Contents lists available at ScienceDirect

International Journal of Gerontology

journal homepage: www.ijge-online.com

Original Article

Arthritis, Other Medical Illnesses and Morale Among Chinese Nonagenarians and Centenarians

CrossMark

Yingying Cai [a, d], Han Wang [b, d], Birong Dong [c], Lei Zhang [a], Juelin Deng [c *]

[a] Department of Geriatrics, The First Affiliated Hospital of Chengdu Medical College, Chengdu, China, [b] Cardiovascular Disease Research Institute, The Third People's Hospital of Chengdu, The Second Affiliated Chengdu Clinical College of Chongqing Medical University, Chengdu, China, [c] Department of Geriatrics, West China Hospital, Sichuan University, Chengdu, China

S U M M A R Y

Background: Limited studies have explored the impact of arthritis, other medical illnesses on morale in the elderly. Our study is aim to assess the association between arthritis and morale among Chinese nonagenarians and centenarians.
Methods: This work was conducted as a cross-sectional study. The presence of arthritis, other medical illnesses was based on the subjects' report of diagnoses as told by their doctors and medical records from the investigation. The 17-item Philadelphia Geriatric Center Morale Scale (PGCMS) was used to measure morale. Low morale was defined as PGCMS score < 10.
Results: Our population included 650 unrelated Chinese nonagenarians and centenarians (67.3% women, mean age 93.5 years). The mean (SD) PGCMS score for the sample was 12.2 (2.9), and the prevalence of arthritis was 34%. After adjustment for potential confounders, multiple logistic regressions demonstrated that arthritis is associated with low morale among Chinese nonagenarians and centenarians (OR = 2.079, 95% CI 1.293 to 3.343).
Conclusion: Our study demonstrates that R1.5 arthritis may be associated with low morale among Chinese nonagenarians and centenarians.
Copyright © 2017, Taiwan Society of Geriatric Emergency & Critical Care Medicine. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

Psychological factors including psychological well-being, psychological health, and perceived quality of life have been associated with the physical health and death of the elderly.[1–3] An important aspect of psychological well-being is morale. R1.1 numerous studies have showed that the morale, measured by Philadelphia Geriatric Center Morale Scale (PGCMS), is linked to chronic illnesses, reduced depression, increased optimism, and some aspects of psychological health among elderly populations.[4,5] For example, patients with arthritis are more likely to suffer from anxiety, dissatisfaction, and loneliness, with high levels of associated mortality and suicide.[6] Likewise, patients suffered from other medical illnesses including hypertension, diabetes, and chronic kidney diseases, often have some aspects of psychological problems.[7–10] However, there are limited studies focusing on the impact of these medical illnesses including arthritis on psychological well-being, especially morale in the elderly.

Chronic medical illnesses, such as arthritis, hypertension, impaired hearing and vision, often increase with age. To date, the relationship between many medical illnesses and morale has been reported in the young old and middle-aged persons.[7–10] Recently, one cross-sectional study of 199 subjects has investigated morale of the very elderly aged 85 or over, suggesting that depression and history of previous stroke may be significantly associated with morale.[4] Given increases in median life expectancy and aging, further research is needed regarding factors correlates of morale in the very elderly population. Moreover, mortality in the elderly might tend to remove those with many medical illnesses and low morale, leaving those with one or the other condition but not both, thus removing a correlation between medical illnesses and morale.[11] Therefore, the association between arthritis, other medical illnesses and morale in the very elderly population may be different from that in the general population.

* Correspondence to: Prof Juelin Deng, Department of Geriatrics, West China Hospital, Sichuan University, 610041, 37 Guoxue Xiang, Chengdu, Sichuan, China.
E-mail address: 18030805413@163.com (J. Deng).
[d] Both Yingying Cai and Han Wang equally contribute to the article.

To the best of our knowledge, no studies have explored the impact of arthritis and other medical illnesses on morale among persons aged 90 or above. In the present study, we sought to evaluate the association of arthritis, hypertension, heart disease, peripheral atherosclerosis, previous stroke, diabetes, chronic lung disease, impaired hearing, impaired vision, cancer, fracture, urological problems, and morale among the very old people using a cohort of Chinese aged 90−108 years.

2. Methods

2.1. Subjects

The methods of this study have been reported previously.[12] In brief, as part of the Project of Longevity and Aging in Dujiangyan (PLAD), a cross-sectional study of age-related diseases was conducted in 870 long-living individuals aged 90 or more on the basis of Dujiangyan (located in Sichuan province, southwest China) 2005 census. The aims of PLAD were to assess the relationship between environment, lifestyle, genetics, longevity and age-related diseases. Trained personnel visited all study participants at their homes for data collection, biologic specimen collection, and anthropometric measurements, and sociodemographic characteristics and lifestyle habits were collected by using general questionnaires. Patients who had missing data, or were unable to complete Philadelphia Geriatric Center Morale Scale (PGCMS), Activities of Daily Living (ADL), Family Adaptation, Partnership, Growth, Affection, and Resolve (Family APGAR), and Social Support Requirement Scale (SSRS) were excluded from the study. The study population ultimately consisted of 650 long-lived subjects. Informed consents were obtained from all participants (as well as their legal proxies). The Research Ethics Committee of the Sichuan University approved the study.

2.2. Assessment of morale

R1.2 all subjects were assessed by PGCMS. The 17-item version of PGCMS was used to assess morale.[13] R1.2 the PGCMS has cross-cultural validity and has been used with Chinese elders before.[14] It is applicable among people in the community, institutions and the suffering memory loss. The total PGCMS score ranges from 0 to 17, where scores 0−9 indicate low morale, 10−17 middle to high morale. Its three subscales (score ranges in parentheses) are: agitation (0−6), attitude toward own aging (0−5), lonely dissatisfaction (0−6). Test−retest associations have ranged from r coefficients of 0.80 after 1 week, to 0.91 after 5 weeks and 0.75 after 3 months.

2.3. Establishment of arthritis and other medical illnesses

All subjects were asked the question "Have you ever been told by a doctor that you have arthritis?" For the purposes of this study, those who answered positively to this question were considered to have arthritis. This is a validated question used in the Behavioral Risk Factor Surveillance System telephone survey performed in the USA to determine physician-diagnosed arthritis.[15,16] The presence or absence of other medical illnesses was based on the subjects' report of diagnoses as told by their doctors and medical records from the investigation. These diseases included hypertension, heart disease, peripheral atherosclerosis, previous stroke, diabetes, chronic lung disease, chronic kidney disease, impaired hearing, impaired vision, cancer, fracture and urological problems. For example, diabetes was defined by history, or fasting blood glucose ≥ 7.0 mmol/L; Estimated glomerular filtration rate (eGFR) was calculated according to the formula from the Chinese Modification of Diet in Renal Disease (CMDRD), which is based on baseline age, gender, race, and serum creatinine concentration,[17] and CKD

was defined as an eGFR < 60 ml/min per 1.73 m^2. In addition, a specialist in geriatric medicine also evaluated the documentation of the diagnoses, drug treatments, assessments and measurements for completion of the final diagnoses.

2.4. Assessment of covariates

Trained study personnel made the face to face interview, and subjects were underwent a standardized enquiry based on the prepared questionnaire for the record. Other information, such as age, gender, education, temperament, independent income, lost spouse, and living alone, were collected. R2.1The temperament is divided into three style including introversion, general and extroversion.

The ADL (Activity of Daily Life) is a measure of dependency on others for physical needs and functional status.[18] It has 14 items which comprise two scales: the physical self-maintenance scale (PSMS) (range 0−24) and instrumental activities of daily life scale (IADL) (range 0−32). PSMS assesses the following six items: bathing, dressing, toileting, grooming, physical ambulation, and feeding. IADL assesses the ability to use telephones and public transportation, to go shopping, to prepare food, and the ability to carry out other daily tasks such as house keeping, laundry, handling own medications, and finances. The higher the score, the less capable the subject is at performing everyday tasks. Findings with these measures in elderly people, including reliability and validity data, have been published elsewhere.[19]

Social support was measured with Chinese Social support requirement scale (CSSRS), which has scales that measure objective support, subjective support, and support utilization. Higher scores indicate greater social support outside the participant's family. The test−retest reliability of this Chinese adaptation is 0.92, and the internal consistency ranges between 0.89 ± 0.94.[20]

The Family APGAR questionnaire designed by Smilkstein (University of Washington, 1978) is a 5-item scale that was used to assess subjective satisfaction with care received from the participants' family.[21] Total scores range from 5 to 20, with higher scores indicating greater satisfaction with family support.

2.5. Statistical analysis

Continuous variables, such as age, score on ADL, APGAR, and SSRS, are expressed as mean ± standard deviation (SD). Gender, education, temperament, independent income, living alone, lost spouse, and the presentence of arthritis and other medical illnesses are presented as dichotomous variables. Demographic and clinical characteristics were compared using unpaired Student t test for continuous variables, and X^2 test/Fisher's exact test for dichotomous variables. R1.3 the subjects were divided into two groups based on morale score (0−9 scores indicate low morale and 10−17 indicate high morale). Morale is the independent factor. Binary logistic regression was used to examine the independent association between arthritis, other medical illnesses and morale after controlling for age, gender, education, temperature, living alone, lost spouse, independent income, and scores on ADL/APGAR/SSRS. Statistical analyses were performed in SPSS 16.0 software package (SPSS Institute Inc., Chicago, USA). All statistical assessments were two-sided using a significance level of 0.05.

3. Results

3.1. Baseline characteristics

The characteristics of subjects included in the study are summarized in Table 1. Among the 650 subjects who included in this