



Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

journal homepage: www.elsevier.com/locate/archger

Diet and self-rated health among oldest-old Chinese

Ruopeng An^{a,*}, Xiaoling Xiang^b, Junyi Liu^c, Chenghua Guan^d^a Department of Kinesiology and Community Health, College of Applied Health Sciences, University of Illinois at Urbana-Champaign, Champaign, IL, USA^b School of Social Work, University of Michigan, Ann Arbor, MI, USA^c Soka University of America, Aliso Viejo, CA, USA^d Beijing Normal University, Beijing, China

ARTICLE INFO

Keywords:

Diet
Self-rated health
Oldest-old
Chinese

ABSTRACT

Introduction: Dietary behavior is a central modifiable risk factor for human health. This study examined the longitudinal relationship between dietary habits and self-rated health among the oldest-old Chinese.

Methods: Participants aged 80 years and above (N = 7273) were first interviewed in 1998 and followed in subsequent waves 2–3 years apart till 2011–2012 in the Chinese Longitudinal Healthy Longevity Survey. Cox proportional hazards regressions were performed to estimate the effects of dietary habits on poor self-rated health, adjusting for various individual characteristics.

Results: Compared to those who rarely/never consumed fruit, vegetable, meat, egg, and soybean-derived product, participants consuming such products almost every day were 28%, 20%, 32%, 16%, and 16% less likely to report poor self-rated health during follow-up, respectively. Compared to those who rarely/never consumed fruit, meat, fish, soybean-derived product, and tea, participants consuming such products occasionally were 12%, 24%, 11%, 15%, and 14% less likely to report poor self-rated health during follow-up, respectively. Compared to those who rarely/never consumed sugar, participants consuming sugar almost every day were 14% more likely to report poor self-rated health during follow-up. The effects of dietary habits on self-rated health to some extent differed by sex.

Conclusions: Oldest-old Chinese could gain health benefit from regular consumption of fruit, vegetable, meat, fish, egg, soybean-derived product, and tea; whereas their sugar consumption may need to be reduced. Future research is warranted to establish the recommended daily nutrient allowances for the oldest-old adults and better address the nutritional needs of this vulnerable population.

1. Introduction

Health is defined by the World Health Organization (WHO) as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948). This definition stresses the value of self-perceived overall health status, independent of disease diagnoses. Self-rated health measures the present general health and is typically phrased in a question such as “in general, would you rate your current health as excellent, very good, good, fair, or poor?” Self-rated health is among the most commonly assessed health perceptions in epidemiological studies (Eriksson, Undén & Elofsson, 2001). An individual’s own appraisal of his or her general health status has been extensively documented to strongly predict future morbidity and mortality, even after adjusting for various demographic, socioeconomic, and health indicators (Appels, Bosma, Grabauskas, Gostautas, & Sturmans, 1996; Idler & Angel, 1990; Kaplan & Camacho, 1983; Mossey & Shapiro, 1982).

Dietary behavior is a central modifiable risk factor for human health (Willett et al., 2006). Previous research links dietary intakes and diet quality to self-rated health in both children and adults (Collins, Young, & Hodge, 2008; O’Neil et al., 2014; Osler, Heitmann, Høidrup, Jørgensen, & Schroll, 2001; Steptoe, Perkins-Porras, Hilton, Rink, & Cappuccio, 2004). However, little is known regarding the longitudinal relationship between dietary habits and self-rated health among the oldest-old population (i.e., 80 year of age and above). In comparison to their younger counterparts (e.g., young and middle-aged adults, and older adults 65–79 years of age), dietary habits may have distinct implications on the health status of the oldest-old adults. They are particularly vulnerable to malnutrition due to their frailty (Fávaro-Moreira et al., 2016; Hickson, 2006). Their nutrient requirements are not established due to a lack of scientific evidence (World Health Organization, 2017). Because lean body mass and basal metabolic rate decline with age, their energy requirement per kilogram of body weight is reduced (St-Onge & Gallagher, 2010). In contrast, demands for

* Corresponding author at: 1206 South 4th Street, Champaign, IL, USA.
E-mail address: ran5@illinois.edu (R. An).

certain essential nutrients may rise at this later stage of life (Ahmed & Haboubi, 2010). The WHO calls for reviewing of recommended daily nutrient allowances for older adults, and effective means to address the nutritional needs of the rapidly growing older population worldwide (World Health Organization, 2017). Examining the longitudinal associations between dietary habits and self-rated health among the oldest-old adults may identify key dietary determinants of health, provide tailored dietary recommendations, and inform policy-level interventions to meet the nutritional needs of this particularly susceptible population.

This study aimed to examine the relationship between dietary intake and self-rated health using longitudinal data collected during 1998–2012 from a large-scale nationwide survey in China. Built upon previous literature while acknowledging inconsistencies in findings and/or lack of evidence, we hypothesized that consumption frequencies of fruit, vegetable, lean meat, fish, soybean-derived product, tea, and garlic would be negatively associated with poor self-rated health; whereas consumption frequencies of sugar and salt-preserved vegetable would be positively associated with poor self-rated health among the oldest-old Chinese.

2. Methods

2.1. Study setting and participants

Individual-level data came from the Chinese Longitudinal Healthy Longevity Survey (CLHLS) 1998–2012 waves. The CLHLS aims to examine the social, behavioral, biological, and environmental determinants of healthy human longevity and oldest-old mortality. The survey was conducted in a randomly selected one half of the counties and cities in China's 22 provinces, with survey areas covering approximately 85% of the Chinese population. The CLHLS attempted to interview all centenarians who voluntarily agreed to participate in the study in the selected geographical areas. For each centenarian, one near-by octogenarian (aged 80–89) and one near-by nonagenarian (aged 90–99) of pre-designated age and sex was interviewed. "Near-by" is loosely defined—it could be in the same village or street if available, or in the same town or in the same sampled county or city. The predefined age and sex, used to identify approximately equal numbers of male and female nonagenarians and octogenarians, are randomly determined based on the code numbers of the centenarians. The goal was to have comparable numbers of male and female octogenarians and nonagenarians at each age from 80 to 99. The initial survey participants aged 80 years and above in 1998, who were followed in subsequent waves 2–3 years apart till 2011–2012. The CLHLS collected information on health, socio-economic characteristics, family, lifestyle, and demographic profile of this oldest-old Chinese population. Detailed information regarding study design, questionnaires, and individual-level data can be found elsewhere (Duke University Center for the Study of Aging and Human Development, 2014).

2.2. Diet

Self-reported information on dietary intakes was collected through in-person interviews by trained research staff. The question pertaining to fruit intake read "Do you eat fresh fruit?", and the question pertaining to vegetable intake read "Do you eat fresh vegetables?" The answer choices included "almost every day", "almost every day except in winter", "occasionally", and "rarely or never". Following Shi et al. (2015), we combined the responses of "almost every day except in winter" with "almost every day" and labeled them "almost every day". The questions pertaining to meat, fish, egg, soybean-derived product (e.g., tofu), salt-preserved vegetable, sugar, tea, and garlic read, "Please tell me what other kinds of food you normally eat and how often—meat, fish, egg, food made from beans (tofu, etc.), salt-preserved vegetables, sugar, tea." The answer choices for each food type included

"almost every day", "occasionally", and "rarely or never".

2.3. Self-rated health

The CLHLS adopted the WHO's assessment tool to measure self-rated health (Subramanian, Huijts, & Avendano, 2010). The question read "In general, how would you rate your health today?" The answer choices included "very good", "good", "moderate", "poor", and "very poor". This self-rated health measure has been found to be a robust predictor of mortality and closely link to other objective health indicators (Baron-Epel, 2004; Folstein, Folstein, & McHugh, 1975; Idler & Benyamini, 1997). Following Subramanian et al. (2010), we analyzed self-rated health as a dichotomous measure of poor self-rated health, with "very good", "good" or "moderate" coded as 0 and "poor" or "very poor" coded as 1.

2.4. Other individual characteristics

We controlled both wave-invariant and wave-variant individual characteristics in the regression analysis. Wave-invariant covariates included: a dichotomous variable for sex (female, with male in the reference group); and 3 categorical variables for education level (1–5 years of education, 6–9 years of education; and 10 or more years of education, with no formal education in the reference group). Wave-variant covariates included: a continuous variable for age in years; 2 categorical variables for living arrangement (living alone, and living in a nursing home, with living together with other household members in the reference group); a dichotomous variable for place of residence (urban residence, with rural residence in the reference group); 5 categorical variables for residential regions (Northeast, East, South Central, Southwest, and Northwest, with North in the reference group); a continuous variable for body weight in kilograms; a dichotomous variable for smoking status (current smoker, with current non-smoker in the reference group); a dichotomous variable for alcohol consumption status (current drinker, with current non-drinker in the reference group); a dichotomous variable for exercise status (current exerciser, with current non-exerciser in the reference group); 2 categorical variables for chronic disease (1 chronic disease, and 2 or more chronic diseases, with no chronic disease in the reference group); and 2 categorical variables for the Katz activities of daily living (ADLs) limitation (1 ADLs limitation, and 2 or more ADLs limitations, with no ADLs limitation in the reference group). Being extensively tested and validated during the past few decades, the Katz ADLs assess study participants' functional status as a measurement of their ability to independently perform 6 functions – bathing, dressing, toileting, transferring (i.e., getting in/out of bed and chair), continence, and feeding (Zhang, 2006; Katz, 1983).

2.5. Sample selection

Among a total of 9093 CLHLS participants aged 80 years and above, 812 who had missing values in self-rated health, dietary intake, and/or other individual characteristics, and 1008 who reported "poor" or "very poor" health at the baseline interview in 1998 were excluded from the statistical analyses. This resulted in a final sample of 7273 adults who received their baseline interview in 1998 and reported "very good", "good" or "moderate" health.

2.6. Statistical analyses

Kaplan-Meier estimator was used to estimate the unadjusted survival (i.e., free from poor self-rated health) during 1998–2012 stratified by the CLHLS participants' dietary intake status (e.g., consuming fruit almost every day, occasionally, or rarely/never). Cox proportional hazards regressions were performed to examine the relationship between dietary intake and poor self-rated health during 1998–2012. The key

Download English Version:

<https://daneshyari.com/en/article/8257452>

Download Persian Version:

<https://daneshyari.com/article/8257452>

[Daneshyari.com](https://daneshyari.com)