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# **Exploring the complexity of student nurse relationships with adolescent patients when placing nasogastric tubes**

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This article aims to explore the complexity of student nurse relationships with adolescent patients when placing nasogastric (NG) tubes. The potential interconnectedness of this relationship is debated within this article and an evaluation of current practice identifies potential implications for both patients and nursing care.

## **Background**

The practice of NG tube insertion originates from ancient Greece and Egypt, where tubing inserted rectally infused nutrient solutions for the treatment of bowel conditions (Chernoff, 2006; National Nurses Nutrition Group, 2016). Progression to enteral feeding via tube occurred between the 12th and 16th centuries (Cresci and Mellinger, 2006; Pash, 2018), with the first recorded use in 1876. The feed consisted of warm milk, eggs, beef tea and stimulants given to children who were suffering from 'mania, diphtheria and croup', and to 'fasting girls and spoilt children who, when ill, refused food' (Harkness, 2002: 400). Some 20 years later, documented treatment of childhood diphtheria included the insertion technique, in which the patient was rolled in a blanket by two assistants, then a soft, rubber catheter was lubricated and inserted via the nostril into the stomach. A funnel was attached to the end, through which bolus feeds were administered three times a day. Although best practice was that doctors would insert the tube, alternatives included either an 'intelligent nurse or a parent who could be taught to do it' (Cresci and Mellinger, 2006: 522).

With the advent of the 20th century, the focus moved to tube construction. This was chiefly led by Einhorn and Levin, who identified how the design could aid insertion. It is important to note that tubes were single use only, for one particular purpose, which would have been extremely invasive and potentially traumatic for younger patients (Harkness, 2002; Phillips, 2006; Pash, 2018). Moving to the present day, tube construction is polyurethane or silicone to give flexibility, sized according to the patient using the French (Fr) scale and inserted into the nose, via the oesophagus to the stomach (Pash, 2018). Modern NG tubes can remain in situ for around 6 weeks for the purpose of enteral feeding, administering medication or hydration and gastric aspiration and decompression (Durai et al, 2009a; Guidelines and Audit Implementation Network, 2015; National Nurses Nutrition Group, 2016).

### **Indications for use**

NG tubes can be inserted in patients of any age, although orogastric tubes inserted via the mouth can be used for babies. Guidelines from the National Nurses Nutrition Group (2016) state that the purpose of NG tube insertion, and associated risks, should be discussed with the patient and/or their family depending on age, to gain informed consent. Time should be given following consent, and prior to insertion, to allow reflection and consideration of the procedure. Prior to insertion, the nose-ear-xiphisternum measurement (NEX) should be taken, verified where necessary and recorded. Agreeing a 'stop' signal with the patient is important prior to insertion, as is providing them with a drink to actively perform a safe swallow. This is generally used with adolescent patients and aids intubation via the oesophagus with flexion of the neck forwards (National Nurses Nutrition Group, 2016; Lister et al, 2020). Although it is acknowledged that NGs are typically passed 'blind' (NHS Improvement, 2016a), the

anatomy of the patient allows the tube to pass directly into the gastrointestinal tract. Once inserted, the tube length must be documented and assessed to ensure it can move freely when swallowing to avoid pressure necrosis. Aspirate should be pH tested and the tube should be flushed with water after every use (Boyes and Kruse, 1992; Guidelines and Audit Implementation Network, 2015).

## **Discussion**

Data collected between 2011 and 2016 revealed that more than 3 million nasogastric or orogastric tubes were inserted across the NHS, the vast majority of which were passed and utilised for purpose successfully. However, issues with NG tube misplacement termed 'Never Events' have triggered several Patient Safety Alerts, evidence that the procedure is not without complications (NHS Improvement, 2016b; NHS Improvement, 2018; Healthcare Safety Investigation Branch, 2020). These arose from the NG tube being incorrectly inserted into the intrapulmonary area, pleura or respiratory tract and feed, and fluid or medication administered before correct placement was confirmed (NHS Improvement, 2021). In addition, issues of staff competency to carry out the procedure and documentation errors were raised (Durai et al, 2009b; NHS Improvement, 2016b; BAPEN Nasogastric Tube Special Interest Group, 2020). Recently, the BAPEN Nasogastric Tube Special Interest Group (2020) called for the procedure to be reclassified from a simple to a complex, dangerous procedure, limiting those who could carry it out to trained and competent health professionals, rather than student nurses. This would have future implications for the Nursing and Midwifery Council (NMC) as this procedure is contained within the standard proficiencies in *Future Nurse*—Annex B, skill 5.6 is 'insert, manage and remove oral/nasal/gastric tubes' (NMC, 2018). Longer term, to mitigate against

misplacement, Irving et al (2014) acknowledged that technology could reduce the need for a positional X-ray and errors in interpretation, although currently this is still some way off.

### **Student nurses placing NG tubes during their training**

Currently NG insertion is carried out by student nurses during their practice placements underpinned by knowledge derived from a blended learning approach (Garrison and Kanuka, 2004). Research has shown that the acquisition of knowledge for student nurses was most effective when the process was cyclical, from understanding the theoretical process, to modelling and observation, through to carrying out the procedure and then reflecting on it afterwards (Chesser-Smyth, 2005; Porteous, 2015). Student nurses are assigned a practice assessor when on placement where support from an experienced member of staff has shown to have positive effects. Students identified the importance of their assessors being friendly and supportive, which enabled them to develop self-efficacy through feedback, reflection, and positive influences (Porteous, 2015). In addition, most wards operate a coaching model, where an experienced student nurse mentors a peer with less experience, overseen by a registered nurse. This model can be beneficial for student nurses who identified more closely with their peers because they could understand what the student was going through, such as the pressures of studying, placement demands and being able to 'fit in' to the ward environment (Roberts, 2009). Conversely, there is evidence that the student nurse's experience of placement is not always positive. Issues such as inconsistency, lack of support, feeling lost, stress, and the parental scrutiny experienced when carrying out procedures with a child, were highlighted in several studies (Kevern and Webb, 2004; Roberts, 2009; Houghton et

al, 2013; Lopez et al, 2018). The COVID-19 pandemic has impacted the student experience further through ambiguity of roles, limited learning opportunities, concerns over personal safety, disrupted learning and isolation from support systems and social activities (Carolan et al, 2020; Usher et al, 2020).

Implications for student nursing practice

### **Proficiency**

Focusing specifically on student nurses as the practitioners carrying out this clinical skill, research has highlighted several areas which impact on their practice. First, the notion of proficiency, defined by Cassidy (2009) as being more than just the demonstration of a correct procedure. Instead, being able to demonstrate the application of, and relationship between, technical and psychological skills was essential when working independently, or collaboratively, in the delivery of care. Articulation of proficiency could be further demonstrated through either an expressed dialogue with a more experienced nurse, or an internal monologue as they prepared for the procedure. Defined as proleptic instruction, this allows the practitioner to use their theoretical knowledge-in-waiting to move to practical knowledge-in-use as they carry out the clinical skill (Spouse, 1998; 2001).

Research by Benner (2001) and Biggs (1987) is particularly relevant to the developing knowledge of student nurses. Through exposure and experience, they move from a surface-level reproduction of rote learning to a deeper, more intrinsic approach to theorise and achieve greater understanding. Nursing students who either lack the confidence in their knowledge or skills, or do not have access to a procedure where they can observe others, may experience self-doubt (Spouse, 2001). Here the

role of the assessor is vital in developing the student's competence through providing scaffolded opportunities to try out techniques that are at the limits of their current capacity (Cope et al, 2000).

### **Realities of being a student nurse**

Research by Hollywood (2011) characterised the emerging sense of the pressures of responsibility as a 'double-edged sword'. As students' progress to becoming registered nurses, issues such as performance anxiety, self-doubt, loss of self-confidence, and feelings of incompetence can creep into their practice (Beck, 1993; Sharif and Masoumi, 2005; Darvill et al, 2018). Fear of making mistakes and fear of failure were common emotions experienced when presented by the 'reality shock' of life on a busy ward (Sharif and Masoumi, 2005; Hollywood, 2011).

### **Supporting the needs of adolescent patients**

There is a growing body of research focusing on how practitioners can support the needs of adolescent patients. Encouraging self-regulation is important, so patients can adjust their behaviour accordingly. Evidence shows that this can be influenced by spending time sharing preparatory information. This enables the patient to make sense of and process what is about to happen (Jaaniste et al, 2007), which would lead to the development of a health-related schema. In turn, this would minimise any potential distress, improve resilience and optimise outcomes. Also acknowledged was giving the patient control over how they could self-regulate. This could involve the use of sensory distractions such as a tablet computer or music, or allowing them to have a supportive person with them, which could improve the overall experience of the procedure (Bray et al, 2019).

Information sharing with adolescent patients should consider the different media they may choose to use. Although research indicates that personal sources such as family, peers and health professionals are the preferred medium (Gray et al, 2005), some patients may prefer to do their own research using books, information leaflets or online sources. However, success in the online sphere is reliant on several factors including a person's media and information literacy—their ability to use credible sources and understand the content (Kenny, 2002; Ghaddar et al, 2012; Briones, 2015; McKinnon et al, 2020). Essentially, this would suggest that a patient-centred approach to information sharing is a crucial skill that student nurses need to possess.

### **External and internal struggles of adolescence**

The World Health Organization (2017) has defined adolescence as between the ages of 10 and 19 years. Key health policy makers have focused on the care given to adolescent patients, ensuring their active involvement, and providing guidance to practitioners (Coleman, 2011; Department of Health, 2011; UNICEF, 2011; Public Health England, 2015; NHS England/NHS Improvement, 2019; National Institute for Health and Care Excellence, 2021). This is further underpinned by the UN Convention on the Rights of the Child, which valued adolescence as a positive stage of development, the right for adolescents' views to be heard, and to express concerns (UN Committee on the Rights of the Child, 2016). Prior to this there were core principles designed to meet the holistic needs of adolescents. This made explicit the need for practitioners to understand their changing health needs and how they could play a part in promoting and strengthening resilience by accessing services designed for young people (Public Health England, 2015). However, despite national guidance, there has been an ongoing dichotomy between the delivery of care within a safe, yet



suitable, adolescent-friendly environment (Department of Health, 2011). Research revealed that their needs are being overlooked, as many health policies combine children and young people into a single group, when their needs are clearly different (Coleman, 2011). More recently, commitment has been given that future service models for adolescents will offer person-centred, age-appropriate care, more effective transition to adult services and funding for mental health (NHS England/NHS Improvement, 2019; National Institute for Health and Care Excellence, 2021). This approach acknowledges the determinants affecting adolescent health at an individual level through rapid neurocognitive change and on an interpersonal level through increasing independence and autonomous decision making (World Health Organization, 2017). Adolescence has been referred to as a period of 'storm and stress' (Dahl, 2004) as young people experience biological, psychological, behavioural, and social changes. These changes are driven by neural plasticity where areas in the brain such as the limbic and cortical regions, hippocampus, amygdala, and pre-frontal cortex are in a heightened state of development. This impacts on emotional regulation, hormonal sensitivity, vulnerability, decision making, behavioural immaturity and risk taking, while moving from dependence on their family to independence, with increasing reliance on their social networks (Dahl, 2004; Romeo and McEwen, 2006; Arain et al, 2013; Eiland and Romeo, 2013).

## **Conclusion**

In conclusion, the relationship between student nurses, adolescent patients and NG insertion warrants further research. Student nurses are under increasing pressure to demonstrate their proficiency to practise within busy, pressurised wards. Although educational pedagogy must cover clinical skills, paediatric student nurses must

consider how to successfully carry out a procedure such as NG insertion regardless of whether the patient is a baby, child or young person. As such, research with teenagers as service users could lead to an improved understanding of their needs, which would enhance their experience of healthcare provision and engagement with services in the future. NG insertion is an invasive procedure that carries risk, although future technological advancements could minimise this, either alongside, or independently of, the BAPEN Nasogastric Tube Special Interest Group's (2020) call to reclassify and specialise it. However, the relationship between student nurses and adolescent patients who require invasive procedures could be explored further to inform practice without the need for reclassification.

## **KEY POINTS**

- Nasogastric (NG) tubes enable people to receive food, fluid and medication into the stomach
- NG tube construction is polyurethane or silicone to give flexibility, sized according to the patient using the French (Fr) scale and inserted into the nose, via the oesophagus to the stomach
- Currently NG insertion is carried out by student nurses during their practice placements underpinned by knowledge derived from a blended learning approach
- Student nurses are in development and are completing a set of proficiencies within their nurse education and training. They must be invested in and developed by competent staff members so that they have the proficiencies to undertake safe and effective nursing care

- A patient-centred approach to information sharing is a crucial skill that student nurses need to possess when supporting adolescents receiving an NG tube insertion

### **CPD reflective questions**

- Consider the evidence base you use in your clinical area. Do you have a protocol or policy for nasogastric (NG) tube insertion, and is this reflective of the latest evidence base?
- Initiate a reflective conversation about your NG tube insertion practice and use a reflective model to support the structure of your conversation
- Highlight the specific needs of adolescent patients in the process of NG tube insertion

**Declaration of interest:** none