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## ORIGINAL ARTICLE

# Randomized clinical trial of nutritional counseling for malnourished hospital patients<sup>☆</sup>



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## KEYWORDS

Malnutrition;  
Targeted counseling;  
Public health nursing;  
Quality of life;  
Mortality;  
Body weight;  
Daily activities;  
Long-term care;  
Patient readmission;  
Diet

## Abstract

**Introduction:** Malnutrition is associated with an increased risk of mortality and morbidity, longer hospital stays and general loss of quality of life. The aim of this study is to assess the impact of dietary counseling for malnourished hospital patients.

**Patients and methods:** Prospective, randomized, open-label study of 106 hospital patients with malnutrition (54 in the control group and 52 in the intervention group). The intervention group received dietary counseling, and the control group underwent standard treatment. We determined the patients' nutritional state (body mass index, laboratory parameters, malnutrition universal screening tool), degree of dependence (Barthel index), quality of life (SF-12), degree of satisfaction (CSQ-8), the number and length of readmissions and mortality.

**Results:** The patients who underwent the "intervention" increased their weight at 6 months, while the controls lost weight (difference in body mass index, 2.14 kg/m<sup>2</sup>;  $p < .001$ ). The intervention group had better results when compared with the control group in the Malnutrition Universal Screening Tool scores (difference, -1.29;  $p < .001$ ), Barthel index (difference, 7.49;  $p = .025$ ), SF-12 (difference, 13.72;  $p < .001$ ) and CSQ-8 (difference, 4.34,  $p < .001$ ) and required fewer readmissions (difference, -0.37;  $p = .04$ ) and shorter stays for readmissions (difference, -6.75;  $p = .035$ ). Mortality and laboratory parameters were similar for the 2 groups.

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**Conclusions:** Nutritional counseling improved the patients' nutritional state, quality of life and degree of dependence and decreased the number of hospital readmissions.  
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## PALABRAS CLAVE

Desnutrición;  
Consejo dirigido;  
Enfermería en salud  
comunitaria;  
Calidad de vida;  
Mortalidad;  
Peso corporal;  
Actividades  
cotidianas;  
Cuidado a largo  
plazo;  
Readmisión del  
paciente;  
Dieta

## Ensayo clínico aleatorizado del asesoramiento nutricional en pacientes desnutridos hospitalizados

### Resumen

**Introducción:** La desnutrición se asocia a un mayor riesgo de mortalidad y morbilidad, a estancias hospitalarias más largas y a un deterioro general de la calidad de vida. Este estudio se propone evaluar en pacientes desnutridos hospitalizados el impacto del asesoramiento dietético.

**Pacientes y métodos:** Estudio prospectivo, aleatorizado, abierto, en 106 pacientes hospitalizados con desnutrición (54 grupo control, 52 en el de «intervención»). El grupo «intervención» recibió asesoramiento dietético y el grupo control el tratamiento habitual. Se determinó el estado nutricional (índice de masa corporal, parámetros analíticos, *Malnutrition Universal Screening Tool*), el grado de dependencia (índice de Barthel), la calidad de vida (SF-12), el grado de satisfacción de los pacientes (CSQ-8), el número y días de reingresos hospitalarios y la mortalidad.

**Resultados:** Los pacientes sometidos a «intervención» aumentaron de peso a los 6 meses, mientras que los controles perdieron peso (diferencia en el IMC de  $2,14 \text{ kg/m}^2$  [ $p < 0,001$ ]). El grupo «intervención» mostró mejores resultados respecto al grupo control en las puntuaciones obtenidas en el *Malnutrition Universal Screening Tool* (diferencia  $-1,29$ ;  $p < 0,001$ ), *Barthel* (diferencia  $7,49$ ;  $p = 0,025$ ), SF-12 (diferencia  $13,72$ ;  $p < 0,001$ ), y CSQ-8 (diferencia  $4,34$ ,  $p < 0,001$ ), y precisaron de un menor número de reingresos (diferencia  $-0,37$ ;  $p = 0,04$ ) y de días de rehospitalización (diferencia  $-6,75$ ;  $p = 0,035$ ). La mortalidad y los parámetros analíticos fueron similares en grupos.

**Conclusiones:** El asesoramiento nutricional mejoró el estado nutricional, la calidad de vida y el grado de dependencia de los pacientes, además disminuyó el número de reingresos hospitalarios.

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## Background

In developed countries, malnutrition especially affects hospitalized individuals, with a prevalence that varies (according to the definition of malnutrition employed and the characteristics of each study's patients<sup>1,2</sup>) between 20% and 50%.<sup>3-6</sup> Malnutrition in hospital patients is associated with longer hospital stays, an increased risk of readmission and higher mortality rates.<sup>1,7</sup> It is estimated that hospital costs can be up to 75% higher for malnourished patients.<sup>8</sup>

Oral nutritional supplements have demonstrated their usefulness in improving the nutritional state in various clinical conditions.<sup>9,10</sup> Malnutrition can also be treated using nutritional counseling.<sup>11</sup> However, the efficacy of counseling is still a matter of debate, even though a number of studies have indicated that it improves the nutritional state of patients with various chronic diseases.<sup>12-15</sup> Systematic reviews have highlighted the considerable heterogeneity in the results of the nutritional counseling employed.<sup>16,17</sup> Although the efficacy of counseling in increasing patients' dietary intake and weight appears to have been proven, there is no conclusive evidence regarding other

circumstances such as mortality, hospital readmissions, length of hospital stay and functional capacity.<sup>11,16,17</sup> The method for implementing the intervention and the coordination and continuity of nursing care after hospital discharge appears to improve the results of counseling.<sup>11,18</sup>

The aim of this study was to assess the effects of a 6-month intervention program on dietary counseling compared with standard treatment on the nutritional state of hospitalized patients with malnutrition secondary to a disease after hospital discharge.

## Patients and methods

This was a randomized, open clinical trial with a 6-month follow-up, conducted by case manager nurses from hospital and community care, at Hospital Clinic Virgen de la Victoria of Málaga and from 9 primary care centers of the healthcare district of Málaga-Guadalhorce, between October 1, 2010 and April 30, 2013. The study was approved by the Research Ethics Committee of the Málaga Healthcare District and was conducted in accordance with the Declaration of Helsinki

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