

Knowledge, attitudes and practices in the provision of nutritional care

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Abstract

The nutritional care of patients is one of the primary responsibilities of all registered nurses (Persenius et al, 2008). A poor nutritional status can lead to malnutrition, which can have serious consequences for an individual's quality of life (Field and Smith, 2008). This paper commences with an introduction to the concept of nutrition, provides an overview of nutritional guidelines and nutritional screening tools which identify those at risk of malnutrition. It reviews the literature on nurses' knowledge, attitudes and practices in the provision of nutritional care and debates challenges and opportunities encountered to help nurses ensure adequate patient nutrition.

Key words: Nutritional care, Guidelines, Screening tools, Malnutrition, Knowledge, Attitudes, Challenges, Opportunities.

Introduction

According to Field and Smith (2008) nutrition is a process whereby food is taken into the body and broken down, allowing for a production in energy, necessary for all living cells to maintain their structure and function. A balanced nutritional status consists of a diet comprised of carbohydrates, proteins, fats and dairy products. An excess, deficiency, or imbalance of any of these essential components can lead to poor nutritional status and in some cases malnutrition (Lewis et al, 2004). Malnutrition occurs as a result of a person engaging in an unbalanced diet which lacks certain nutrients, and where food maybe in excess or in the wrong proportions (Kozier et al, 2008). As primary caregivers, nurses are ideally positioned to ascertain the patient's nutritional status and to ensure appropriate measures are taken to optimise nutritional intake for each individual. This paper provides an overview of nutritional screening and explores nurses' knowledge, attitudes and practices to nutrition as well as challenges and opportunities

Guidelines for nutritional screening

At an international level, the Council of Europe (Beck et al, 2001) researched food and nutritional care in hospitals, and subsequently introduced guidelines which focused on improving the nutritional health care of patients (Beck et al, 2001). Two governing bodies: The European Society for Clinical Nutrition and Metabolism (ESPEN) (Kondrup et al, 2003) and the National Institute for Health and Clinical Excellence (NICE) (2006) also outlined nutritional guidelines to be implemented internationally, aiming to improve patients' nutritional health. The expectations of these guidelines are that all healthcare organizations would have specific policies and protocols in place for assessing, monitoring, communicating, and auditing an individual's nutritional status, benefiting patient health and reducing the length of hospital stays for patients. Recommendations from The Council of Europe (2001), ESPEN (2002) and NICE (2006) guidelines are outlined below in *Boxes 1, 2 and 3*.

Patients classified as being at risk of malnutrition include those who have eaten very little in the past five days, those with poor absorptive capacity or who have high nutritional losses, and individuals with increased nutritional needs (NICE, 2006).

The Malnutrition Universal Screening Tool (MUST) report 2003 was produced by the Malnutrition Advisory Group of the British Association for Parenteral and Enteral Nutrition (BAPEN). This report outlines recommendations for nutritional screening and gives an evidence base for the use of the MUST tool in the UK. The report has received support from BAPEN, British Dietetic Association, Royal College of Nursing, Registered Nursing Home Association, and Royal College of Physicians (Elia et al, 2005). However, research has shown proclaiming the use of the MUST tool does not necessarily result in correct detection and care of a patient who is malnourished. Elia et al (2005) found that, 60-85% of patients in UK hospitals, 64% of those in a Norwegian hospital and 73% of those in a Singaporean hospital were not detected as being malnourished, nor did they have referrals sent for further investigations and treatments (Elia et al, 2005). This may have been due to the lack of consistent nutritional screening of patients by nurses, which would indicate that there is a widespread need for consistent nutritional screening to be adapted by local clinical policies, and subsequently reflected in what actually happens in clinical practice.

In Ireland, the Health Service Executive (HSE) (Department of Health and Children, 2009) endorsed the nutritional screening of individuals who are commenced on nutritional supplements (Department of Health and Children (DOHC), 2009). However, as of yet, no gold standard exists for identifying those who are at risk of malnutrition (DOHC, 2009). Corish et al (2004), when examining the efficiency and accuracy of the Nutritional Risk Index (NRI) and the Nutritional Risk Score (NRS) nutritional screening tools in Irish Hospitals, found inconsistencies in the identification of patients who are nutritionally compromised, highlighting the need for a standard nutritional screening tool which would be used consistently in practice.

Box 1. Council of Europe Guidelines (2001)

- Standards for assessing and monitoring a patient's nutritional status should be developed at a national level (Beck et al 2001).
- Improvements in education are required for all staff, including non-clinical staff (Beck et al 2001).
- Meals must be more individualized and flexible to patients' needs (Beck et al 2001).
- The nutritional care of patients must be a multidisciplinary approach, with all staff members working to achieve a common goal – optimal nutritional patient care (Beck et al 2001).
- Hospital management need to acknowledge responsibility for food services and should give priority to developing a food policy (Beck et al 2001).

Adapted from Council of Europe Guidelines (2001)

Box 2. ESPEN Guidelines (2002)

- Every health setting should have a policy for identifying patients at nutritional risk (Kondrup et al 2003).
- It recommends screening patients, monitoring progress and defining outcomes, communicating results and auditing outcomes (Kondrup et al 2003).
- It suggests that all hospitals should have specific policies and guidelines to deal with nutritional screening (Kondrup et al 2003).

Adapted from ESPEN Guidelines (2002)

Box 3. NICE Guidelines (2006)

- That all patients should be nutritionally screened on admission to hospital and screening should be repeated weekly where there is clinical concern (NICE 2006).
- All acute hospitals should have at least one clinical nurse specialist in nutrition and all healthcare professionals involved in direct patient care should receive adequate education and training in relation to nutritional care (NICE 2006).
- A consideration of factors such as: a body mass index (BMI) of less than 18.5, unintentional weight loss which is greater than 10% in the last three to six months and a combination of a BMI less than 20 and a 5% unintentional weight loss in the past three to six months - may be indicative of malnutrition (NICE 2006).

Nutritional screening tools

The following section discusses four of the most widely used nutritional screening tools in clinical practice.

Nutritional Risk Index (NRI) and the Nutritional Risk Score (NRS)

Corish et al (2004) conducted a study at two Dublin teaching hospitals to compare the efficacy of two nutritional screening tools; the NRI and the NRS. The aim of both these screening tools is to diagnose undernutrition. The NRS uses serum albumin concentrations as well as percentage weight loss to assess the individual's risk (Corish et al, 2004). The NRI tool is based on the individuals' BMI, percentage weight loss, appetite and ability to eat, as well as stress factors, in identifying the level of risk and susceptibility an individual has to undernutrition (Green and Watson, 2005). Three hundred and fifty nine admissions were screened in the two hospitals within 48 hours of their admission to the hospitals. Corish et al (2004) found that both screening tools had wrongly classified a considerable number of undernourished patients, while there was a 24% difference between the results of the two tools. According to Corish et al (2004) the NRS had classified 29% of all the patients screened at high risk, while the NRI had classified only 5% of patients screened as high risk. Corish et al (2004) concluded that to assess nutritional risk accurately, sequential measurements over a long period of time is necessary.

Mini Nutritional Assessment (MNA)

The purpose of the MNA tool is to identify members of the elderly population at 'high risk' of malnutrition through routinely screening these individuals (Beck et al 2008). The MNA tool consists of 18 questions which focus on separating patients into the following categories – adequate nutritional status, protein calorie malnutrition and at risk of malnutrition, based on four different areas which affect nutrition as described in *Table 1* (Gupta, 2008).

The assessment has a maximum score of 30 (Beck et al, 2008). According to Beck, numerous cross-sectional studies have been completed to test the validity of the MNA tool. The literature states that those elderly whom were characterized as at a 'high-risk', were also at risk of more serious complications in the future, hence the MNA tool can be said to be valid (Beck et al, 2008). However, Beck et al in 2008 undertook follow up studies of the MNA tool to test its sensitivity and specificity. The research was conducted in elderly individuals aged

60-90 from various settings and found that the tools' tendency to provide 'false' positives was high – meaning it often over-diagnosed individuals at a high risk, hence causing unnecessary expense. Another limitation of the tool is that it only targets healthy elderly individuals as many of the questions pointed to those who lived healthy independent lives, in comparison to frailer individuals in care (Beck et al, 2008).

Table 1. Sample of questions asked from MNA Tool

Anthropometric Assessment	dietary assessment	general assessment	subjective assessment
Height, weight, and weight loss	Related to meals. food and fluid consumption	Focused on medication and lifestyle	Regarding an individual's self perception of nutrition in relation to the importance of nutrition to health care

Source: Gupta 2008

Malnutrition Universal Screening Tool (MUST)

The main difference between MUST and the MNA tool is that MUST can be used with all age groups in a variety of settings, and not just the elderly (Malnutrition Advisory Group, 2006). The purpose of the tool is to detect signs of undernutrition from patients' body mass index (BMI), weight loss, and percentage of unplanned weight loss as well as the presence of disease (Bailey, 2006). Screening is repeated at regular intervals and the tool is documented as having a high degree of reliability (Kondrup et al, 2003). The tool categorises people into low, medium, or high risk and is practical and easy to use (Malnutrition Advisory Group, 2006). According to the Malnutrition Advisory Group (2006) the tool is valid, and with the appropriate nutritional intervention outcomes can be improved. In a review conducted by Bailey (2006) on the implementation of the MUST tool in a pilot study on surgical and medical wards, the results proved that the tool can have a positive effect on clinical practice with support, training, and leadership from management. According to Edmonds (2007) adequate nutrition is essential for surgical patients as nutritional requirements are raised during the healing process. A poor nutritional state is associated with impaired wound healing. Therefore, the individual will be more susceptible to infection as a result of a suppressed immune system (Edmonds, 2007). Inadequate fluid intake increases an individual's chances of many conditions, for example, urinary tract infections, pneumonia, falls, confusion, disorientation and electrolyte imbalances (Welch, 2008). Consequently, it is essential that nurses have adequate knowledge to be able to identify and meet the nutritional and fluid needs of surgical patients (Edmonds, 2007). It is widely acknowledged that nurses provide nutritional care for patients in a variety of settings. This is crucial as Lewis et al (2004) describes the consequences that malnutrition can cause:

- Impaired immune function
- Reduced respiratory functioning
- Impaired wound healing
- Reduced muscle strength
- Increased fatigue
- Increased depression and self-neglect

The importance of nurses' knowledge, attitudes and practices in the provision of nutritional care

The 2006 UK National Institute for Health and Clinical Excellence (NICE) Guidelines on the nutritional support of adults recommended that all health professionals directly involved in patient care should receive education and training on the importance of providing adequate nutrition. Therefore, it would be expected that nurses who have direct interactions with patients would be equipped with the appropriate knowledge and attitudes to detect those who are at risk of malnutrition and provide accurate, practical, and consistent dietary advice that is appropriate to the specific nutritional needs of the patients. The following section provides an overview of nurses' knowledge, attitudes and practices in the provision of nutritional care.

Nurses' knowledge of nutrition

Kobe (2006) undertook a descriptive study which aimed to investigate nutritional knowledge, attitudes, and practices of registered nurses working on surgical wards in the Kenyatta National Hospital. The response rate was 63%, out of the 160 Kenyan nurses surveyed. The researcher used a validated questionnaire instrument, which consisted of 47 socio-demographic questions, and also questions relating to knowledge, attitudes and practices (Kobe, 2006). Basic nutrition focused on questions regarding the function of and sources of nutrients, dietary goals and food safety. Clinical nutrition focused on energy contents and metabolic requirements, methods of feeding, and choices of nutrient administration. Kobe (2006) found that overall nurses' knowledge was weak, particularly regarding questions on knowledge of nutrition for both basic and clinical nutrition questions and recommended that more emphasis is needed on nutrition during nurses' training at undergraduate level (Kobe, 2006). The study had limitations as only one department in a hospital was surveyed (Kobe, 2006). In contrast to Kobe (2006), no published studies were identified in Ireland regarding the nutritional knowledge of graduates in the provision of nutritional care for patients. Irish nursing students are taught a nutrition module as part of the BSc. Nursing (General) programme, however, no published studies were found regarding the application of their theoretical knowledge to clinical practice. The authors advocate more research in this area, as the level of nutritional knowledge a nurse has will influence nurses' attitudes and practices to the provision of nutritional care for the patient.

Attitudes and practices to nutrition

The opinion that nutrition is of lower priority than other practices in nursing is supported by Mowe et al (2006), who conducted a quantitative study, by mailing a questionnaire about nutritional attitudes and practices to 6000 doctors and 6000 nurses in Denmark, Sweden, and Norway. The questionnaire examined their attitudes and practices in relation to screening and monitoring of patients. The response rate was 4512 (1753 doctors and 2759 nurses). The low response rate may reflect a low level of interest in nutrition and illustrates that doctors and nurses perceive nutrition to be inferior to other tasks (Mowe et al, 2006). Significant differences in standards were identified between the three countries. Denmark was identified as nutritionally screening patients the most, with a 'yes' response of 40%, which compares to 21% in Sweden and 16% in Norway (Mowe et al, 2006). The results of measuring body weight on admission were: Denmark 52%, Sweden 55%, and Norway 26%. Meanwhile the majority of respondents did not think that patients needed to be screened. Only 25% of respondents believed that nutritional screening patients was routine, therefore concluding that only a minor group of patients at risk of malnutrition are identified (Mowe et al, 2006).

Indeed, the study conveys that nutritional practice was poor in all countries surveyed, and that the standards recommended by ESPEN were not fully implemented. For example, 89% of respondents believed that a treatment plan should always be documented in the patients'

records; however, only 14% of respondents kept a nutritional plan in the patient's notes (Mowe et al, 2006). In 2008 Mowe et al completed further research into the topic of attitudes and nutritional practices. A questionnaire was again distributed to 6000 doctors and 6000 nurses in Denmark, Norway, and Sweden. Mowe et al (2008) again found lack of interest to be a factor in nurses' attitudes towards nutritional screening. The average response rate to the survey from nurses was 46%. The main findings from the research were that nurses did not perceive nutrition as important; they lacked interest in the area, and perceived it to be less relevant to other tasks.

Furthermore, Holst et al (2009) conducted a quantitative study using questionnaires to investigate Scandinavian nurses' attitudes and practices to nutrition. The questionnaire was distributed to 6000 nurses, with a response rate of 2759. Respondents reported a positive attitude towards nutrition; however, their nutritional practices did not reflect this. For instance, 90% of respondents had a positive attitude towards nutritionally screening patients on admission, at the same time, only one-third of the nurses actually carried out nutritional screening on admission (Holst et al 2009). A finding of the study showed that documentation of nutritional care plans in the patient's records was given a high priority among nurses (93%), but this was rarely followed through in practice. In addition, routine monitoring of patients' nutritional status was also a conflicting area among the three countries, with Denmark reporting 56%, Norway 20%, and Sweden 28% of nurses monitoring nutritional intake in those at nutritional risk (Holst et al, 2009). A report conducted by Age Concern (2006) identifies nursing staff as the key individuals responsible for the nutritional needs of individuals in hospital, who need to monitor patients routinely at mealtimes, to ensure that the necessary documentation, such as food charts, is completed. However, a study conducted by Holst et al (2009) found that although nurses believed that patients' energy and nutritional intake should be closely monitored, less than half of these nurses reported that nutritional intake was a clinical concern when undertaking ward rounds.

Persenius et al (2008) carried out a descriptive quantitative research study. The aim was to assess nurses' perceptions and practices in relation to nutrition. Fifteen nurses were interviewed via telephone; following a semi-structured interview guide, and 131 registered nurses participated by completing a questionnaire, which was a response rate of 72% (Persenius et al, 2008). The study conveys that although nurses believed malnutrition to be evident in their workplaces, only half of patients were nutritionally screened on a frequent basis. The research indicates that nurses nutritionally assessed vulnerable patients – which they characterized according to their age, condition, diagnosis, and treatment or care (Persenius et al, 2008). The majority of participants documented a brief outline of the patient's nutritional condition, for instance, ability to eat and drink, swallowing difficulties, nausea/ vomiting, etc. However, little thought seemed to be given to a more detailed assessment such as screening tools, BMI, percentage weight loss (Persenius et al, 2008). It appears from the studies explored that the nutritional screening of patients seems to be given low priority (Mowe et al, 2006). The literature also identifies many challenges and opportunities to providing nutritional care.

Challenges and Opportunities

The following section discusses the challenges nurses encounter and the opportunities available when providing nutritional care which would benefit patients.

Challenges

Lindorff-Larsen et al (2007) suggested that barriers to nutritional screening by nurses included a lack of knowledge, interest, and defined responsibility. A survey conducted by the Royal College of Nursing of more than 2000 nurses across the UK claims that patients are at risk of malnutrition (Waters, 2007a). A number of factors were cited as challenges to providing adequate nutrition. These included; inadequate numbers of staff to help patients at mealtimes, not enough staff to monitor food and fluid consumption, and the prioritization of other nursing duties, such as medical rounds and routine nursing observations, before nutrition (Waters 2007a; Waters, 2007b). Furthermore, the timing of meals, tests and examinations and the occurrence of staff nurses' breaks at patient mealtimes (therefore reducing staff numbers at mealtimes) have all accumulated to the problems of patient nutrition (O'Reagan, 2009).

Kobe (2006) found role ambiguity was identified by nurses as a challenge to providing adequate nutrition. For example, only 32% of nurses felt that they should help with assisting patients to eat, and 8% felt that the nutritional management of patients was the role of the dietician/nutritionist and not the nurse owing to the nurses' workload (Kobe, 2006). At the same time, if nurses delegate nutritional care to other members of the multidisciplinary team, they will not be able to accurately document patients nutritional intake, as documentation of such findings may not be part of other health professionals' roles and responsibilities (Kobe, 2006).

Opportunities

Protected mealtimes are an initiative which was introduced as a way of allowing patients time to enjoy their food, free from interruptions (Waters, 2007b). During protective mealtimes, all non-urgent clinical activity is halted, therefore allowing staff the time to provide assistance in a relaxed atmosphere at their own pace (O'Reagan, 2009). A reduction on contacting doctors at mealtimes unless necessary and a change to visiting times for relatives are seen as the way forward in reducing time pressures, which is seen as one of the key factors in inhibiting the provision of effective nutritional care to patients (Waters, 2007b). Accordingly, new times should be agreed for tests between the different departments, except in cases of urgency (Murray, 2006).

A red tray initiative which involves serving food on a tray which is a different colour to the standard colour was first implemented on a trauma rehabilitation unit as a result of a 'trigger' incident, in which an untouched tray of food was removed from a vulnerable patient on the ward (Bradley and Rees, 2003). Implementing the red tray initiative can be used as an opportunity for nursing staff to ensure that patients will be afforded the necessary time to have their meals. Nurses will accurately observe and document the patient's level of food consumption prior to the removal of the tray. Domestic staff must be aware of the nurses need to document the patients food consumption and the need to leave the tray until authorization has been granted by the nurse (Snow, 2006).

Finally, while assessing a patient's nutritional status it is important that nurses develop a nutritional care plan unique to each patient; therefore, allowing appropriate care to be established (Coxall et al, 2008). Accurate recording and documentation is essential, nutrition should be viewed as equally as important as any medication or treatment (Coxall, et al 2008).

Conclusion

The nutritional care of patients is the primary responsibility of all registered nurses. This literature review highlighted the importance of nutritional guidelines and screening tools which identify those at risk. The medical effects of malnutrition were identified. This literature review examined nurses' knowledge, attitude, and practices in the provision of nutritional care to patients. The studies identified that although nurses believed nutritional problems existed in their workplace, low priority was demonstrated towards nutrition when nurses had to prioritize other nursing practices. Inadequate knowledge was cited in many of the studies as a key factor for the inconsistencies in the nutritional screening of patients. Developing nutritional teams and the provision of further education are recommended as solutions to reduce the nutritional problems as experienced by patients coming into contact with our health services.

Key Points

- Nutritional care of patients is a primary responsibility of registered nurses and is essential to maintaining optimum health, preventing complications, and improving wound healing
- Despite established nutritional guidelines such as ESPEN (2002) and NICE (2006), as well as a variety of nutritional screening tools, at present no gold standard exists for identifying those at risk of malnutrition
- The research identifies that although nurses recognize nutritional problems exist, they are not given priority among other duties
- Inadequate knowledge is cited in many studies as a key factor for inconsistencies in patients' nutritional screening
- Staff levels, doctors ward rounds and routine nursing observations are among the challenges which prevent nurses from providing adequate nutritional care
- Protective mealtime initiatives could improve the provision of nutritional care, contacting doctors, conducting visits and examinations during mealtimes only in particularly urgent circumstances.

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