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Original article

Individually prescribed diet is fundamental to optimize nutritional treatment in geriatric patients

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SUMMARY

Background & aims: Malnutrition is a well-recognized problem in geriatric patients. Individually prescribed diet is fundamental to optimize nutritional treatment in geriatric patients. The objective of this study was to investigate routines regarding dietary prescriptions and monitoring of food intake in geriatric patients and to see how well the prescribed diet conforms to the patients' nutritional status and ability to eat. A further aim was to identify the most common reasons and factors interacting with patients not finishing a complete meal.

Methods: This study combines two methods using both qualitative and quantitative analysis. Patients ($n = 43$; 82.5 ± 7.5 yrs; 60% females) at four geriatric wards performed a two-day dietary record, assisted by a dietician. Nurses and assistant nurses at each ward participated in a semi-structured interview regarding prescription of diets and portion size for the patients.

Results: The prescribed diet differed significantly ($P < 0.01$) from a diet based upon the patient's nutritional status and ability to eat. Only 30% of the patients were prescribed an energy-enriched diet in contrast to 60% that was in need of it. The most common reason for not finishing the meal was lack of appetite. Diet prescription for the patient was based upon information about eating difficulties identified in the Mini Nutritional Assessment-Short Form (MNA-SF) at admission and the type of diet that was prescribed on a previous ward. Monitoring of the patients' food intake was described as a continuous process discussed daily between the staff.

Conclusion: Patients' nutritional status and to what extent they were able to eat a complete meal was not routinely considered when prescribing food and monitoring food intake in this study. By making use of this information the diet could be tailored to the patients' needs, thereby improving their nutritional treatment.

1. Introduction

As part of normal aging, there are a variety of physiological changes that can affect a person's nutritional status negatively [1–3]. Taste, odour changes and impaired oral function can result in decreased appetite and in chewing and swallowing difficulties as well as reduced energy intake [1–3]. Further, many older people suffer from chronic diseases that can affect their food intake [4].

Disease-related malnutrition is common [5]. In a meta-analysis involving 25 Swedish studies in different types of care facilities, 28% of the patients were assessed as malnourished, and in chronically ill older people, the prevalence was even higher [5].

Malnutrition entails great economic costs [6]. Good nutritional care can reduce the prevalence and cost of malnutrition in hospitals [7]. Hence, all patients should undergo a nutritional assessment upon admission to the ward [7]. Mini Nutritional Assessment (MNA) is a screening tool specifically designed to assess the nutritional status of older people [8], and is recommended for routine geriatric assessments by the European Society for Clinical Nutrition and Metabolism (ESPEN) [9].

MNA-SF is a short form of the original MNA, less time consuming to complete [9]. The MNA-SF is also used to refer to the full MNA if the patient is classified to be at risk of malnutrition after the MNA-SF screening [9]. The screening should be followed by an

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investigation of the causes of malnutrition and should result in appropriate nutritional treatment, including monitoring of deployed operations [10].

Nutrition therapy means that the patient's energy- and nutrient needs should be met in an optimal way, which often can be achieved by appropriate food choices [11,12]. Swedish hospitals have adopted three basic diets:

- One designed in compliance with the Swedish Nutrition Recommendations intended to be used for patients whose disease does not affect nutritional status [10].
- One standard diet to be used when the patient's appetite or capacity for physical activity is affected by the disease [10].
- One energy-enriched diet designed for malnourished patients or patients who are at risk of malnutrition and have a poor appetite [10].

The primary recommendation for patients who are assessed as being malnourished or at risk of malnutrition is to offer an energy-enriched diet followed by oral nutritional supplements [10,12].

Unfortunately, malnutrition rarely receives enough attention. A Swedish study highlighting attitudes, knowledge, and practices concerning management of nutritional problems in inpatient care found that people at risk of malnutrition were not identified, investigated, and dealt with to the requisite extent [13].

The objective of this study was to investigate routines regarding dietary prescriptions and monitoring of food intake in geriatric patients and to see how well the prescribed diet conforms to the patients' nutritional status and ability to eat. A further aim was to identify the most common reasons and factors interacting with patients not finishing a complete meal.

2. Materials and methods

2.1. Setting and sample

This study combines two methods of data collection. A quantitative part that consists of a questionnaire and a two-day dietary record performed to assess what diet and portion size the patient was in need of in comparison to what they were prescribed. A qualitative part with interviews, that was conducted to increase the knowledge about the routines at the wards when prescribing diet to patients. This mixed method approach was used not only to see how well the prescribed diet conforms to the patients' nutritional status and ability to eat but also to explain why or why not they received a diet that was adapted to their needs.

In late March to early April 2012, 43 patients were recruited from four geriatric wards (two emergency wards, one ward for acute hip fractures and one stroke ward) at a university hospital in Stockholm. Each ward had 20 patients admitted at the time of the study. Inclusion criteria for participation were ability to give informed consent, ability to speak and understand Swedish or English, and admittance to the ward for more than forty-eight hours. Exclusion criteria were admittance to the ward for less than forty-eight hours, communication difficulties or if the patient was tube fed or receiving parental nutrition. All inpatients that met the inclusion criteria were asked to participate in the study. A total of 80 patients were staying at the four departments the days of data collection. Of these, 45 patients met the inclusion criteria whereof 43 patients agreed to participate in the study. Informed written consent was collected from all patients who agreed to participate in the study. One nurse responsible for nutrition issues and one assistant nurse at each ward were asked to participate in the interviews, in total eight nurses were interviewed. Oral informed consent for participation in the interviews was collected from the nurses and the assistant nurses.

Table 1
Description of the study population (gender, age), type of housing and admission cause (n = 43).

Variable	*n*	%
Gender		
Women	26	(60)
Men	17	(40)
Age		
65–75	8	(19)
76–85	17	(40)
≥86	18	(42)
Housing		
Living at home	40	(93)
Sheltered housing	3	(7)
Admission Cause		
Infection	10	(23)
Fracture	9	(21)
Lung disease	5	(12)
Fall	3	(7)
Heart disease	6	(14)
Stroke	4	(9)
Pain	1	(2)
Malnutrition	1	(2)
Reduced general condition	1	(2)
Degenerative disease	1	(2)
Dizziness	1	(2)
Osteoarthritis	1	(2)

2.2. Dietary registration

The first section of the dietary questionnaire estimated how much the patient ate of the food portion served at lunch and dinner in two consecutive days. The form was a modified version of the questionnaire used in the NutritionDay study, which seemed adequate to use in this study [14]. The modification consisted of adding an additional choice of portion size (three quarters) to the original questionnaire. This was made because there is a difference in energy- and nutrient intake between eating a half portion or a whole, which is especially important to capture in this group of older people. The patient's dietary intake was recorded as a full/three quarters/half/quarter of a portion through direct observation or through an observation of how much food the patient left on the plate [14]. Dietary records were filled out immediately after the meal. To minimize variation in the assessments, the same person, (registered dietician and first author) conducted all dietary records.

The second section of the questionnaire included a question regarding the reason why the patient did not eat the whole portion of food. If the patients did not eat everything on the plate, they were asked why and could choose among eleven alternatives to fill in, e.g. I was not hungry or I had nausea. These were the same alternatives used in the NutritionDay study [14]. Patients' diet prescriptions and demographic data (Table 1) was retrieved from their medical records.

2.3. MNA-SF

According to the hospitals local guideline's all patients admitted to the geriatric wards were routinely screened with MNA-SF (7 points or less is assessed as malnourished; 8–11 points as in risk for malnutrition and 12–14 points as well nourished). If the patient received 11 points or less at screening with the MNA-SF the full MNA should be conducted to determine the patient's nutritional status [9]. The information from the MNA-SF screening was retrieved retrospectively from the patients' medical records (Table 2). Three patients had not been screened with MNA-SF. Patients' weight was

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