) divisions of seven Divisional Secretariats (GS) of the district. A total of 26 GN divisions in Kandy were selected to participate in the survey. Fifty older people from selected GN division were selected by simple random sampling using the electoral register/voters' register of GN divisions as the random number tables. The total number of older people selected was 1300. Interviewer-administered questionnaires were used to collect information on socio-demographic factors, HRQOL, physical activity and other health behaviour factors including chronic diseases (diabetes mellitus, hypertension, hypercholesterolemia), consumption of alcohol, cigarettes and vegetarian diets, loss of teeth and use of dentures. In addition, anthropometric measurements including height, weight and hand grip strength were measured.

Ethical approval to conduct the study was obtained from the University Malaya Medical Centre, Malaysia (MECID No: 20156-1437) and Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka (Ref No: 2015). Administrative permission was also obtained from all relevant authorities. Participants provided their written informed consent prior to the survey. An information sheet was enclosed in the questionnaire package to explain the purpose and procedure of the study to all participants. Confidentiality of participant information was maintained by not disclosing any personal information. All data were entered to a computer assigning a unique identification number to the participant. The original records were kept under lock and key. Only the research team members had access to data. The sample consisted of community-dwelling older people (60 years and above) who stayed more than two years in the community. We excluded participants with physical disabilities such as paralysis, severe communication disabilities, hearing loss and cognitive impairments.

2.2. Measures

2.2.1. Health-related quality of life (HRQOL)

The Sinhala version of EQ-5D-3L includes five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression (Kularatna, Whitty, Johnson, Jayasinghe, & Scuffham, 2014). It has been widely validated by previous studies in different populations, diseases, settings and languages worldwide, enabling comparison to be made and is one of the most commonly used generic questionnaires to measure HRQOL (Jansson, Nemeth, Granath, Jonsson, & Blomqvist, 2009). The participants were asked to give the current level of function in each dimension (mobility, self-care, usual activities, pain/discomfort and anxiety/depression). Level 1, 2 and 3 indicated no problem, some problems and extreme problems respectively. The HRQOL was categorized into two groups: poor and good. Good quality of life was defined as 3 or more dimensions having a score of 1 and poor quality of life was defined as 2 or less dimensions having a score 1 (Setiati, Harimurti, Dewiasty, & Istanti, 2011).

Table 1
Descriptive characteristics of study participants (N = 999).

Characteristics	Total (N = 999) n (weighted%)
Age groups	
Young old (60–69 years)	542(48.1)
Middle old (70–79 years)	375(42.3)
Very old (≥ 80 years)	81(9.5)
Gender	
Male	251(28.1)
Female	748(71.9)
Race	
Sinhalese	972(94.0)
Tamils	27(6.0)
Marital status	
Single	15(2.2)
Married	840(79.4)
Widowed/divorced	144(18.4)
Education	
No formal	76(10.2)
Primary	270(34.2)
Secondary/tertiary	653(55.6)
Income	
Below poverty line	678(73.9)
Above poverty line	321(26.1)

2.2.2. Physical activity

The International Physical Activity Questionnaire (IPAQ) addresses four domains. These are: leisure-time physical activity, domestic and gardening (yard) activity, work-related physical activity and transport-related physical activity. It allows categorical and continuous measurements of physical activity. The continuous score allows the estimation of the weekly energy expenditure expressed in MET minutes/week (Metabolic Equivalent Task-Minutes). This is obtained by multiplying the value of energy expenditure for the given physical activity in MET by the weekly frequency days per week and the time in minutes (minutes per day). MET values for vigorous physical activity, moderate physical activity and walking are 8.0, 4.0 and 3.3 respectively. The categorical score classifies individuals into three categories; 'low/inactive', 'moderately active' and 'highly active'. According to the IPAQ guidelines, participants with a total physical activity score of < 600 MET min per week were categorized as 'low/inactive' category. Those who have total physical activity scores 600–2999 MET min per week was considered as 'moderate' category and participants with ≥ 3000 MET min per week was categorized as 'high'. This questionnaire has been widely used in many studies around the world (Milanovic et al., 2014; Van Holle, De Bourdeaudhuij, Deforche, Van Cauwenberg, & Van Dyck, 2015; Vogel et al., 2009). The validity and reliability of this questionnaire for elderly people have also been reported (Tomioka, Iwamoto, Saeki, & Okamoto, 2011). IPAQ, which was validated and translated in to Sinhala was used in this study (Arambepola, 2004).

2.2.3. Socio-demographic factors and other behavioral factors

The socio-demographic factors included were: age (60–69 years) – young old, 70–79 years – middle old, ≥ 80 years – \geq very old; gender (male, female); race (Sinhale, Tamil); marital status (single, married, divorced/widowed); highest education attained (no formal, primary, secondary/tertiary); and household income (below and above poverty line – Kandy district poverty line July 2015 Rs.3909).

Multi-morbidity (diabetes mellitus, hypertension, and hypercholesterolemia), consumption of alcohol, cigarettes and vegetarian diets, loss of teeth and the use of dentures were determined with one question (yes/no).

2.2.4. Nutritional status

Nutritional status was determined by BMI and highest handgrip

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