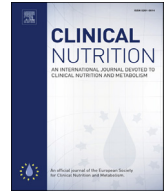




Contents lists available at ScienceDirect

## Clinical Nutrition

journal homepage: <http://www.elsevier.com/locate/clnu>

## Review

# Systematic review of qualitative and quantitative studies on the attitudes and barriers to percutaneous endoscopic gastrostomy feeding

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## ARTICLE INFO

## Article history:

Received 21 August 2015

Accepted 19 April 2016

## Keywords:

Gastrostomy  
 Enteral feeding  
 Attitude  
 Barrier

## SUMMARY

**Background:** Percutaneous endoscopic gastrostomy (PEG) is now commonly used in long-term care and community settings. However, regional variations exist in the acceptability of PEG tube feeding with long-term nasogastric feeding still commonplace in many Asian nations.

**Aims:** To evaluate the evidence relating to attitudes towards PEG feeding and to determine potential barriers to the acceptance of PEG tube feeding.

**Methods:** We searched Ovid MEDLINE, EMBASE, the Cochrane Library, Web of Science and CINAHL databases. The search for the studies was performed without restrictions by using the terms “PEG”, “percutaneous endoscopic gastrostomy”, “enteral feeding”, “attitude”, “perception” and “opinion”. Qualitative and quantitative studies were included. Quality of studies was assessed with the Alberta checklists. **Results:** From 981 articles, 17 articles were included in the final analysis. Twelve qualitative and four quantitative studies were considered of good quality. Seven of the 14 studies reported positive attitudes towards PEG. Three major themes were identified in terms of barriers to PEG feeding: lack of choice (poor knowledge, inadequate competency and skills, insufficient time given, not enough information given, lack of guidelines or protocol, resource constraints), confronting mortality (choosing life or death, risk of procedure) and weighing alternatives (adapting lifestyle, family influences, attitudes of healthcare professionals (HCPs), fear and anxiety).

**Conclusions:** Only half of the reviewed studies reported positive perceptions towards PEG feeding. The themes identified in our systematic review will guide the development of interventions to alter the current attitudes and barriers towards PEG tube feeding.

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## 1. Introduction

Percutaneous endoscopic gastrostomy (PEG) feeding is recognised to be beneficial in patients with various conditions including traumatic brain injuries, dementia, stroke, malignancy and those nursed in continuing care settings. In the United States, it has been reported that PEG tube placement is increasing among elderly patients [1]. PEG feeding is preferred to nasogastric (NG) tube feeding in patients requiring long-term nutritional support mainly due to complications associated with NG tube placement such as

dislodgement [2], discomfort in the naso-pharyngeal area [3], aspiration, nasal trauma, vomiting, diarrhoea and tube clogging [4]. Furthermore, PEG tube feeding is associated with better outcomes in terms of mortality [5], complication rates [6] and nutritional status [7].

However, the acceptability of PEG tube feeding appears to vary in different settings. In Western Europe and the United States of America, the use of PEG in long-term care and community settings is now common place [8,9]. In a survey conducted amongst residential elderly care institutions in Taiwan, 80% of patients with dysphagia were found to be on long-term NG feeding [10]. In a recent publication from Malaysia, the majority of elderly patients with dysphagia in residential care in an urban setting were found to be on long-term NG feeding, despite having inadequate calorie intake and significant malnutrition [11].

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The process of initiating PEG feeding usually involves a combination of decision-making by healthcare professionals (HCPs), followed by agreement and acceptance by both patients and their carers. Several studies have shown that the attitudes and perceptions of HCPs can influence decision-making on PEG tube insertion [8,12–14]. Other studies have suggested that scarce information about PEG feeding among patients or their carers is an additional barrier to PEG feeding. Poor communication between HCPs and patients has further been seen as an obstacle to appropriate clinical decision-making [12].

Numerous studies have evaluated potential difficulties in the practice of long-term enteral feeding. In order to gain a better understanding of the observed variations in practice and acceptability of PEG tube feeding, we conducted a systematic review using a content analysis approach to synthesize the available evidence on the attitudes towards PEG feeding and to identify potential barriers to the acceptance and delivery of PEG tube feeding among HCPs, patients and carers.

## 2. Materials and methods

### 2.1. Selection criteria and literature search

We included qualitative and quantitative studies classified according to the authors' description. If the authors did not provide any kind of description, we classified the study by the type of questions that were asked. For example, if they used the same closed questions among all the participants and included some figures mentioning the percentage of participants that were satisfied or that had specific expectations, the study was categorized as quantitative. A study was determined to be qualitative if satisfaction or expectations were explored using open-ended questions in individual interviews or focus groups. We excluded studies that focused solely on children. We did not include non-English articles to prevent cultural and linguistic bias in translations.

We systematically searched for all English language articles using the Ovid MEDLINE (1946–2015), EMBASE (up to 7 January 2015), the Cochrane Library (up to 7 January 2015), Web of Science (up to 7 January 2015) and CINAHL (up to 7 January 2015) databases. We also hand searched reference lists of relevant studies, electronic theses and review articles. The search terms used were combined with Medical Subject Heading (MeSH) terms and text words such as “PEG” OR “percutaneous endoscopic gastrostomy” OR “gastrostomy” OR “enteral feeding” AND “perception” OR “opinion” OR “attitude”. The titles of all the articles were screened and abstracts of articles which were potentially relevant were retrieved. Articles were discarded at this stage if they did not fit the inclusion criteria. The full-text articles that contained potentially relevant data or information were then retrieved to be analysed and examined for eligibility.

### 2.2. Data extraction

Two of us (MHJ and MPT) independently extracted qualitative and quantitative data from the studies including methods, participants, data analysis and outcomes using a standardized data extraction table. We used the PRISMA statement for the reporting of systematic reviews [15].

### 2.3. Comprehensiveness of reporting

The quality of the studies was appraised using the standard quality assessment criteria for evaluating primary research papers from a variety of fields by Alberta Heritage Foundation for Medical Research [16]. If a study scored more than 55 percent, it was

considered to be of high quality. Disagreements were resolved by discussion. Decisions to exclude studies were not based on the assessment of quality of reporting.

### 2.4. Synthesis of finding

In qualitative studies, quotations from participants and text in terms of “findings” from each study were entered verbatim. The findings of the studies were categorized according to similarities and differences in relation to participant perspectives. The same applied to the quantitative studies where the frequency of answers to questions was used to discover relevant aspects. Studies were then grouped into a structured model of themes [17].

## 3. Results

Our database search yielded 981 articles. After removing duplicates, we screened the titles of 871 articles and excluded 636 articles which were not considered relevant. The abstracts of 236 articles were evaluated. At this stage, 204 articles were excluded as they were intervention studies which did not assess attitudes or barriers or were prognostic studies. We also excluded conference proceedings and non-primary research such as review and editorial articles. From the 32 full-text articles, nine articles were excluded as they involved only minors. Six other articles were excluded for the following reasons: one study focused on decision aids [18], two studies evaluated medical technology [19,20], one study evaluated ethical principles [21], one study explored PEG withdrawal [22], and the remaining study discussed artificial nutrition and hydration [23]. As a result, 17 articles met the inclusion criteria and were included in our qualitative and quantitative analyses (Fig. 1). The studies were carried out in England [12,13,24–27], Sweden [28], Turkey [29], Ireland [30,31], Wales [32], Taiwan [10,14], United States [8], Canada [33,34] and Malaysia [11]. We have reported the characteristics of the included studies in Table 1.

### 3.1. Comprehensiveness of reporting of included studies

The quality assessment of the included qualitative studies is shown in Table 2. The completeness of reporting varied across the studies, with three studies [25,28,33] completing the 10-item reporting criteria. All 12 studies specified a connection to a theoretical framework, clearly described the data collection methods and data analysis, supported the conclusions by the results and had reflexivity of the account. Only five studies [13,25,27,28,33] adequately described the context of the study. However, all of the studies scored 70 percent and above and were hence considered to be of high quality.

A summary of the quality assessment for five quantitative studies is shown in Table 3. Of the 14 items within the quality assessment checklist, only 10 items were relevant to our studies. We therefore calculated the total score using the denominator derived from the 10 items rather than the 14 original items. The number of studies fulfilling individual criteria among the 10 relevant items specified by the reporting criteria ranged from none to five studies. All five studies sufficiently described their objectives, defined the outcomes, reported results and had conclusions which supported their results. No studies justified their sample size or estimated variance of their results. Total scores ranged between 45 percent and 80 percent. Only one study scored less than 55 percent [30]. The remaining studies [8,10,11,29] were considered high quality of studies.

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