METROPOLITAN UNIVERSITY COLLEGE

METROPOL

N°: MON-P163

Hospital food service and dietary intake

A comparative analysis of a cook-serve buffet trolley food system and a cook chill pre-plated food system

Authors: Lykke S., Bellman K., Kristensen M. B., René M., Justesen L.
Affiliation: Department of Nutrition and Midwifery,
Metropolitan University College, Copenhagen, Denmark

Introduction

Insufficient dietary intake is common among hospitalised patients and may affect prognosis negatively (1, 2). Hence hospital meals are central in the treatment, and their efficacy in ensuring adequate intake is crucial. This study aimed to compare patients' dietary intake from a cook-serve buffet-trolley serving system (BTS) to a new cook-chill pre-plated concept (CCP) allowing patients to choose from a static menu 24/7.

Figure 1. Picture of the buffet-trolley servering system (BTS).

Methods

A quasi-experimental study was conducted at an orthopaedic surgical and a gynaecological surgical ward at a Danish Hospital. 57 patients (expected admittance ≥3 days) were served meals from BTS and the dietary intake was measured. After implementation of CCP on the wards, dietary intake was measured on 38 patients. Intake at mealtimes was assessed through a visual portion size assessment method and intake in-between meals was measured using a self-reported dietary record (4). The number of patients achieving an intake of ≥75 % of energy and protein requirements was compared between groups using a pooled two-proportion z-test (5).

Table 1. Number of patients and measurements included before and after the implementation of CCP on the wards.

	Original concept Buffet trolley system (BTS)	**New diet concept Pre plated concept** (CCP)
Number of patients	57	38
Number of measurements	114	44
Gender		
· Women	49,1 %	47,4 %
· Men	50,9 %	52,6 %
Distribution of patients at wards		
· Orthopedic surgical ward(09-4)	29,8 %	26,3 %
· Orthopedic surgical ward(12-4)	38,6 %	39,5 %
· Gynecological ward(12-5)	31,6 %	34,2 %
Distribution of measurements at wards		
· Orthopedic surgical ward (09-4)	34,2 %	27,2 %
· Orthopedic surgical ward (12-4)	35,1 %	39,5 %
· Gynecological ward (12-5)	30,7 %	33,2 %
Patients at nutritional risk according to NRS 2002 (3)	34,6 %	31,6 %

Results

An energy intake ≥75 % of requirements was achieved in 74 % of patients on CCP compared to 58 % on BTS (p=0,116) and a protein intake ≥75 % of requirements was achieved in 55 % of the patients on CCP compared to 53 % on BTS (p=0,801). An energy intake ≥75 % of requirements was achieved in 67 % of the patients at nutritional risk on CCP compared to 33 % on BTS (p=0,130) and 58 % reached ≥75% of the protein requirements on CCP compared to 33 % on BTS (p=0,256).

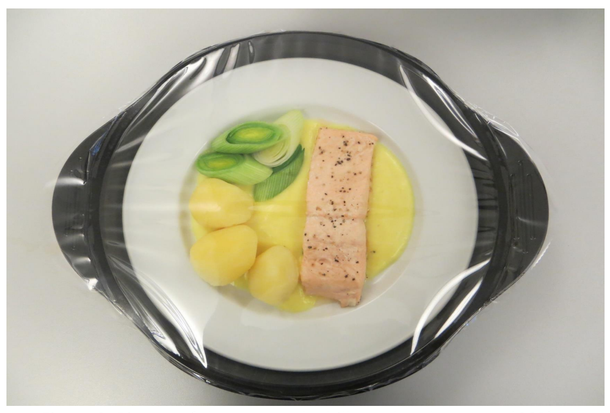

Figure 2: Picture of the new cook-chill preplated concept (CCP).

Table 2. Percentage of patients achievieng a dietary intake of minimum 75% of requirements before and after the implementation of CCP on the wards and the corresponding p-values.

	Original concept Buffet trolley system (BTS)	**New diet concept Pre plated concept** (CCP)	**p-value**
All patients An energy intake ≥75 % of requirement	58 % (33/57)	74 % (28/38)	0,116
All patients A protein intake ≥75 % of requirement	53 % (30/57)	55 % (21/38)	0,801
Patients at nutritional risk An energy intake ≥75 % of requirement	33% (3/9)	67 % (8/12)	0,130
Patients at nutritional risk A protein intake ≥75 % of requirement	33 % (3/9)	58 % (7/12)	0,256

Conclusion

The results do not show a significant increase in energy and protein intake among all patients or patients at nutritional risk. In future research on foodservice concepts at hospitals, there is a need for exploring dietary intake among patients at ward level and there is a need for focusing on patients at nutritional risk. Furthermore, there is a need for studying organisational and communicational aspects when implementing a new food-service concept.

References

(1) Rasmussen, H. H., Kondrup, J., Staun, M., Ladefoged, K., Kristensen, H., & Wengler, A. (2004). Prevalence of patients at nutritional risk in Danish hospitals. Clinical Nutrition, 23(5), 1009-1015.

(2) Thibault R, Chikhi M, Clerc A, Darmon P, Chopard P, Genton L, et al. Assessment of food intake in hospitalised patients: A 10-year comparative study of a prospective hospital survey. Clinical Nutrition 2010.

(3) Kondrup J, Rasmussen HH, Hamberg, Ole,Stanga, Z. Nutritional risk screening (NRS 2002): a new method based on an analysis of controlled clinical trials. Clinical nutrition 2003;22(3):321-336.

(4) Biltoft-Jensen, A., Fagt, S., Tetens, I., & Trolle, E. (2011). Kostundersøgelser - metoder og anvendelser. I A. Astrup, S. Bügel, J. Dyerberg, & S. Stender, *Menneskets ernæring* (s. 265-283). København: Munkksgaard Danmark.

(5) Hansen, K., & Koldsø, C. (2012). *Statistik i økonomisk perspektiv.* København: Forfatterne & Hans Reitzels Forlag.

Corresponding authors

BSc. Nutrition and Health S. Lykke: Sophielykke@gmail.com

BSc. Nutrition and Health K. Bellman: ksbj_91@live.dk

ESPEN2016 163--MON-P

Nutritional assessment

Lise Justesen

DOI: 10.3252/pso.eu.ESPEN2016.2016

Poster presented at: ESPEN The European Society for Clinical Nutrition and Metabolism

PosterSessionOnline.com