

An Investigation on the Phenomenon of Parental Care for Infants Receiving Nutrition via a Nasogastric Tube

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Abstract

As the population ages, there is a corresponding rise in the number of patients experiencing dysphagia, leading to an increase in the occurrence of enteral feeding. Healthcare professionals have a crucial role in providing information to patients and caregivers about the different options available for long-term home enteral feeding, helping them make informed decisions. Post-stroke, dysphagia frequently occurs, necessitating the use of a naso-gastric (NG) tube for feeding. NG tubes are commonly displaced, which can result in the inadvertent aspiration of feed or fluids into the respiratory system. Preventive measures for this issue encompass securing NG tubes to the face, utilizing hand mittens, and employing nasal bridles. Despite healthcare professionals seeing superior outcomes with the use of PEG, NGT continued to be the preferred method. Collaborating with patients can strengthen their decision-making regarding enteral nutrition, while enhancing the knowledge and ability of healthcare professionals can improve the consistency of treatment they deliver.

Keywords- *nasogastric tube feeding, nasogastric tube, dysphagia, infants*

1. Introduction

Nasogastric tube feeding is a commonly employed method of providing nutritional support, either as the sole source or as a supplement to oral intake. Typically, this is appropriate for individuals who have malnutrition or are at risk of malnutrition, have insufficient or dangerous oral intake, but have a functional and accessible gastrointestinal system.

The advantages of nasogastric tube feeding encompass enhancing patients' nutritional status, mitigating the catabolic response to injury, promoting wound healing, preserving the integrity of the intestinal mucosa, diminishing the translocation of intestinal bacteria, and minimizing septic consequences.

While the use of a nasogastric tube is a commonly done treatment by skilled healthcare professionals and generally regarded safe, it is important to note that it is not without risks.

There are potential hazards associated with the process of inserting and removing a tube. Multiple accounts have reported instances in which the nasogastric tube, when put without visual guidance, advanced into the respiratory system^{4,5} and remained undiagnosed.

Pneumothorax, a potentially serious ailment, may arise in this situation. The number is . Between April 2018 and February 2019, the National Health Services reported 29 instances of 'never occurrences' where food was mistakenly administered through the nasogastric tube into the respiratory tract. Seven Furthermore, there is a potential for the tube to shift and relocate due to motion and handling, which might result in the inhalation of stomach contents, posing a severe risk. The number is 8. This can also occur as a result of gastroesophageal reflux. Incorrect patient positioning during and after feeding, tube displacement, feeding intolerance, and gastrointestinal dysfunction (such as gastric retention or bacterial contamination) are factors that elevate the likelihood of aspiration.

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A significant number of newborns who start their lives in a neonatal intensive care unit (NICU) or a Special Care Nursery (SCN) rely on a feeding tube, such as an oro-gastric tube, a nasogastric tube (NGT), or a gastrostomy tube, to meet their nutritional requirements.

The necessity of tube feeding is intricately intertwined with the complex medical and/or surgical issues that require the insertion of the tube. The parent's interpretation of the tube can often be challenging to separate from their encounter of having a baby with a life-threatening condition.

Infants are being discharged from the hospital more often while still relying on a feeding tube to ensure their growth. Parents must acquire the skills necessary to effectively administer tube feeding in order to facilitate the release of their newborn to their home.

In addition to acquiring knowledge about the intricate procedure of administering a tube feed, numerous parents also take up the task of inserting the nasogastric tube (NGT) through their baby's nasal path and pharynx to the esophagus whenever it requires replacement.

2. Literature Review

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The quantitative research provides evidence of physiological benefits and some supporting data on the psychosocial impact of tube feeding (Tawfic, Dickson, Clarke & Thomas, 1997).

According to Smith, Camfield, and Carol (1999), in addition to the medical and mechanical issues related to the tube installation, 28% of families experienced difficulties with their family dynamics and experienced stress. The data obtained from this investigation were analyzed utilizing a quantitative methodology. The study conducted by Smith et colleagues identified several distinct psychosocial issues, including limited physical mobility, challenges in accessing respite care, strain on the parent-child connection, and the child's need for the sensory experience of tasting food.

Children who are fed by a tube have been seen to undergo significant levels of stress, which is linked to the seriousness of their medical condition and the continuous demands of caregiving for prolonged periods of time. The stress levels of parents with children who require tube feeding were shown to be higher compared to two control groups. The reference is from the work of Pederson, Parsons, and Dewey (2003).

Craig, Scambler & Spitz (2003) utilized semi-structured interviews and constant comparative methodology to identify the following themes: feeding experiences, referral process, importance of oral feeding, child's enjoyment of feeding, skill maintenance, perceived benefits and the need for evidence, complications of the procedure, the anti-reflux procedure, and emotional and support requirements. The authors suggest that it would be advantageous for families and physicians to engage in conversations about their aspirations, anticipations, and constraints regarding the procedure before the surgery takes place. They also propose that these discussions should be revisited after the surgery, taking into account the same considerations.

Two papers in the nursing literature discuss the experience of long-term gastrostomy in children with disability. These articles include perspectives from nursing staff. The first piece is written by Thorne, Radford, and McCormick in 1997, while the second article is written by Radford, Thorne, and Bassingthwaite, also in 1997. The articles, which were derived from qualitative research, analyzed the perspectives of a cohort of nurses and a smaller cohort of parents.

The identified categories included: loss of hope, cessation of the struggle, convenience for caregivers, surrendering normalcy, and maternal failure.

The adaptation of the family to a long-term physical disorder was affected by individual variables, social-environmental factors, and the way stress was dealt with (Wallander & Varni, 1998). Within a comprehensive examination of existing research, specifically focused on families dealing with chronically ill children,

In Meleski's (2002) study, the author examined the concept of shifting duties and the state of disequilibrium that occurs during transition periods. Additionally, the study explored the experience of chronic grief.

O'Brien & Wegner (2002) identified a discrepancy in the way home care nurses and parents perceive the care of technology-dependent children. The authors suggested enhancing communication and collaboration between parents and home care nurses.

3. Discussion

An examination of parental stress in the newborn intensive care unit offers valuable information regarding the specific age group that is the focus of the present study. Dudeck and Shriver (2004) employed a parental stress assessment tool to examine factors that can forecast parental stress. Elevated levels of stress were observed in relation to the parental role and the presence of the infant.

Franklin & Rodger (2003) conducted a study on the viewpoints of parents and the psychological and social consequences of feeding their children. The study involved conducting detailed interviews and observing mealtime interactions. The following themes were identified: concern for the child's well-being, emphasis on the parent-child bond, heightened parental duties and adaptation, and management of persistent stress. The move towards examining the parent-child interaction may suggest a growing emphasis on both the baby and the parent.

There were a few tweaks and additions to the daily quality rounding checklist in addition to the five main treatments included from the IHI bundle. As part of the VAP bundle, we implemented six interventions in SICUs. To ensure that all ventilated patients in the intensive care unit (ICU) followed the daily protocol for standard care, a bedside VAP bundle quality rounding checklist was utilised, which was adapted from the IHI bundle⁸. The specifics of this procedure are displayed in Table 1.

Table 1. Requirements for providing high-quality VAP bundle care on a daily basis

Interventions	Checkers
Direct elements that decrease infections	
Hand hygiene before and after intubation procedure and patient contact	Nurse
Aspiration prophylaxis	
Head-of-bed elevation	Nurse
Adequate endotracheal tube cuff pressure	Respiratory therapist
Oral cavity secretion clearance before changing position or supination	Nurse
Oral care with chlorhexidine solution every 8h	Nurse
Deep vein thrombosis	Doctor
Peptic ulcer disease	Doctor

Charlson Complex Illness Index

Based on the International Classification of Diseases (ICD), the Charlson Co-morbidity Index was developed to classify patients' co-morbidities. It forecasts the 10-year survival rate in patients with numerous co-morbidities and is composed of 19 types of co-morbidities. The severity of each illness and the related mortality rate determine its score, which ranges from 0 to 6. There were no co-morbidities detected if the score was 0, and more co-morbidities were indicated by higher scores. There is an almost 100% chance of death after one year for patients with a score greater than 5 [18]. With a score of 0 on the scale, the anticipated 10-year survival rate was 98%, 1 point was 96%, 2 points was 90%, 3 points was 77%, 4 points was 53%, 5 points was 21%, 6 points was 2%, and 7 points or more was 0%.

There is substantial evidence that supports the validity and reliability of the Charlson Co-morbidity Index. Excellent reliability was suggested by the Alpha Coefficient for the Charlson Co-morbidity Index, which ranged from 0.86 to 0.95 for its internal consistency [19]. Using test-retest reliability and Cronbach's Coefficient Alpha, which was 0.92 ($P < 0.001$), the present study examined the Charlson Comorbidity Index's dependability.

section IV)

CPIS (Clinical Pulmonary Infection Size)

Pugin et al. (1991) [13] created the Clinical Pulmonary Infection Score to make the diagnosis of VAP easier. The first five items, which include the patient's temperature, white blood cell count, tracheal secretions, arterial oxygen saturation ($\text{PaO}_2/\text{FiO}_2$), and a chest radiograph, are used to calculate the CPIS. When gramme stains or cultures came back positive, two more points were added to the CPIS baseline score to determine the CPIS cultures. A total of zero to twelve CPIS is possible. A CPIS score below six indicates the absence of VAP, while a score above six either at baseline or after adding the culture result is indicative of VAP.

The CPIS demonstrated a good level of validity when administered to patients on mechanical ventilation ($r^2 = 0.233$, $p < 0.0001$). Fifty adults on mechanical ventilation were the subjects of a study that documented the CPIS scale's dependability.

According to Cronbach's alpha, the overall scale has an internal consistency of 0.81 [14]. Internal consistency and Cronbach's Coefficient Alpha both came out at 0.98 when testing the CPIS's dependability in this study.

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