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Compromised food access in hospital among older patients and those with multiple morbidity: the results from a survey of four hospitals

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Hospital admission can be associated with deterioration in nutritional status. This is particularly common in older patients and those with multiple morbidity, and is related to numerous complex issues, including the pathophysiology of disease, altered nutrient requirements and reduced food intake. Many studies have investigated the prevalence of undernutrition in hospitals or satisfaction with food services; however, there is little work on patients' experiences of food access. Our previous qualitative research demonstrated that patients can experience problems of food access in hospitals in five domains (feeling hungry, physical barriers, organisational barriers, food choice, food quality)[(1)] and we have developed a valid and reliable questionnaire (Experiences of Food Access) to measure this[(2)]. Little is known of the experiences of food access in hospitals among older patients and those with multiple morbidity. Therefore the aim of this analysis was to investigate the association of age and multiple morbidity with compromised food access in hospitalised patients.

A cross-sectional survey of patients' experiences of food access was undertaken on a range of wards (cancer, stroke, renal, medical, orthopaedic, elderly, medical admissions and surgical) at four different hospitals in London. All adult in-patients consuming hospital food were eligible to participate and the exclusion criteria were those who were unable to consent, too ill to participate, or receiving enteral or parenteral nutrition. A random sample of eligible patients was invited to participate. Patients completed the validated 27-item 'Experiences of Food Access' questionnaire either through self-completion or face to face interview. Three or more affirmative responses in a particular domain were defined as compromised food access for that domain. Age and clinical data (e.g. diagnoses) were taken from medical records and multiple morbidity was calculated using the Cumulative Illness Rating Scale (CIRS). To investigate associations of age and multiple morbidity with compromised food access, logistic regression was conducted using Stata (version 10). This research was approved by the Guy's Hospital Research Ethics Committee.

Of the 1154 patients approached, 326 declined to participate and 64 provided incomplete data. Therefore, 764 (66.2 %) patients were recruited and are presented in the current analysis. A number of patients had compromised food access in relation to feeling hungry ($n = 233, 30\,\%$), physical barriers ($n = 185, 24\,\%$), organisational barriers ($n = 226, 30\,\%$), food choice ($n = 186, 24\,\%$) or food quality ($n = 163, 21\,\%$), as recently reported[(2)]. Increasing age and morbidity might be expected to be associated with physical barriers to food access. Indeed, older patients (≥ 75 years) were more likely to report problems of physical barriers to food access (OR 2.67, $P = 0.007$), although less likely to report problems with feeling hungry (OR 0.42, $P = 0.007$), organisational barriers (OR 0.54, $P = 0.042$) and food quality (OR 0.49, $P = 0.030$). Patients with multiple morbidity (CIRS score ≥ 10) were more likely to report problems with physical barriers (OR 3.65, $P = 0.029$), and also with food quality (OR 3.97, $P = 0.012$), even when adjusted for age. In relation to increasing morbidity, the physical barriers were significant in relation to '*difficulties opening food packets*' ($P = 0.004$) and '*difficulty feeding myself*' ($P = 0.012$) and the food quality issues were in relation to '*taste*' ($P = 0.037$), '*appearance*' ($P = 0.025$) and '*smell*' ($P = 0.006$).

Older patients and those with multiple morbidity are at increased risk of compromised food access in hospitals. Greater physical barriers occurred despite recommendations that assistance to eat and drink should be provided where necessary[(3)]. Lower feelings of hunger are well documented in older people and may limit approaches to improving oral intake during hospitalisation. In those with multiple morbidity, problems of food quality may relate to the impact of illness or treatment on taste or smell, or longer or more frequent hospital stays resulting in prolonged exposure to restricted food choice. Interventions to reduce compromised food access in older patients and those with multiple morbidity are urgently required. Meanwhile, research on the effect of compromised food access on nutritional status and clinical outcome is warranted.

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