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### Nutritional rehabilitation after ICU - does it happen

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## **Providing effective nutritional care for patients after critical illness: is there a need to challenge traditional approaches?**

### **Abstract**

**Background:** The aims of this study were to explore the factors influencing nutritional recovery in patients after critical illness and develop a model of care to improve current management of nutrition for this patient group.

**Methods:** A grounded theory approach was adopting using observations of patient's nutritional care, 37 interviews with 17 patients during their ward stay and 14 follow up interviews at three months post ICU discharge

**Results:** 'Interrelated system breakdowns during the nutritional recovery process' emerged as the overarching core category that influenced patients' experiences of eating after critical illness. This encompassed the categories, 'experiencing a dysfunctional body' 'experiencing socio-cultural changes in relation to eating' and 'encountering nutritional care delivery failures'.

**Conclusions:** The findings from this study provide a unique contribution to knowledge by offering important insights into patients' experiences of eating after critical illness. The study identified numerous nutritional problems and raised questions about the efficacy of current nutritional management in this patient group. Adopting a more individualised approach to nutritional care would ameliorate the nutritional issues experienced by post ICU patients.

### **Introduction**

Good nutrition is fundamental to patients' well-being (Brogden 2004) with the provision of effective nutritional care involving *“a co-ordinated approach to the delivery of food and fluid by different health professionals, and views the patient as an individual with needs and preferences. It is the process that determines a person's preferences and cultural needs, defines his or her physical requirements, and then provides the person with what is needed. It follows a person's progress through an illness, by responding to changing nutritional requirements. It involves the monitoring and reassessment of nutritional status at regular intervals, referral for specialist care when appropriate, and good communication with services in the community. Good nutritional care will involve training for staff, carers and patients, and access to information”* (NHS QIS 2003 p17).

There have been numerous recommendations and strategies directed at improving nutritional care in hospital in the form of guidelines and policy documents. The Department of Health has published a number of documents focusing on improving nutritional care in hospitals. Consultation with patients carried out for The NHS Plan (DH 2000a) identified problems with food quality and

structure of meals in hospital. The 'Better Hospital Food Programme' was detailed in the NHS Plan (DH 2000a) and proposed a number of standards to ensure the provision of quality food. These standards included recommendations for the frequency of meals and snacks, availability of food 24 hours a day, a suggestion to move the main meal to the evening, adoption of a new NHS menu design, menus that meet the needs of the population group and have been analysed for nutritional adequacy by a dietitian.

In 2004 the Better Hospital Food Programme (DH 2004a) introduced protected mealtimes. The purpose of a Protected Mealtime Policy was to minimise interruptions at mealtimes, facilitate an environment conducive to eating and provide patients with necessary assistance at mealtimes. This initiative was supported by a number of professional organisations including the Royal College of Nursing, the British Association of Parenteral and Enteral Nutrition and the Hospital Caterers Association. The Better Food campaign was terminated in 2007 by the Department of Health and replaced by a more holistic Nutrition Action plan (DH 2007). It defined five key priorities for action: raising nutritional awareness; improving nutritional education and training; ensuring clear nutritional guidance; promoting nutritional screening and clarification of nutritional standards.

However, as reported by McKinlay (2008), the issue is not a paucity of publications but actually translating these reports into action. This argument was supported by Guest et al (2011) who stated that *"malnutrition is often under-recognised and under-treated in the UK even though several national guidelines for detecting and managing malnutrition are available. However, to be effective these guidelines need to be implemented and this is not currently the case in many parts of the UK"* (p422).

Larsen and Uhrenfeldt (2013) highlighted the need for an innovative approach to nutrition and stated that *"hospital patients' need for nutrition is well described as regards energy and protein intake based on biomedical evidence. However, in spite of the increased knowledge in this area, patients do not automatically raise their consumption to the level needed during hospitalisation. On the contrary, people have their reasons, tastes and traditions. Therefore knowledge of patients' personal experiences and reasons for not eating or drinking sufficiently, their individual feelings, preferences and rejections might provide professionals with insight into the complexity of eating and drinking disorders, and the potential subsequent malnutrition and how to help patients deal with their nutritional challenges during illness"* (p185).

Larsen and Uhrenfeldt (2013) examined 13 articles with the aim of identifying patients' lived experiences of having a reduced intake of food and drink during illness. The findings revealed three themes: serving of food and drink, modifications related to illness, and nutritional care as provided by health professionals. In the first theme, patients highlighted issues with flavour, temperature and texture of food, and the influence these had on intake. Other identified issues were related to the eating environment with some patients expressing a preference to eating alone, others wanting to eat with others. Patients also experienced interruptions at mealtimes, problems with missing meals due to investigations and issues with timing of meals. Under the second theme patients' experienced physical changes that affected their intake of food including poor appetite, nausea, vomiting, fatigue and changes to smell. Psychological problems that influenced nutritional intake were fear, shame, reduced body control, embarrassment, loss of hope, loneliness and inability to interact in social activities. The third theme highlighted patients' experiences relating to the influence of healthcare professionals in nutritional care.

The authors concluded that patients did not get assistance with eating, nor the necessary advice and information about their nutritional needs. Recommended changes to current nutritional practice included the need to provide appropriate nutritional information and advice, creation of social eating environments and consideration of individual preferences.

This review incorporated studies which had looked at nutritional care in general ward patients. There is a lack of evidence to guide the nutritional management of post ICU patients. This patient group is known to suffer from a complex range of physical, emotional, psychological, and social problems, (Desai 2011, Needham 2012) which may impact on their nutritional recovery and ongoing nutritional care needs. The UK National Institute for Health and Care excellence (NICE 2009) guideline failed to identify any studies that specifically addressed nutritional rehabilitation in patients after critical illness. Reflecting this, nutrition issues receive relatively little attention in the NICE guideline. Thus the present study was undertaken to provide insight into patients' experiences of eating after critical illness to develop a theoretical understanding of the processes influencing nutritional recovery in order to facilitate the provision of effective nutritional care for post ICU patients. The aim of the research was to provide a comprehensive understanding of the factors influencing nutritional recovery, and the relationship between them, in patients after critical illness.

## **Method**

As the purpose of the present study was to explore the factors that influence nutritional intake in patients after critical illness and create a new theory from the concepts arising from the study, a grounded theory approach was considered the most suitable. Symbolic interactionism was the theoretical perspective adopted for the study, a position often adopted for studies using grounded theory (Bulmer 1969). Adoption of this philosophy facilitated understanding the meaning of patients' experiences on the ward in relation to eating and the impact of interactions with others.

The setting for the study was a large teaching hospital in central Scotland. Patients were eligible for recruitment to the study if they had received more than 48 hours of mechanical ventilation and were ready for discharge to a ward. Exclusion criteria included patients who were going to be discharged to pre-existing ward based rehabilitation programmes e.g. stroke or liver transplant.

The study was approved by the Scotland A Research Ethics Committee. The study was explained verbally to the patients and they also received written information sheets. Informed consent was obtained to participate in the study and patients were guaranteed confidentiality and anonymity.

Consistent with grounded theory methodology theoretical sampling was used to enable data to be collected, analysed and emerging categories re-examined (Charmaz 2000). Theoretical saturation, defined as “*no additional data are being found whereby the sociologist can develop properties of the category*” (Glaser & Strauss 1967 p61), was achieved after recruiting 17 patients who had survived critical illness into the study.

Data collection commenced in January 2011 and finished at the beginning of September 2011. Qualitative methods, observations and semi-structured interviews, were chosen for this study in order to elicit patients' experiences of eating during the first three months after ICU discharge. Observations were carried out on the ward thrice weekly for the duration of the patient's stay in hospital. Overt observations were carried out focussing on mealtimes, ward rounds and patient/staff interactions. As data collection and analysis was a cyclical process the focus of the observations altered to allow verification of evolving analytic themes. Observations were recorded in a weekly case report form. The field note page was divided into two columns with the left hand column detailing the content of the observation and the researcher's insights and reflections relating to specific parts of the observation documented in the right hand column. The researcher wrote short hand notes during observations and then wrote a more detailed account after leaving the ward.

Patient interviews were carried out after transfer from ICU and then on a weekly basis for the duration of their ward stay. These interviews were short due to high levels of patient fatigue and focussed on eliciting factors that influenced nutritional intake during their ward stay. A final interview was conducted at three months post ICU discharge at the patient's home or in the Clinical Research Facility based in the hospital and lasted from 30-70 minutes. The interviews were digitally recorded, transcribed verbatim and reviewed for accuracy.

Data were analysed and coded following the grounded theory method described by Charmaz (2006). Interview data were analysed line-by-line and incident-to-incident coding for the observational data. The next step in the analysis was focussed coding which started to form explanations for larger sections of data through the creation of categories. Through the process of constant comparative analysis and ongoing questioning of data a core category emerged that explained the relationship between the other categories.

## Results

The findings are from analysis of the data from 37 interviews provided by the 17 patients during their ward stay, 14 follow up interviews at three months post ICU discharge and 156 hours of ward based observations.

'Interrelated system breakdowns during the nutritional recovery process' emerged as the overarching category that influenced patients' experiences of eating after critical illness. This encompassed the categories, 'experiencing a dysfunctional body' 'experiencing socio-cultural changes in relation to eating' and 'encountering nutritional care delivery failures' (figure 1). The categories, their relationship to each other and the core category are described in the subsequent three sections.

**Figure 1 Core category, categories and properties**

<b>Core Category</b>	<b>Interrelated system breakdowns during the nutritional recovery process</b>		
<b>Category</b>	Experiencing a dysfunctional body	Experiencing socio-cultural changes in relation to eating	Encountering organisational nutritional care delivery failures
<b>Properties</b>	Facing physiological changes	Experiencing social isolation	Experiencing system-centred failures
	Facing psychological changes	Struggling to adapt to an unfamiliar culture	Struggling with an inflexible hospital routine
	Dealing with changes to	Importance of food habits	Communication

	body, self and identity	and routine	failures
			Staff knowledge gap

### **Interrelated system breakdowns during the nutritional recovery process**

Patients' experienced a number of system breakdowns that influenced their nutritional recovery after critical illness. Encountering organisational nutritional care delivery failures (experiencing system-centred failures, struggling with an inflexible hospital routine, communication failures and staff knowledge gap) highlighted the organisational factors which influenced patients' experience of eating. The interaction between these organisational factors and the patients' dysfunctional body highlights the failings of the organisation in responding to and managing a dysfunctional body (facing physiological changes, facing psychological changes, dealing with changes to body, self and identity) and the socio-cultural changes related to eating (experiencing social isolation, struggling to adapt to an unfamiliar culture, importance of food habits and routine).

### **Experiencing a dysfunctional body**

Post ICU patients experienced profound and dramatic changes to their body and the findings are explored in light of the way these bodily alterations impact on food intake.

#### *Facing physiological changes*

Patients described changes to the way in which they experienced the physiological aspects of eating after ICU. Appetite, taste and satiety were reported to have been particularly affected; this was especially noted during the first few days of transfer to the ward. Loss of appetite was the most commonly reported physiological change after ICU. This persisted for variable lengths of time and for some patients it was still reported as being a problem at three months post ICU discharge. Another physiological change that impacted on eating was early satiety. Patients were conscious of feeling full after eating small amounts of food. One patient described this as: "*I order it, it looks nice on paper, I order it, it comes up, I sit and think that looks nice. One spoonful and I've had enough*" (Patient 15).

Patients reported taste changes, particularly noted during the first few days of transfer to the ward. Some patients described food as being bland, some reported that food tasted salty and others experienced a 'metallicky' taste when eating. These taste changes were most apparent when relatives brought in a previously enjoyed food and this was found to be unpalatable. These taste changes were noted to cause food aversions and changes in food preferences. Some patients avoided coffee as it tasted bitter, others avoided soups and pasta dishes as they found them too salty

and many reported non-specific taste changes which resulted in foods tasting different from the way they were previously experienced.

The presence of pain was reported by patients, especially those who had on-going surgical complications. Although patients did not directly associate pain with a reduced food intake, it was apparent that pain served as a powerful distraction. Patients who were in pain were observed to eat very little food at mealtimes. Patients also reported changes to their sleeping patterns, commonly waking at night and sleeping for periods during the day. Sleep disturbances were observed to have a detrimental effect on nutritional intake. Patients often slept late in the morning as they had been awake for periods during the night and therefore missed breakfast. Increased daytime sleeping patterns also meant that patients failed to consume prescribed supplements and snacks as they were often asleep between meals.

The result of all these physiological changes for the post ICU patient was that eating ceased being a pleasure, something that was previously anticipated and enjoyed. It became a chore, something that had to be done out of necessity to fuel the body. One patient highlighted that *"I'm eating because I have to..... I'm eating because it is necessary to live, to eat. You've got to get your dietary stuff, your nutrition, all the stuff you need to get by in life but it's a struggle now."* (Patient 16)

#### *Facing psychological changes*

Another element of the dysfunctional body was the identified psychological changes with many patients experiencing anxiety and low mood. These were profoundly affected by their ICU experience as these quotes illustrate.

*"(My mood) is up and down, it's up and down..... it's a mixture of frustration but also selfish and that's because I feel frustrated that I should be in so many ways, you know, counting my blessings."* (Patient 4)

*"I just dinnae understand. I dinnae. I cannae come to grips with what's happened, where I have been. I don't know, I jist dinnae ken."* (Patient 14)

It was clear that patients struggled to come to terms with all that had happened to them and cope with all the changes associated with critical illness; therefore, eating was not a high priority for them. Many patients also suffered from delirium and were unable to recall what they had eaten, indeed if they had eaten, and did not ask for assistance at mealtimes. Patients were unaware of the

need to ask for additional snacks and nutritional supplement drinks if these failed to be delivered. It was also noted that these patients were often in side rooms which limited observation of potential nutritional issues by healthcare staff.

#### *Dealing with changes to body, self and identity*

All patients experienced bodily changes as a result of their ICU stay as effects of critical illness can lead to quite dramatic changes to physical appearance as a result of weight loss and reduction in muscle mass. The majority of patients reported that their bodies were weak and fatigued. Patients became increasingly aware of their body after ICU with realisation often coming after experiencing its limitations. Their body was unable to do what they wanted it to do or indeed what it used to do. Patients expressed feelings of anxiety, stress, fear, concern, and frustration in relation to their altered bodies. The quotes below illustrate these feelings.

*"..... it's the sheer frustration as well, the sheer frustration of not being able to do what you want to do and obviously the tiredness is a contributory factor to that." (Patient 12)*

*"I'm depressed in as much as I don't like not being well cause this is not a regular thing for me not to be well..... so that depresses me a bit and I get depressed because I cannae get up and go for a walk because I'm not physically up to it." (Patient 9)*

Patients also experienced loss of control over what their bodies were subjected to during their ward stay. Bodies were routinely stabbed for blood, examined by doctors and exposed to various tests and procedures. Bodies were also awoken, washed, repositioned, exercised and in some cases an artificial liquid formula was administered through a tube into it. Patients had limited control over many of these actions and one patient commented *"I feel like my body is not my own"* (Patient 14).

#### **Experiencing socio-cultural changes in relation to eating**

The findings identified the influence of the socio-cultural aspects of eating on nutritional intake.

#### *Experiencing social isolation*

Over half of the patients in the study were discharged from ICU to a side room on a ward due to the presence of hospital acquired infections such as MRSA or Clostridium Difficile. Meals were eaten alone in their room, often in bed. Social isolation was a contributory factor to reduced nutritional intake with patients perceiving meal times as much more than just for eating, they also provided opportunities for social interaction. The quotes below illustrate this.

*"I think being alone you don't eat as well as if you've got somebody with you." (Patient 11)*

*"Eating with someone makes a difference because I like to yap, talk and talk." (Patient 12)*

#### *Struggling to adapt to an unfamiliar culture*

Many patients in the study mentioned their pre-hospital choices of 'healthy foods': *"I always made sure I had something healthy for tea."* (Patient 2), *"I suppose we try to eat fairly healthily."* (Patient 12). These views reflect socio-cultural influences in advocating a healthy diet and the majority of patients highlighted their previous orientation towards healthy choices.

#### *Importance of food habits and routine*

Patients highlighted the importance of familiar foods and routine in promoting nutritional intake. It was apparent that meals made from ingredients of choice, prepared the way they wanted it and provided when they were ready to eat were conducive to enjoying eating and augmenting food intake. Meals at home were contrasted with those provided in hospital:

*"I suppose you get used to a certain type of food that you have at home and how it was done. I mean something like an egg, some people like it hard boiled and some soft and ken it's just your own habits." (Patient 3 wife)*

*"I think that's 'cause it's home food you know and times as well.....you know I had said this to you before, that you know having my lunch at 12 o' clock and my dinner at 5.....I've had too many years of psyche where that hasn't applied, you couldn't just change that around." (Patient 4)*

In hospital, food is often prepared differently to habitual preferences with restricted food choices and timing of meals. Many patients in this study had additional snacks brought in for them by relatives, food that was familiar to them and food that they previously enjoyed. The hospital model of three meals a day failed to meet the needs of post ICU patients as the physiological problems experienced by this patient group such as poor appetite, early satiety altered sleep patterns limited food intake at meal times.

#### **Encountering organisational nutritional care delivery failures**

Patients experienced a variety of nutritional care delivery failures that influenced their nutritional intake during their ward stay. These findings have been published in another paper (Merriweather

et al 2013). System-centred failures resulted in breakdowns in the delivery of nutritional supplements and snacks, patients struggled to feed themselves due to ICU related neuromuscular weakness which resulted in meals being uneaten. Observations identified problems with an inflexible hospital routine with issues around the timing and structure of hospital meals. Some patients were unused to having three set meals a day as they were used to eating when they felt like it, others found it difficult having a main meal for lunch as they were accustomed to having a snack at this time. Communication failures and lack of knowledge about the complex needs of post ICU patients were observed in the study across a number of healthcare professionals involved in the nutritional care of patients including nurses, doctors, dietitians, clinical support workers and catering staff.

## Discussion

The findings led to a substantive theory which gives a deeper understanding of patients' experiences of eating after critical illness. The data challenge the traditional models of service delivery and leads to a novel construct for provision of nutritional care that addresses the system breakdowns experienced by post ICU patients.

This novel construct highlights the need for an individualised approach to the provision of nutritional care as opposed to the traditional model that utilises a service centred approach for the delivery of nutritional care. Using the findings from the study a checklist approach which systematises the assessment and individualised delivery model of nutritional care has been constructed (Figure 1).

Figure 1. Checklist to promote the provision of effective nutritional care for post ICU patients

In the Intensive Care Unit	
<b>1: The patient's nutritional issues are identified early</b>	<input type="checkbox"/> pre-existing malnutrition prior to ICU admission (BMI<18kgm <sup>2</sup> , history of weight loss and/or history of poor nutritional intake) <input type="checkbox"/> long ICU stay (>7 days) <input type="checkbox"/> swallowing problems Patient experiencing physiological factors influencing nutritional intake. <input type="checkbox"/> loss of appetite <input type="checkbox"/> early satiety <input type="checkbox"/> taste changes <input type="checkbox"/> pain <input type="checkbox"/> nausea/vomiting <input type="checkbox"/> diarrhoea <input type="checkbox"/> fatigue <input type="checkbox"/> breathlessness <input type="checkbox"/> changes to sleep patterns Patient experiencing psychological factors influencing nutritional intake

	<input type="checkbox"/> delirium <input type="checkbox"/> low mood <input type="checkbox"/> cognitive changes <input type="checkbox"/> depression
<b>2: The patient's identified nutritional issues are communicated to ward staff</b>	Handover to ward staff to include: <input type="checkbox"/> current route for nutrition <input type="checkbox"/> identified factors influencing nutritional intake <input type="checkbox"/> nutritional plan
<b>During ward stay</b>	
<b>3: The patient's on-going physiological issues are identified</b>	<input type="checkbox"/> loss of appetite <input type="checkbox"/> early satiety <input type="checkbox"/> taste changes <input type="checkbox"/> pain <input type="checkbox"/> nausea/vomiting <input type="checkbox"/> diarrhoea <input type="checkbox"/> fatigue <input type="checkbox"/> breathlessness <input type="checkbox"/> changes to sleep patterns Issues are discussed with multidisciplinary team
<b>4: The patient's on-going psychological issues are identified</b>	<input type="checkbox"/> delirium <input type="checkbox"/> low mood <input type="checkbox"/> cognitive changes <input type="checkbox"/> depression Issues are discussed with multidisciplinary team
<b>5: The patient has the appropriate provision of food</b>	<input type="checkbox"/> meals served one course at a time <input type="checkbox"/> meals provided at suitable times <input type="checkbox"/> family encouraged to bring in favourite foods <input type="checkbox"/> provision of meals from canteen where necessary <input type="checkbox"/> additional snacks are provided between meals <input type="checkbox"/> assistance with eating is provided where necessary <input type="checkbox"/> eating with others is encouraged
<b>6: The patient is aware of the importance of good nutrition</b>	<input type="checkbox"/> emphasising the need to eat more for physical recovery <input type="checkbox"/> discussion of factors affecting nutritional intake <input type="checkbox"/> regular feedback to patient about adequacy of oral intake <input type="checkbox"/> involvement of family in discussions
<b>7: The patient's nutritional needs are discussed regularly by the MDT</b>	<input type="checkbox"/> weekly multidisciplinary meetings <input type="checkbox"/> dietitian highlights any nutritional issues <input type="checkbox"/> the need for nutritional support is reviewed by the multi-disciplinary team
<b>On discharge from hospital</b>	
<b>8 The patient is provided with the necessary nutritional aftercare</b>	<input type="checkbox"/> written dietary information <input type="checkbox"/> supply of nutritional supplements if necessary <input type="checkbox"/> contact details <input type="checkbox"/> regular follow-up by community dietitians

The findings from the study highlighted a lack of nutritional knowledge about the complex needs of the post ICU patient which influenced the nutritional care of this patient group. This was compounded by poor communication between health professionals. Traditionally the responsibility

for nutritional care has been a part of the nursing role and it is argued that nurses have a duty of care to ensure that patients receive adequate nutrition (Tolson et al 2002). However, nutritional responsibilities have evolved over time and Beck et al (2002) highlighted that a major barrier to optimal nutritional care was the ambiguity over responsibility for the specific elements of nutritional care. There is a need for a multidisciplinary approach to nutritional care in order to provide a consistent, systematic approach to the management of the identified factors influencing nutritional intake in post ICU patients.

There was also an identified need to provide the patient with information about the common problems associated with critical illness that influence nutritional intake. This would include physiological changes such as poor appetite, early satiety, taste changes, fatigue, weakness and also psychological issues such as delirium, sleep disturbances and low mood. Critical illness resulted in bodily changes both in terms of the functioning of the body and bodily appearance that were out with individual control. In order to restore the body, patients have to overcome the self's intrinsic regulation of food and relearn what to eat and how much. This is ultimately made more difficult because of the negative influence of the underlying physiological changes previously discussed. In an organisation which traditionally treats the physical body, care needs to be provided for individual as a whole to assist the patient to come to terms with changes to their body, self and identity. Wainwright et al (2007 p760) highlights that "the process by which we make sense of physiological change through social interaction also influences the recovery of physical performance, including appetite and food consumption". This is in line with current government priorities to provide 'care' as well as to 'treat' patients. NHS Scotland's action plan states that it should "deliver patient centred care which is respectful, compassionate and responsive to individual patient preferences, needs and values" (Scottish Government 2007 p32).

In order to facilitate patient-centred processes, consideration needs to be given to the care environment (McCormack & McCance 2006). In the delivery of patient-centred nutritional care the ward routine should be designed to suit the needs of patients. It was evident from the data that patients who were experiencing early satiety struggled with hospital meals that were provided three times a day as they only managed small amounts of food at each meal and yet these meals were only available thrice daily. Lack of flexibility in relation to the timing of meals meant that patients with altered sleeping patterns often missed meals or found that no food was available during the periods they were awake. Provision could be made for a later breakfast to allow these patients to sleep later in the morning and food could be made available out-with normal mealtimes. Visiting hours could be adapted to include mealtimes to enable family members to provide assistance with

feeding and encourage patients to eat. Family involvement in nutritional care could continue from ICU with relatives playing an important role in the social facilitation of eating. Tables and chairs could be provided to allow patients to eat together rather than in or beside their bed. Family members could be encouraged to come in and eat with their relative to further address the social aspects of eating. The effects of social interaction on food consumption has been well documented (de Castro & de Castro 1989, de Castro & Brewer 1992, Clendenen et al 1994). In a study of healthy individuals it was shown that eating with family or friends increased food intake by as much as 44% compared with eating alone (de Castro 1996). The influence of others on eating behaviour has also been shown in hospitalised patients. A study by Wright et al (2006) found energy intake was 36% greater in patients using a supervised dining room compared to those eating beside their bed.

The timing and structure of meals are governed by the organisation; however this system is not patient centred. Naithani et al (2008) identified meal serving times as an organisational barrier to eating in an observational study of hospital inpatients' experiences of access to food. In the study patients reported that meals were served at times that were different to their usual routine. This was detrimental not only to their nutritional intake, as some were not accustomed to eating at set meal times and others were used to having their meals at different times, but also to their emotional well-being. The role that hospital food plays in providing both physical and emotional support to patients during their hospital stay has been identified by Johns et al (2010b). Thus it was evident that hospital food was clearly failing to provide the necessary emotional support to those patients in the study that had expressed issues with timing of meals and meal structure. Hospital culture dictates that food is non-individualised and is provided as a medical treatment (Ferrie 2010). Hospital food is provided for its nutritional properties with a focus on the biological need for nutrients i.e. 'functional meal provision', not the culturally derived food preferences or choices evident in meals provided at home (Batstone 1983).

In order to address these issues a number of recommendations are proposed. First, the ward staff should have a discussion with patients regarding their usual eating patterns and food likes and dislikes. Secondly, where possible meals could be chosen from the menu; however, alternative provision should be made for meals from the canteen if suitable food choices or timing of meals could not be accommodated within the hospital meal service. Thirdly, meals should be served one course at a time as patients with a poor appetite found that having three courses served at one time provided a disincentive to eating. Fourthly, the size of the meals was also found to be off putting for patients with reduced appetites. The influence of appetite on portion sizes was highlighted in a

study of older patients in an acute care setting by Xia and McCutcheon (2006) where patients with poor appetites reported that big portion sizes were unappealing.

Fifth, there should be provision of additional snacks on the ward for patients who struggle to eat sufficient quantities at mealtimes due to early satiety. Snack options could include toast, scones, soups, crackers and cheese, biscuits, custard and rice pudding. By encouraging small frequent meals nutritional intakes could be increased without the need for additional nutritional supplements. Another option to avoid the use of nutritional supplements which were not well tolerated by patients in the study would be for the ward staff to make milkshakes on the ward according to individual preferences. These could be made with fresh milk, ice-cream and fruit providing a nutritious alternative to prescribable supplement drinks. All of these tasks could also be carried out by ward volunteers who would require a training program to equip them with the necessary information and expertise to carry out these tasks. A study by Walton et al 2008 highlighted the benefits of volunteers at mealtimes; providing assistance with eating and encouraging patients to eat which led to a concurrent increase in energy and protein intakes.

Finally, patients in the study were often unaware of the importance of nutrition for recovery and the need to eat foods high in calories and protein to achieve this. There is an identified need therefore for health professionals to have an educational role in providing patients and relatives with information about the nutritional needs after critical illness and provide regular feedback as to whether these nutritional targets were being met. If nutritional goals were not being met then there would need to be a discussion with the patient to see if any solutions could be found.

## **Conclusion**

Despite the plethora of nutrition related research in ICU, little is known about nutritional recovery in patients after critical illness. The findings from this study provide a unique contribution to knowledge by offering important insights into patients' experiences of eating after critical illness. The study demonstrated that existing processes to provide nutritional rehabilitation to post intensive care patients are not effective and, consequently patients frequently fail to meet their nutritional targets. The data from this study suggest that improvements in nutritional care could be achieved by implementing an individualised model of care to address the identified organisational and patient related factors that influence the nutritional recovery of patients after critical illness.