Archives of Gerontology and Geriatrics 65 (2016) 63–69

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

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

Factors associated with risk for assisted living among community-dwelling older Japanese

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ARTICLE INFO

Article history:
Received 23 November 2015
Received in revised form 23 February 2016
Accepted 7 March 2016
Available online 8 March 2016

Keywords:
Assisted living
Community-dwelling older people
Urban city
Social factor

ABSTRACT

Objectives: To clarify the factors associated with risk for assisted living among community-dwelling older people, we conducted a large-scale survey in an urban city in Japan.
Design: Population-based cross-sectional study.
Setting: A mid-sized urban city in western Japan with a population of approximately 410,000.
Participants: Nondisabled and nondemented community-dwelling older people (≥65 years).
Measurements: A self-administered postal questionnaire, including a health checklist for the screening of older people at high risk for assisted living, as well as demographic/sociodemographic questions on sex, age, present illness, living alone, duration of residence within the current city, community participation, and employment status, was distributed.
Results: There were 41,796 returned questionnaires (response rate: 73.8%, average age: 72.0). Participants who were at high risk for assisted living accounted for 25.2%. The independent factors associated with risk for men and women were higher age, present illness, lack of community participation, unemployment, and <20 years of residence. Living alone was a significant factor for men, whereas it was insignificant among women. The types of illnesses among people at risk were different between men and women.
Conclusion: Higher age, present illness, and several social factors were independently associated with high-risk status for assisted living in the large-scale whole community survey, and there was a sex difference. Our results may provide basic information for the further application of effective preventive intervention in the community.

1. Introduction

Japan has been experiencing a rapidly aging society that is unmatched in the world. The proportion of people aged ≥65 years in Japan is the highest in the world (25.9% in 2014); the life expectancy at birth has lengthened and is highest among Japanese women in the world (women: 87, men: 80) (World Health Organization, 2015; Cabinet Office, Government of Japan, 2015). However, extended survival in older people is not always accompanied by good health; it has been inevitably associated with greater numbers of disabled older people who need additional support in daily life (Ho, Woo, Yuen, Sham, & Chan, 1997). The percentage of the old–old population (aged ≥75 years), which contains more frail or lower functioning people than the young-old population (aged 65–74 years), is growing rapidly and exceeded 12.3% of the Japanese national population in 2014 (Japanese National Institute of Population and Social Security Research, 2015). Frailty or lower function results in increasing dependency and an overall reduction in the quality of life. Therefore, preventive health care should include the prevention of not only disease but also its earlier phases, such as decline in function and frailty, in order to prevent older people from requiring assisted living and to establish a healthier aged society in which all people can spend healthy, satisfying lives (Ho et al., 1997; Kabayama, Kamide, Sakakibara, & Hayakawa, 2014). Given this background, the Japanese Ministry of Health, Labour and Welfare (MHLW) has started to emphasize preventive care for the older people at high risk for assisted living (Arai et al., 2012). The MHLW appointed local governments to manage preventive care for functional decline in older people at high risk for assisted living by focusing on the improvement of physical function, cognitive function, and malnutrition status. To identify community-dwelling older high-risk persons, many local governments have used a basic screening health checklist called "Kihon Checklist" (KCL) (Fig. 1).

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http://dx.doi.org/10.1016/j.archger.2016.03.005
0167-4943/

The KCL was proposed by the MHLW as a valid and low-cost assessment tool (Sewo Sampaio, Sampaio, Yamada, Ogita, & Arai, 2014; Fried et al., 2001; Ogawa et al., 2011; Umegaki et al., 2013). The KCL has shown good concurrent validity against Fried's criteria for evaluating frailty (Ogawa et al., 2011). To develop an effective preventive intervention strategy, it is important to determine the characteristics of those who are at high risk for assisted living in one entire city. In recent decades, studies have reported various factors that have contributed to the occurrence of disability, mortality and frailty (Crimmins & Sànchez, 2011; Crimmins & Saito, 2001; Mattos, Carmo, Santiago, & Luz, 2014); however, few studies have investigated them in a whole city setting. It is important for a prevention study to select participants from the whole community's healthy population for the further application of community intervention, instead of gathering participants from limited settings. Many researchers assume that the prevalence of frailty is associated with older age, sex (women), the existence of chronic disease, nutritional status, muscle strength, balance function, educational background, and social interaction; yet, they have not reached a consensus, especially on social factors, because of the complex background and elusive definition of frail older persons (Avila-Funes et al., 2008; Collard, Boter, Schoevers, & Oude Voshaar, 2012; Moriya, Murata, Kimura, Inoue, & Miura, 2013; Nishi et al., 2012; Stuck et al., 1999). To improve the quality and efficiency of preventive intervention in the community, it is critical to clarify the factors associated with risk for assisted living, especially paying attention to both individual biological factors and social factors. Therefore, we conducted a large-scale survey targeting the entire population of older people in one urban city to investigate the factors associated with high-risk status for assisted living.

2. Design and methods

2.1. Participants and procedure

This was a population-based cross-sectional large-scale mail survey conducted between 2012 and 2013. A local government (H-City) in Osaka Prefecture, which is a mid-sized urban city in western Japan with a population of approximately 410,000,

Basic Health Checklist ("Kihon Check List") for people aged 65 years and older

Number		Questionnaire	Circle either one.			
1. Daily life	1	Do you go out by bus or train by yourself?	0	Yes	1	No
	2	Do you go shopping to buy daily necessities by yourself?	0	Yes	1	No
	3	Do you manage your own deposits and savings at the bank?	0	Yes	1	No
	4	Do you sometimes visit your friends?	0	Yes	1	No
	5	Do you turn to your family or friends for advice?	0	Yes	1	No
2. Physical strength	6	Do you normally climb stairs without using handrail or wall for support?	0	Yes	1	No
	7	Do you normally stand up from a chair without any aids?	0	Yes	1	No
	8	Do you normally walk continuously for 15 minutes?	0	Yes	1	No
	9	Have you experienced a fall in the past year?	1	Yes	0	No
	10	Do you have a fear of falling while walking?	1	Yes	0	No
3. Nutritional status	11	Have you lost 2kg or more in the past 6 months?	1	Yes	0	No
	12	Height _____ cm; Weight _____ kg (BMI ____) If BMI is less than 18.5, this item is scored.				
4. Oral function	13	Do you have any difficulties eating tough foods compared to 6 months ago?	1	Yes	0	No
	14	Have you choked on your tea or soup recently?	1	Yes	0	No
	15	Do you often experience having a dry mouth?	1	Yes	0	No
5. Houseboundness	16	Do you go out at least once a week?	0	Yes	1	No
	17	Do you go out less frequently compared to last year?	1	Yes	0	No
6. Cognitive function	18	Do your family or your friends point out your memory loss?	1	Yes	0	No
	19	Do you make a call by looking up phone numbers?	1	Yes	0	No
	20	Do you find yourself not knowing today's date?	1	Yes	0	No

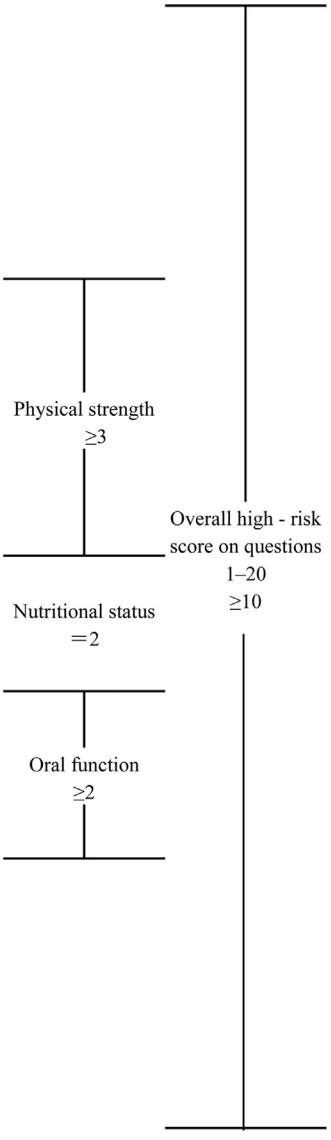

Fig. 1. Basic health checklist for screening older people at high risk for assisted living.