

Assessing Nursing Enteral Nutrition Practices and Perspectives in An Intensive Care Unit of A Level Six Hospital in Kenya

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ABSTRACT---

Background: Adequate nutritional support is important for the comprehensive management of patients in intensive care units (ICUs).

Aim: The study was aimed to survey prevalent enteral nutrition practices in the general intensive care unit, nurses' perception, and their knowledge of enteral feeding.

Study Design: The study was conducted in the ICU of a level 6 hospital in Kenya. The study design used was crosses sectional descript study.

Materials and Methods: thirty four questionnaires were distributed and the results analyzed. A database was prepared and analyzed.

Results: all (100%) questionnaires were filled and returned. A majority (32) of staff nurses expressed awareness of nutrition guidelines. A large number (27) of staff nurses knew about existence of nutrition protocols in the ICU. Almost all nurses (82.4%) chose enteral nutrition as their preferred route of nutrition unless contraindicated. All staff nurses were of the opinion that enteral nutrition is to be started at the earliest (within 24-48 h of the ICU stay). Half (50%) were of the thought that the absence of bowel sounds is an absolute contraindication to initiate enteral feeding. Passage of a nasogastric tube (Ryle's tube) was considered mandatory before starting enteral nutrition by 86% of the respondents. Everyone knew that the method of Ryle's tube feeding in their ICU is intermittent boluses. Only 4 staff nurses were unaware of any method to confirm Ryle's tube position. The backrest elevation rate was 70%. Gastric residual volumes were always checked, but the amount of the gastric residual volume for the next feed to be withheld varied. The majority said that the unused Ryle's tube feed is to be discarded after 24 h. The most preferred (48%) to upgrade their knowledge of enteral nutrition as a personal initiative and CME.

Conclusion: Information generated from this study can be helpful in identifying nutrition practices gaps and may be used to review and revise enteral feeding practices where nec essary.

Keywords--- Enteral nutrition, intensive care, nursing, tube feeding

1. INTRODUCTION

Enteral nutrition has a vital role in the care of critically ill patients. Enteral nutrition has been demonstrated to maintain the function of the gastrointestinal tract (GIT) (Moreira and McQuiggan, 2009), improve wound healing (Drover et al., 2010), reduce complication rates and length of stay in the intensive care unit (ICU) (Moreira and McQuiggan, 2009). As such, enteral nutrition is considered routine in the care of patients in intensive care (Cahill et al., 2012, Cahill et al. , 2011, Dietitians Association of Australia, 2011, Heyland et al. , 2003, McClave et al. , 2016). According to American Society for Parenteral and Enteral Nutrition, enteral nutrition is liquid nutrition given through a tube and delivered directly into the stomach or small bowel. This liquid nutrition contains protein, carbohydrates (sugar), fats, vitamins, and minerals that are needed when a patient is unable to attain an adequate oral intake (ASPEN, 2014). The aim of enteral feedings is to improve or maintain a patient's nutritional status (National Center for Biotechnology Information, U.S. National Library of Medicine, 2006). enteral nutrition helps; To preserve the patient's lean body mass, maintain the body's immune function and to avoid any metabolic complications by positively changing the immune response as well as prevent cellular injury (McClave et al., 2009). Advantages of enteral nutrition include better preservation of the function and structure of the gastrointestinal tract, fewer infections as compared to parenteral nutrition, and lower cost (Merck Sharp & Dohma Corp., 2013). Enteral feedings should be considered for patients when they cannot take enough nutrition orally. Patients that do not receive recommended total daily calories also have a longer hospital length of stay (Elpern et al., 2004) as well as

increased costs related to the hospitalization (Norman et al., 2008). According to a study by Rubinson, et al (2004), patients that received less than 25% of their recommended calories a day are associated with an increased risk for nosocomial bloodstream infections.

Nurses play a key role in implementing the nutritional plan of care for critically ill patients (Cahill, Murch, 2012), including advocating for early commencement of enteral nutrition, assessment of calorie requirements, and initiating, titrating and administering the feed (Fullbrook et al., 2007, Marshall and West, 2006, Wentzel Persenius et al., 2006). However, deficits in nursing knowledge (Behara et al., 2008, Cahill, Murch, 2012, Mowe et al., 2008a, Wentzel Persenius et al., 2009), lack of compliance with nutritional guidelines (Behara, Peterson, 2008), and inconsistencies in practice contribute to malnutrition and underfeeding in critically ill patients (Cahill, Murch, 2012, Marshall et al., 2012).

2. SUMMARY

Critically ill patients are at increased risk for malnutrition because of metabolic disturbances experienced during critical illness and impaired delivery of nutrients. Malnutrition is common in critically ill patients and is associated with poor outcomes for patients and increased health care expenditures. Interventions and strategies to diminish time spent without enteral feeding, including HOB elevation during positioning and provision of nursing care, the use of prokinetics when medically appropriate, Gastric Residual Volume assessment, consideration of post pyloric feeding access, and use of a nutrition support protocol can help nurses to improve patients' outcomes

3. RESULTS

Demographic data of the respondents

The researcher sought to know the demographic of the respondents in the organization this was considered important as in many organizations.

Table 3.1: Demographic data of the Respondents

		Frequency	Percentage
Gender(patients)	female	21	61.8
	male	13	38.2
Age(staff)	20-34 years	14	41.2
	35-49 years	8	23.5
	50-64 years	8	23.5
	65 years or older	3	8.8
Working experience	0-5 years	13	38.2
	6-10 years	14	41.2
	11-15 years	7	20.6

The majority of the staff working in intensive care unit is female compared to males, with an age bracket of 20-34 while 35-49 years and above 50 years were 23.4%. Working experience revealed that 41.2% of the respondents had worked in the unit for 6-10 years, 38.2% for 0-5 years, and 20.6% for 11- 15 years.

Primary Clinical Specialty

The majority of the nurses were icu trained 73% while 27% not trained.

Awareness of any enteral nutrition protocol

This sought to establish staff awareness on existence of enteral nutrition protocol.

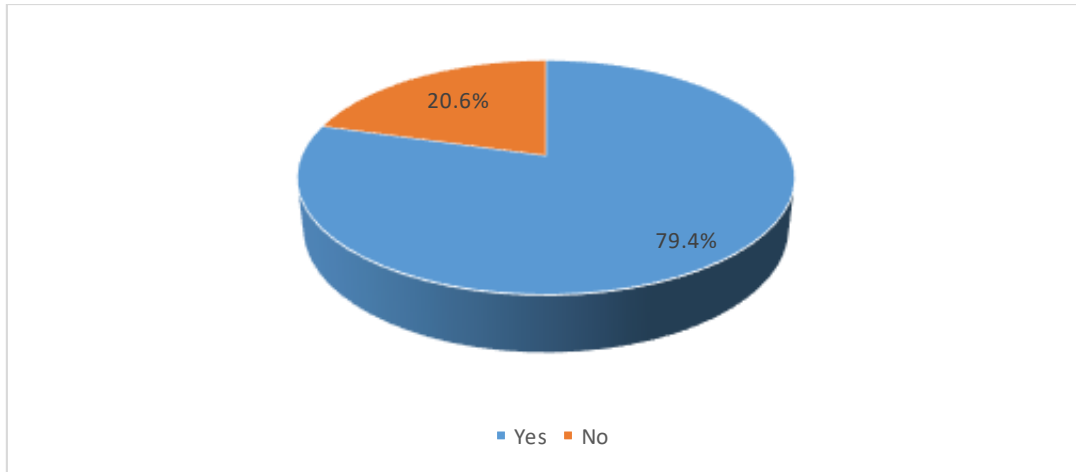


Figure 3.1 Awareness of any enteral nutrition protocol

A good number of nurses 79.4% (27) were aware while 20.6% were not aware of existence of enteral nutrition protocol.

Preferred route of nutrition in ICU

The researcher highlighted two types of nutrition and asked the staff to establish the preferred one. The results are indicated in **Figure 3.2**

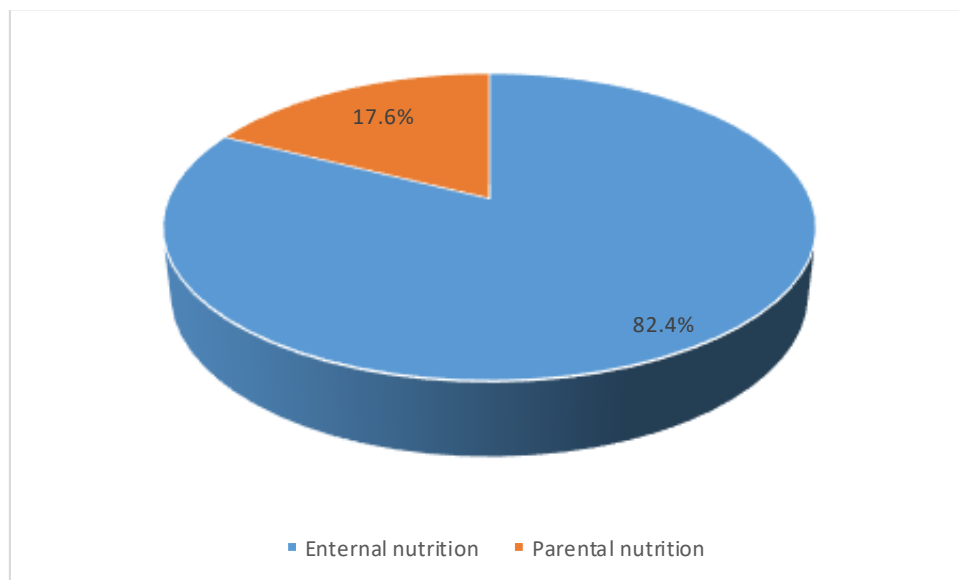


Figure 3.3 Preferred route of nutrition in ICU

The researcher established from the findings that majority 82.4% indicated that enteral nutrition was the preferred route of nutrition in the ICU

When to initiate enteral nutrition

The result on how early enteral nutrition should be started is presented in **Figure 3.3**

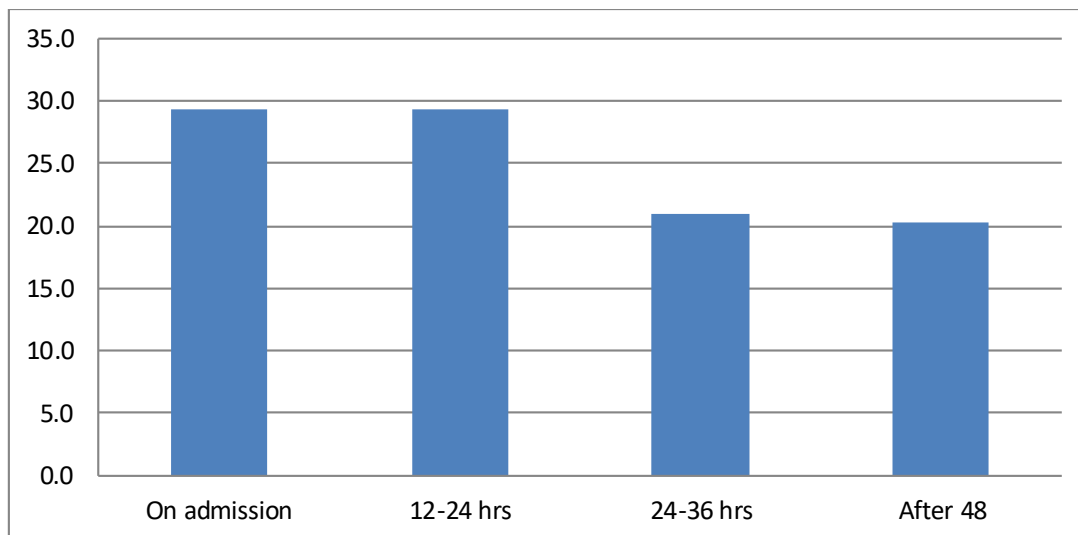


Figure 3.3 when to initiate enteral nutrition

this researcher established that majority 29.4% were of the opinion that enteral nutrition should be started on admission which were same as those who cited that be started between 12-24 hours. There were others who cited be started between 24-36 hours and after 48 hours

Mode of Rylestube feeding

The study sought to find out the most common way of administering enteral feeds and the findings was that 88.2% used intermittent bolus mode while 11.8% preferred continuous infusion

How to Confirm Ryles tube position.

The study sought to establish how the staff confirmed Ryles tube position in the ICU.

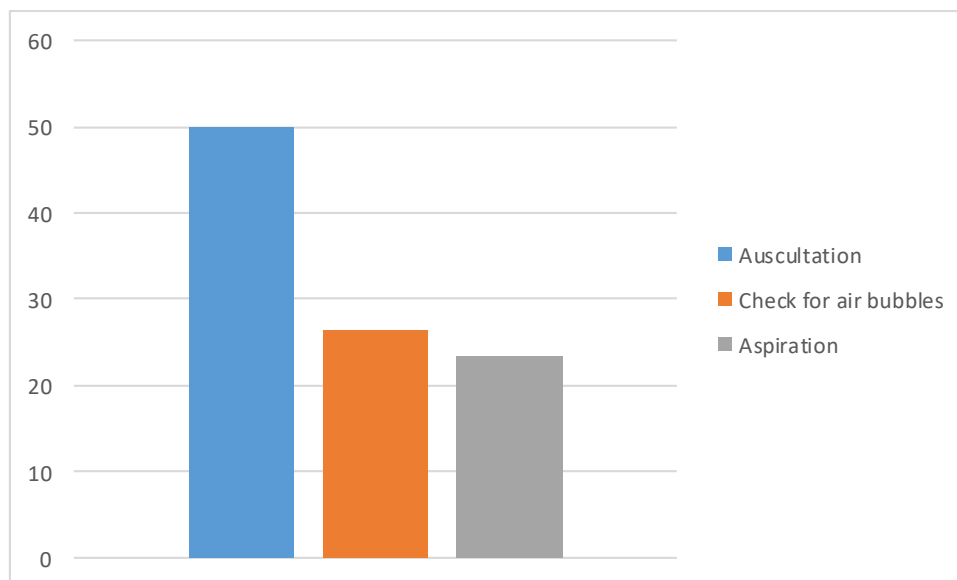


Figure 3.4 how to Confirm Ryles tube position.

Fifty percent (50%) of the total respondent used auscultation, while 26.5% cited checking air bubbles and 23.5% cited aspiration.

Feeding Instructions

The researcher sought to establish if there were instructions regarding administration of enteral feeds **Figure 3.5**

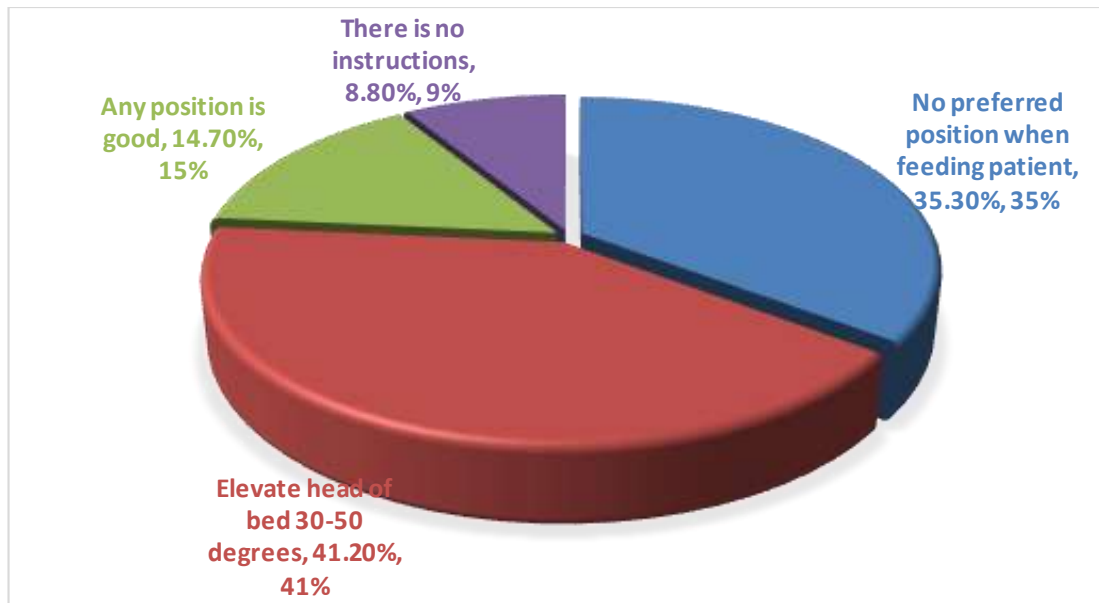


Figure 3.5 Instructions regarding administration of enteral feeds

Majority 41.2% cited that Elevation of the head of bed 30-50 degrees, 35.3% cited that there were no preferred position when feeding patient.

Ryles tube feeds supplied

The study showed that 94.1% of the feeds supplied was prepared as blenderized from the unit kitchen and the remaining is both parenteral and industrial enteral feeds

Amount of residual gastric volume for feeds to be withheld

It was the objective of the researcher to establish the amount of residual gastric volume for which feeds is to be withheld. The responses are as shown in **figure 3.6**

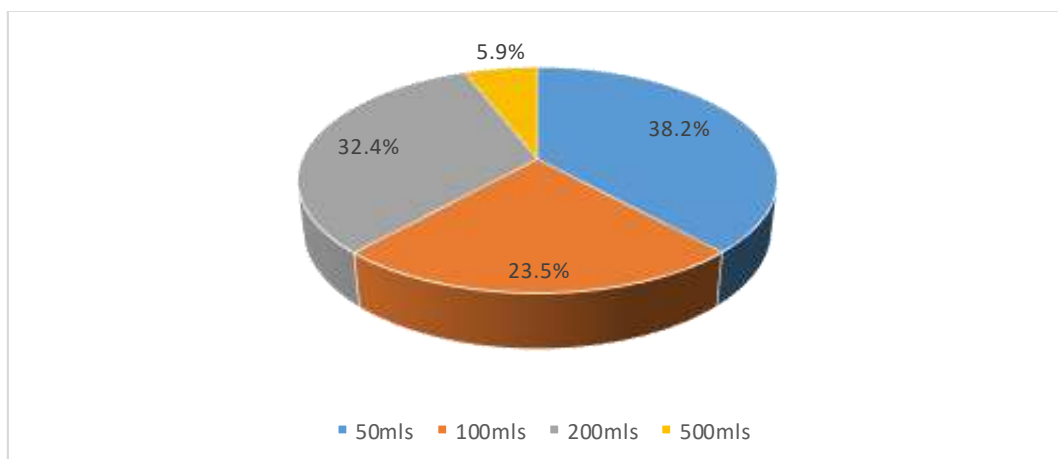


Figure 3.6 Amount of residual gastric volume for feeds to be withheld

Varied reactions were noted 38.2% cited 50mls, another 32.4% indicated 20mls and 23.5% cited 100mls. There were 5.9% who indicated 500mls. Further asked they indicated that the amount varied with patient status and age.

After how long are the supplied feeds discarded

This was to establish the time in which the supplied feeds is discarded, the response were as shown **Figure 3.7**

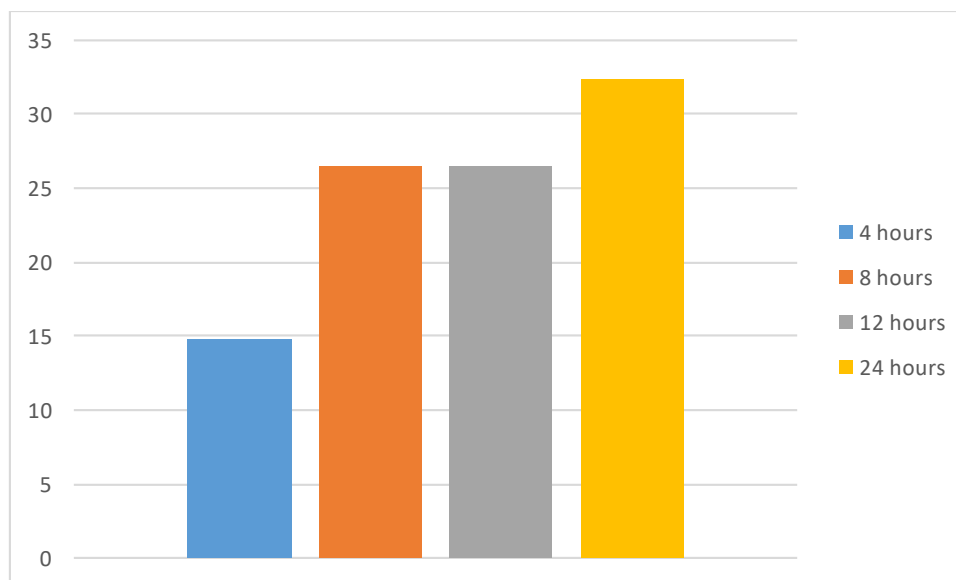


Figure 3.7 after how much time are the supplied feeds discarded

Majority of the respondents 3.4% cited 24 hours, 26.5 indicated after 8 hours and 12 hours respectively

4. DISCUSSION

4.1.3 Staff Knowledge and Enteral Nutrition Practice.

Studies suggest that the use of a feeding protocol improved nutrition to ventilated patients and increased patient outcome (Mackenzie et al, 2005) It was established that majority 27 respondents representing 79.4% were aware while only 7 or 20.6% were not aware. The respondents indicated that auscultation is the way in which ryles tube position is confirmed in ICU this was according to 17 or 50% of the total respondent. There were others 26.5% who cited checking air bubbles and 23.5% cited aspiration. Majority 29.4% of the staff indicated that enteral nutrition should be initiated within the 24 hours. On feeding instructions 41.2% had knowledge while 35.3% had no knowledge on this based on raising head of bed while feeding, GRV there was varied understanding on the amount of aspirate to warrant stoppage of feeds; 38.2% -50mls, 32.4% -20mls 23.5% -100mls, >200 mls of aspirate is considered to be high gastric residual volume thus should be discarded as an output (Aspen clinical task force, 2002) generally this contradicts the existence of feeding protocols.

4.1.2 Patient's Head Positioning During Tube Feeding

In both the questionnaire and the case note review, head elevation was common, a finding that is not in accordance with Persenius *et al.*, (2006), who found minimal head elevation by nurses. However, this may not be conclusive, because these authors used a more objective method of data collection which is bedside observation. In this study it was also observed that nurses reported different positions although similar to head elevation, i.e. semi fowlers, upright, sitting; while none mentioned a specific angle. The reason for this could be that in practice at the hospital under study, head angle is estimated. Similar findings were reported by Dillon, Munor and Grap (2002), where 67 nurses participated in an observation study and the findings were that nurses were accurate in estimating bed angles, thus concluding that nurses are able to estimate backrest elevation accurately. All this is in line with current guidelines which mention that unless contraindicated, the head of the bed should be elevated at 30 to 45 degrees during intermittent feeds to minimize Aspiration, and where not possible; should be elevated by as much as 15 degrees (ASPEN Board of Directors and clinical guidelines Task Force, 2002).

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Knowledge and skills of the healthcare team in nutrition management and the availability of management protocols are important in maintaining optimal nutrition for critically ill patients. Increased nursing awareness of nutritional assessment through providing training programs and surveillance of clinical performance is necessary. Management should be concerned with offering an accessible source of knowledge, the required equipment and documentation systems. Enhancing collaboration between health care providers and offering appropriate counseling should also be emphasized.

5.2 Recommendations

The study recommended that;

- There is need to develop an evidence-based enteral nutrition feeding protocol for ventilator dependent

- patients.
- A standardized nutrition protocol giving clear instructions on when feeds should be initiated, ryles tube insertion, positioning of patients and when feeding is to be withheld based on gastric residual volume. use of a feeding protocol improves nutrition to ventilated patients and increases patient outcomes
 - Make reading materials available for reference and continuous education programs be initiated to help staff be up to date on enteral nutrition practices.

5.3 Area for further research

Based on research findings, evidence-based practice guidelines should be developed using available evidence. The study suggest that further studies be done to determine the best methods to define nutritional adequacy and evaluation of nutritional status of patients, best methods of estimating energy requirement in varied setups and the role of nutrition in icu patient outcome.

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