



Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en



Research paper

Swallowing difficulty and nutrient intakes among residents in assisted living facilities in Helsinki



E. Lindroos^{a,b,*}, S. Jyväkorpi^a, H. Soini^c, S. Muurinen^a, R.K.T. Saarela^d, K.H. Pitkala^a, M.H. Suominen^a

^a University of Helsinki, Department of General Practice and Helsinki University Hospital, Unit of Primary Health Care, Haartmaninkatu 8, 3.krs PL 63 Biomedicum Helsinki, 00014 Helsingin yliopisto, Finland

^b Metropolia, University of Applied Sciences, Department of Health Promotion, Mannerheimintie 172, 00300 Helsinki, Finland

^c City of Helsinki, Department of Social Services and Health Care, Developmental and Operational Support, Toinen linja 4 A 00530 Helsinki PL 6000, 00099 Helsingin kaupunki, Finland

^d City of Helsinki, Department of Social Services and Health Care, Oral Health Care, Toinen linja 4 A 00530 Helsinki PL 6000, 00099 Helsingin kaupunki, Finland

ARTICLE INFO

Article history:

Received 23 February 2017
 Accepted 14 April 2017
 Available online 11 May 2017

Keywords:

Swallowing difficulty
 Dysphagia
 Malnutrition
 Nutrient deficiency
 Morbidity
 Mortality

ABSTRACT

Background: Swallowing difficulty (SWD) commonly occurs and is associated with malnutrition in old age. Less is known of how SWD is associated with various nutrient intakes.

Objectives: To examine how SWD among residents in assisted living facilities.

Materials and methods: In this cross-sectional study, we examined 345 residents in Helsinki in 2007. Detailed energy, protein and nutrient intakes were calculated from 1-day food diaries and compared with the Nordic Nutrition Recommendations (NNRs) as a measure of dietary adequacy. Swallowing was assessed by the closest nurse knowing the resident well. Nutritional status was assessed using the Mini-Nutritional Assessment (MNA).

Results: Of the participants, 14% ($n = 48$) suffered from SWD, often had prior stroke, increased comorbidities and lower body-mass index. A larger proportion of residents with SWD consumed oral nutritional supplements. The MNA showed that over 52% of residents with SWD were malnourished, whereas the respective figure was 17% among residents without SWD. A large proportion of the study population had lower than recommended intakes of energy, protein and micronutrients. However, those with SWD differed significantly from those without only in higher protein and lower zinc and folic acid intakes.

Conclusion: Although malnutrition was more common among those with SWD than those without, the daily intakes of energy, protein and micronutrients were similar in these groups, highlighting that the risk of malnutrition and low nutrient intakes commonly occurred in both groups of residents in assisted living facilities.

© 2017 Elsevier Masson SAS and European Union Geriatric Medicine Society. All rights reserved.

1. Introduction

Swallowing difficulty (SWD) or dysphagia is a common health problem in old age [1–3]. SWD complicates eating and may lead to inability to safely swallow liquid or solid foods [4]. SWD may also reduce appetite, due to restrictions in finding adequate foods or in eating safely. This may lead to decrease in food intake, difficulties in food selection and prolonged duration of eating or more dependence on feeding [5,6]. SWD is often associated with malnutrition and risk of malnutrition [2,7,8], which may in turn lead to poor quality of life and increased morbidity [9,10]. The

recent European Union Geriatric Medicine Society (EUGMS) white paper defined SWD as a geriatric syndrome [3].

SWD [3] and malnutrition [11,12] are particularly prevalent in long-term facilities. Among the general population, the prevalence of SWD ranges from 2% to 16% [3]; however, in institutional settings, it may become as high as 40% [3]. Several old-age diseases, such as stroke, Parkinson's disease and dementia may predispose to SWD [2,3,13,14]. Malnutrition and SWD frequently coexist and are associated with poor outcomes following stroke [2,15,16], Parkinson's disease [17] and dementia [2]. Complications commonly associated with SWD include malnutrition, dehydration and respiratory infections [3]. SWD is also associated with frailty, multimorbidity, disability and polypharmacy [3]. Although SWD is known to be associated with malnutrition, less is known about how swallowing problems are related to nutrient intakes. Thus, do

* Corresponding author. University of Helsinki, Department of General Practice and Helsinki University Hospital, Unit of Primary Health Care, Finland.
 E-mail address: eeva.lindroos@metropolia.fi (E. Lindroos).

those with SWD have problems in daily energy and nutrient intakes? Is SWD addressed in their nutritional care? The aim of our study was to determine how SWD is associated with resident characteristics, their nutritional status and nutrient intakes in assisted living facilities in Helsinki, Finland.

2. Materials and methods

This study was performed in assisted living facilities providing round-the-clock service in Helsinki. These facilities resemble traditional nursing homes, but are more homelike. There are two types of dwellings in assisted living facilities. Those persons having severe cognitive decline live in-group homes, while those cognitively capable may have detached apartments. However, a registered nurse and other caregivers offer round-the-clock care in both settings. In March 2007, the data were collected by registered nurses familiar to the residents. They interviewed, observed and assessed each resident and completed questionnaire. Each nurse was trained thoroughly in performing the assessments and interviews. All participants underwent personal interviews, gathering information with the structured questionnaire on demographic characteristics, functional status and diseases. The participants of the present study are a subsample of a larger study assessing nutritional status and its associated factors in institutional settings [18].

To assess the participants' nutritional status, the nurses were trained using the Mini-Nutritional Assessment (MNA) (revision 2006) [19]. The MNA is a widely used, simple and diagnostically standard screening tool for assessing malnutrition in older persons. A well-validated MNA test yields a maximum of 30 points, with < 17 points indicating malnutrition, 17–23.5 points a risk for malnutrition and > 23.5 points favourable nutritional status. In addition, each resident's body-mass index (BMI) was calculated by dividing his/her weight in kilograms by the square of the height in metres.

In addition, the nurses gathered the residents' nutrient intakes by completing their 1-day food diaries, under the guidance of a nutritionist (MHS). The participants' energy, protein and nutrient intakes were calculated from these food diaries. The food records were analyzed, using the Aivo program (www.aivo.fi). The nutritionist entered the food diets into the Aivo program under with the supervision of nutrition investigator (MHS). All data were checked and cross-checked.

Age- and sex-specific dietary reference intakes (RIs) [20] were used as reference values for comparing the mean protein, micronutrient, polyunsaturated fatty acids (PUFA) and fibre intakes (Table 1) among the elderly population. Dietary energy was compared with National Nutritional Council's Recommendation [21]. Detailed nutrient intakes were compared with reference intakes (RI) of the Nordic Nutrition Recommendations (NNRs) as a measure of dietary adequacy. For observing inadequate protein intake, the cut-off point per day was 1.2 g/kg bodyweight (BW) [22]. We also used the estimated average requirements (ARs) [20] as reference values for inadequate intake of micronutrients, but for comparison of energy, protein, fibre and polyunsaturated fatty acids (PUFA) we only used RIs, because ARs were not available for them [20].

Swallowing problems were charted with a yes/no question evaluated by trained nurses most familiar to the residents. The nurses were instructed to observe how the resident swallowed during eating or feeding. We did not use specific tests for swallowing.

The residents' active medical diagnoses were retrieved from their medical records. We used the Charlson comorbidity index [23] to evaluate the burden of comorbidity for each resident. With this index, the number and seriousness of the residents' comorbid diseases were taken into account to describe their comorbidities.

The Clinical Dementia Rating (CDR) "memory" item was used to evaluate the severity of cognitive impairment. The score in the CDR (0 = no memory problems, 0.5 = possible memory problems, 1 = mild problems, 2 = moderate problems or 3 = severe problems)

Table 1
Characteristics of participants divided according to swallowing difficulty.

Variables	Swallowing difficulty (n = 48)	No swallowing difficulty (n = 297)	P-value ^a
Age, years, mean (SD)	84.4 (6.4)	83.1 (7.4)	0.25
Females, %	83.3	83.5	0.98
Memory CDR, %			0.12
0–0.5	10.7	19.3	
1	8.5	15.0	
2–3	80.9	65.7	
Dependent in all ADL, %	85.1	43.2	< 0.001
Charlson, mean (SD)	2.8 (1.6)	2.3 (1.4)	0.042
Dementia, %	85.4	77.4	0.21
Parkinson's disease, %	2.1	6.1	0.26
Prior stroke, %	37.5	21.9	0.019
Chronic or recurrent infections, %	12.5	5.7	0.082
Able to walk outside, %	27.1	43.4	0.032
BMI, mean kg/m ² (SD)	22.3 (4.3)	25.9 (4.8)	< 0.001
MNA			< 0.001
< 17	52.1	16.8	
17–23.5	41.7	67.7	
> 23.5	6.3	15.5	
Symptoms in mouth, %			
Chewing problems	66.7	19.2	< 0.001
Dry mouth	18.8	16.8	0.74
Eat very little or little, %	29.2	22.6	0.31
Eats fluidly or puree food, %	47.9	7.7	< 0.001
Consumes fluids < 5 cups per day, %	64.6	37.0	< 0.001
Use of oral nutritional supplements, %	12.5	3.4	0.005
One year mortality, %	29.2	16.2	0.029

SD: standard deviation; CDR: Clinical Dementia Rating scale, "memory" item (Hughes et al., 1982); ADL: activities of daily living, measured by "personal care" item from CDR (Clinical Dementia Rating Scale score) "memory" item (Hughes et al., 1982); Charlson comorbidity index (Charlson et al., 1987); BMI: Body Mass Index; MNA Mini Nutritional Assessment (Guigoz et al., 1997).

^a Differences between groups were tested using the χ^2 test for categorical variables and with the Mann–Whitney U-test for non-normally distributed continuous variables.

Download English Version:

<https://daneshyari.com/en/article/5662518>

Download Persian Version:

<https://daneshyari.com/article/5662518>

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