

Asian Journal of
**HUMAN
SERVICES**

Printed 2017.0430 ISSN2188-059X
Published by Asian Society of Human Services

April 2017
VOL. **12**



ORIGINAL ARTICLE

Associations among the Nutritional Status and Mental/Physical Functions of Care-dependent Individuals Living in Residential Homes for the Elderly

Yuko FUJIO Hiromi SHIMADA Tomoko SUGIYAMA Nobuhiro SATO

Department of Gerontology, Juntendo University, Japan

ABSTRACT

This study examined the nutritional status and mental/physical functions of care-dependent individuals living in residential homes for the elderly, focusing on malnutrition as a leading cause of the progression of care dependency, to clarify the associations among them. A status survey was conducted, involving 147 care-dependent individuals living in 3 residential homes with care services for the elderly in Tokyo and Kanagawa. When focusing on physical functions, the Alb level was higher among residents exhibiting higher total ADL20 scores; based on this, approaches to prevent decreases in the nutritional status may be essential for the maintenance of ADL independence. This tendency was particularly marked when examining scores from the following ADL20 subscales: <indoor walking>, <ascending/descending stairs>, and <outdoor walking>, as the Alb level was higher among those who were able to perform these activities more independently. Regarding cognitive functions, the Alb level was lower when the total CDR score and scores from the following subscales indicated higher severity: <memory>, <orientation>, <judgment>, <social adaptation>, <family situation>, and <care situation>. This highlights the necessity of continuous nutritional management as a preventive measure against dementia. This study is suggesting the necessity of performing nutritional management, such as maintaining and restoring a favorable nutritional status in residential homes for the elderly lead a healthy and mentally and physically independent life.

<Key-words>

nutritional status, mental/physical functions, residential homes for the elderly

yfujio@juntendo.ac.jp (Yuko FUJIO; Japan)

Asian J Human Services, 2017, 12:1-7. © 2017 Asian Society of Human Services

Received
December 12, 2016

Revised
February 23, 2017

Accepted
February 25, 2017

Published
April 30, 2017

I. Introduction

In Japan, residential homes with and without care services are currently available as private homes for the elderly. When using home care services based on the Long-term Care Insurance System, subsidies are allocated, corresponding to the category 'daily care for specific facility users'. In recent years, while delays in the construction of Long-term Care Insurance-covered facilities have been noted, the numbers of private (residential) homes for the elderly and their residents have steadily increased; the values, which were 276 and 30,792, respectively, in 2008, increased to 7,563 and 315,678, respectively, in 2013. On comparing the national mean Care Grade and that of insurance-covered facility users, the former is still lower, at 2.2, but grades 4 and 5 account for more than 25%, revealing the increasing demand of the elderly requiring care for such homes.

Residential homes for the elderly are regarded as new locations for the elderly to relocate from their long-lived-in homes (Toyama, 2014). Furthermore, it is expected that the homes will accommodate needs related to the comprehensive community-based care system as key to social insurance system reform to prepare for 2025, when all baby-boomers will be aged 75 or over. In such a situation, care approaches in these homes should be reviewed, covering the concept of 'private but unaccustomed homes, in addition to that of 'facilities'. Although some studies examined multi-professional collaboration in residential homes with care services for the elderly, involving their staff (Kakinuma, 2013), the actual situation of such homes with or without care services, including residents' conditions and the contents of care, has yet to be clarified. Furthermore, as the mean Care Grade on admission to residential homes for the elderly is lower than that in insurance-covered facilities, the length of residence in the former tends to be long, and a large number of the elderly chose to stay in such homes until the end of their lives. In line with this, care for residents showing steadily progressing age-related changes in their conditions, leading to the necessity of leading a daily life in the presence of multiple diseases occurring with time, or coping with cognitive impairment, is needed in these homes.

Malnutrition is regarded as a leading cause of the progression of care dependency. When the Long-Term Care Insurance Act was revised, nutritional management was added as a category of business activities to prevent care-dependency. According to an estimate based on the results of comprehensive evaluation of the outcomes of such activities (Tsuji, Ueda, Okubo et al., 2009) approximately 30% of elderly individuals with an increased risk of care-dependency require nutritional improvement.

To examine the nutritional status and mental/physical functions of care-dependent individuals living in residential homes with care services for the elderly, focusing on the former as a factor associated with care dependency and its progression, and to clarify the association between the former and latter.

II. Methods

1. Study design

A quantitative, descriptive study (status survey)

2. Study period

November 2015 (30 days)

3. Subjects

Care-dependent individuals living in residential homes with care services for the elderly

4. Study items

- 1) Basic attributes : Sex , Age
- 2) Care grade
- 3) Nutritional status : dietary intake, albumin (Alb) level
- 4) Physical functions : Levels of ADL Independence of the Elderly with Disabilities (J : outdoor walking level , A : indoor walking level , B : wheelchair level , C : bed level , ADL20 (Activities of Daily Living 20)
- 5) Mental functions : Levels of ADL Independence of the Elderly with Dementia (I : suspect level , II : attention level , III : sometimes care level , IV : all day care level , M : hospital level) , CDR (Clinical Dementia Rating , CDR0.5 : suspected dementia , CDR1 : mild dementia , CDR2 : moderate dementia , CDR3 : severe dementia)
- 6) Status of hospital visits

5. Data collection

A questionnaire survey was conducted, asking home staff to provide copies of data related to residents.

6. Data analysis

The associations among the nutritional status and mental/physical functions of care-dependent residents were analyzed using SPSS Ver.22.0 as statistical analysis software.

III. Ethical considerations

This study was conducted with the approval of the Ethics Committee of the Faculty of Health Care and Nursing, Juntendo University. Questionnaire responses were transcribed by home staff. In the process of transcription, the data were converted into IDs as a measure to prevent the identification of individuals.

IV. Results

Data related to 147 care-dependent individuals living in 3 residential homes with care services for the elderly in Tokyo and Kanagawa. There were 28 (19.0%) males and 119 (81.0%) females, with a mean age of 88.7±5.5. Their mean Care Grade was 3.13±1.64. The mean dietary intakes were 1230.0±304.4kcal. The mean Alb levels were 3.6±0.5g/dl. Ranks based on the Degrees of ADL Independence of the Elderly with Disabilities varied as follows: J: 6(4%), A: 74(50%), B: 51(35%), and C: 16(11%). The mean ADL20 score was 20.5±15.9/80, revealing their poor ADL independence. The results of the Degrees of ADL Independence of the Elderly with Dementia were as follows: I: 21(14%), IIa: 29(20%), IIb: 37(25%), IIIa: 21(14%), IV:16 (11%),M:4(3%). On assessment using the CDR, 24% of all cases were classified as mild (CDR-1) and severe (CDR-3) dementia, followed by suspected (CDR-0.5; 23%) and moderate (CDR-2; 20%) dementia; all severities of dementia were similarly observed (Table 1).

<Table 1> Basic Attributes of Care-dependent Elderly (n=147)

Sex	Males	28(19%)
	Females	119(81%)
Age		88.7±5.5
Care grade		3.13±1.64
Dietary intakes		1230.0±304.4kcal
Alb levels		3.6±0.5g/dl
Levels of ADL Independence of the Elderly with Disabilities	J	6(4%)
	A	74(50%)
	B	51(35%)
	C	16(11%)
ADL20 score		20.5±15.9/80
Levels of ADL Independence of the Elderly with Dementia	I	21(14%)
	II a	29(20%)
	II b	37(25%)
	IIIa	21(14%)
	IIIb	19(13%)
	IV	16(11%)
CDR	M	4(3%)
	CDR-0.5	34(23%)
	CDR-1	35(24%)
	CDR-2	29(20%)
	CDR-3	34(23%)

<Table 3> Results of Multiple Regression Analysis of the Alb Level and
Mental/Physical Functions (n=147)

	Standardizing coefficient
CDR: <memory>	-.216*
ADL20: <indoor walking>	.177*
R ²	.102
Adjusted R ²	.089
F-value	8.080**
df	2

* p < 0.05 ** p < 0.01

Stepwise method

V. Discussion

On analyzing the associations among the nutritional status and mental/physical functions of care-dependent individuals living in residential homes for the elderly, with the Alb level as an index for the former, the level was lower among older residents, indicating the necessity of continuous nutritional management for individuals living for a long period in residential homes for the elderly.

When focusing on physical functions, the Alb level was higher among residents exhibiting higher total ADL20 scores; based on this, approaches to prevent decreases in the nutritional status may be essential for the maintenance of ADL independence. This tendency was particularly marked when examining scores from the following ADL20 subscales: <indoor walking>, <ascending/descending stairs>, and <outdoor walking>, as the Alb level was higher among those who were able to perform these activities more independently. This is consistent with the results of the researchers' previous study, in which the mobility and walking ability were suggested to influence the Alb level (Fujio, Ogawa, Inoue et al., 2016).

Regarding cognitive functions, the Alb level was lower when the total CDR score and scores from the following subscales indicated higher severity: <memory>, <orientation>, <judgment>, <social adaptation>, <family situation>, and <care situation>. This highlights the necessity of continuous nutritional management as a preventive measure against dementia. Approaches for appropriate hydration, nutrition, activities, and bowel movements have also been shown to be important as a part of basic care for individuals with dementia; in a study, symptoms of dementia markedly improved through workshops for the families of patients with dementia, adopting such basic care approaches (Kodaira & Takeuchi, 2015).

It was also revealed that residents with lower Alb levels visited hospitals more regularly, indicating the presence of some disease.

In the researchers' previous study, both medical and welfare service providers' awareness of care-dependent individuals' nutritional status was poor (Fujio & Kodaira, 2014), indicating the necessity of nutritional management may be indispensable.

VI. Conclusion

This study is suggesting the necessity of performing nutritional management, such as maintaining and restoring a favorable nutritional status in residential homes for the elderly lead a healthy and mentally and physically independent life.

References

- 1) Tadashi TOYAMA (2014) Private but Unfamiliar Homes - Theory of Living Spaces for the Elderly - . Igaku-Shoin Ltd.
- 2) Tomohiro KAKINUMA (2013-2014) A Report on the Evaluation of Multi-professional Collaboration in Residential Homes with Care Services for the Elderly. FY 2013 - FY 2014 Grants-in-Aid for Scientific Research (multi-year fund), Grant-in-Aid for Young Scientists (B)
- 3) Ichiro TSUJI, Koichiro UEDA, Ichiro OKUBO, Yutaka ONO, Satoko OHARA, Shuichi OBUCHI et al. (2009) Comprehensive assessment and analysis of the effects of the Projects to Prevent the Need for Care. A Grant-in-Aid for Health Care Promotion Services for the Elderly (Promotion of Health and Health Care for the Elderly).
- 4) Yuko FUJIO, Noriko OGAWA, Yoshiyuki INOUE & Takahito TAKEUCHI (2016) Indices of Undernutrition in the Care-dependent Elderly, *Asian Journal of Human Services*,10,16-24.
- 5) Megumi KODAIRA & Takahito TAKEUCHI (2015) Provision of a family-care seminar for 64 demented individuals using Takeuchi's theory: A family-led dementia-alleviation program, *Asian Journal of Human Service*, 9, 1-16.
- 6) Yuko FUJIO & Megumi KODAIRA (2014) Care Service Staff's Awareness of the Management of Undernutrition in Japan, *Asian Journal of Human Services*, 7, 51-59.

- Editorial Board -

Editor-in-Chief	Masahiro KOHZUKI	Tohoku University (Japan)
Executive Editors	Injae LEE	Hanshin University (Korea)
	Satoru EBIHARA	Toho University (Japan)

Atsushi TANAKA
University of the Ryukyus (Japan)

Changwan HAN
University of the Ryukyus (Japan)

Guo QI
Tianjin Medical University (China)

Hideyuki OKUZUMI
Tokyo Gakugei University (Japan)

Hsintai LIN
National Taiwan Normal University (Taiwan)

Inkeri Ruokonen
University of Helsinki (Finland)

Jaewon LEE
Pukyong National University (Korea)

Jenyi LI
Nanyang Technological University (Singapore)

Jung Won Sonn
University College London (UK)

Kagari SHIBAZAKI
University of Huddersfield (UK)

Nigel A Marshall
University of Sussex (UK)

Osamu ITO
Tohoku University (Japan)

Taku HARADA
Tohoku University (Japan)

Petr Dobšák
Masaryk University (Czech)

Sunwoo LEE
Inje University (Korea)

Taekyun YOO
Soongsil University (Korea)

Youngchoul KIM
University of Evansville (USA)

Yuichiro HARUNA
National Institute of Vocational Rehabilitation (Japan)

Zhongli JIANG
First Affiliated Hospital of Nanjing Medical
University (China)

Editorial Staff

- Editorial Assistants	Aiko KOHARA	University of the Ryukyus (Japan)
	Marcus Eije Zantere	University of Gothenburg (Sweden)
	Moonjung KIM	Ewha Womans University (Korea)
	Natsuki YANO	Tohoku University (Japan)

Asian Journal of Human Services

VOL.12 April 2017

© 2017 Asian Society of Human Services

Editor-in-Chief Masahiro KOHZUKI

Presidents Masahiro KOHZUKI • Sunwoo LEE

Publisher Asian Society of Human Services

Faculty of Education, University of the Ryukyus, 1 Senbaru, Nishihara, Nakagami, Okinawa, Japan
FAX: +81-098-895-8420 E-mail: ash201091@gmail.com

Production Asian Society of Human Services Press

Faculty of Education, University of the Ryukyus, 1 Senbaru, Nishihara, Nakagami, Okinawa, Japan
FAX: +81-098-895-8420 E-mail: ash201091@gmail.com

Asian Journal of Human Services

VOL.12 April 2017

CONTENTS

ORIGINAL ARTICLES

Associations among the Nutritional Status and Mental/Physical Functions of Care-dependent Individuals Living in Residential Homes for the Elderly

Yuko FUJIO, et al. 1

A Survey on International Nursing Education of National Universities in Japan

Akina ISHIBASHI, et al. 8

Academic Qualification and Job Market Placement: A Bangladesh Study

Rajib Ahmed FAISAL, 17

The Influence of Living Environment on Independence level of Special Nursing Home

Yukie ENOMOTO, et al. 30

Encouraging Exercise Participation amongst UK South Asians:
The Case of a Community Gym

Nigel KING, et al. 46

Promoting Wellbeing:
Amylase as an Indication of Changes in Stress level in People with Intellectual Disabilities

Nigel A. MARSHALL, et al. 60

Published by
Asian Society of Human Services
Okinawa, Japan