

# Perceived Potential Barriers to Implementation of Nutritional Therapy Practice Guidelines in Critically Ill Adults in a District of KwaZulu-Natal, South Africa

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## Abstract

**Background:** Transitional challenges in the disease profile and healthcare systems have revealed the need for the development of guidelines to assist healthcare practitioners in decision making regarding patient care. Implementing strong evidence-based guideline recommendations into clinical practice is associated with improved clinical outcomes for patients, and integrated and collaborative nutritional services.

**Purpose:** The purpose of this study was to identify perceived barriers to implementing national enteral nutritional therapy practice guidelines in critically ill adults in a district hospital and primary healthcare institutions in South Africa.

**Methods:** A quantitative descriptive research design was followed in this study. The district and institutions were selected using non-probability deliberate purposive and convenience sampling methods to select healthcare professionals (HCPs) for the study. Data were collected through a self-administered questionnaire and analysed with the IBM Statistical Package for the Social Sciences (SPSS) version 25.

**Results:** Ninety-six HCPs participated in the study which included nurses (76.0%, n = 73), doctors (10.4%, n = 10), pharmacists (7.3%, n = 7), nutrition specialists (5.2%, n = 5), and a speech-language therapist (1.0%, n = 1). Lack of awareness among HCPs and unavailability of enteral nutritional therapy practice guidelines ENTPGs in the institutions were identified as potential high priority barriers to implementation.

**Conclusion:** The results of this study indicate the need for introducing guidelines to HCPs and institutions to create awareness of such guidelines and thus encourage adherence to recommendations. There is a strong need for further research on strategies to manage the identified barriers to facilitate adoption and implementation of the national enteral nutritional therapy practice guidelines for adults in a South African context.

**Keywords:** enteral nutritional therapy practice guidelines, implementation, critically ill adults, barriers

## 1. Introduction

Transitional challenges in the disease profile and healthcare systems have resulted in efforts to provide guidance to healthcare practitioners through nutritional clinical practice guidelines and recommendations (Magni et al., 2017). Clinical practice guidelines are systematically developed statements intended to assist practitioners in decision making with regard to appropriate interventions under specific circumstances, yet are often not applied (Fischer, Lange, Klose, Greiner, & Kraemer, 2016). Despite the above truths concerning guidelines and enteral nutritional therapy (EN) having positive effects on the clinical outcomes of critically ill patients, numerous barriers that contribute to incomplete delivery of EN, including underutilization of the practice guidelines, have been identified. According to Boullata et al. (2017) EN is now widely used in subacute, rehabilitation, long-term care, and home settings, therefore guidelines can be helpful in standardizing EN practices across care levels. Moreover nutritional depletion during hospitalization related to poor appetite during acute illness, fasting for investigations and surgery, are emerging as important determinants of disease course and mortality and post hospital nutritional care has the potential to reduce related hospital readmissions and mortality (Holst & Rasmussen, 2013).

Clinical practice guidelines assist clinicians through summarizing current evidence and recommending best practices. However, they are not always effective in changing the behavior of healthcare professionals (Fischer et al., 2016; Mesejo, Vaquerizo Alonso, Acosta Escribano, Ortiz Leiba, & Montejo Gonzalez, 2011). Guideline implementation is the responsibility of regions and national or subnational groups. This should be taken into account from the beginning of development to mitigate barriers against implementation (WHO, 2015; World Health Organization, 2012). Additionally, strategies to operationalize guidelines have shown that the published guidelines must be supplemented with additional information (Musen, Middleton, & Greenes, 2014). For example, a study on heart failure guidelines found that the guidelines lacked explicit definitions for symptoms and adverse events; did not account sufficiently for comorbid conditions; and supplemented them with rules and some translations to operationalize them. Based on their experience, they recommended translation of guidelines as necessary for implementation regarding the implementation of nutrition guidelines (Mok, Smith, Reid, & Santamaria, 2015).

According to Baradaran-Seyed, Nedjat, Yazdizadeh, Nedjat, and Majdzadeh (2013), barriers to the implementation of guidelines should be conceived in two divisions, namely internal and external barriers. Internal barriers are related to the guideline's characteristics and external barriers include structural factors (e.g., financial barriers), organizational (e.g., lack of equipment and facilities), peer group individual barriers (knowledge, attitude, skills, etc.) and the interaction of patient and physician (e.g., the problems related to processing information).

South Africa is known for poor implementation of policy guidelines, which cannot be acceptable for effective and high quality service delivery if we are to achieve the national goal of long and healthy life for all South African citizens (Gumede, 2010). McKee et al. (2017) agree that lack of implementation of guidelines is a serious problem requiring urgent improvement to ensure that patients receive optimal evidence-based care. Further mention was made of issues related to leadership, workload, time and resources as significant barriers to guideline implementation.

A nation-wide pilot study that surveyed nutritional support practices in private South African (SA) adult intensive care units (ICUs) revealed disparities in reported nutrition practices, suggesting among other things, that implementation of published nutrition guidelines was not well established (Hill, 2015). That was before the establishment of the SA national enteral nutrition practice guidelines for adults, which make provision for adult patients in need of EN at all levels of public healthcare and in their households (home-based enteral nutritional therapy). Previous national nutritional practice guidelines were diagnosis-specific and did not include recommendations for enteral nutrition in a district hospital or in primary health care (PHC) institutions. As perceived by potential adopters, a study of factors that may hinder implementation of these guidelines in such settings was seen as worthwhile, especially because this is a new concept for the setting. The purpose of the study was to examine perceived potential barriers to the implementation of nutritional therapy practice guidelines for adults recovering from critical illness in a district hospital and in PHC facilities in South Africa.

## **2 Method**

### *2.1 Study Design*

A descriptive cross-sectional study was conducted in a district hospital and in PHC facilities in KwaZulu-Natal, South Africa.

### *2.2 Study Setting*

The study was conducted in the rural Harry Gwala district situated on the southern border of the KwaZulu-Natal (KZN) province. According to the Census 2011, the total population of the district was 478 537, which is increased by cross-boundary flows from the neighboring country and province. The unemployment rate is at 33% for the district, with an adult literacy rate of 28%. The high rate of adult illiteracy results from the high levels of people (62.9 %) earning below R283 per month (20 USD = 283/14). The low socio-economic status of communities renders them vulnerable to diseases (DoH KZN, 2019; KZN DOH, 2015). This, too, could contribute to the treatment defaulter rate with regard to chronic diseases as patients who do not have enough money will opt to buy food rather than to go to collect medication. The district does not have a critical care facility; critically ill patients are referred to uMgungundlovu tertiary hospitals in Pietermaritzburg or eThekweni. There is poor access to healthcare facilities due to the geographic situation (hilly, mountainous, with poor road infrastructure). The consequence is an increased complication rate and need for critical care. The result of this situation is that the demand for critical care beds always exceeds the number of available beds in low- and middle-income countries, these patients are discharged to go home or back to district hospitals while still in need of nutritional therapy. This background constituted the motive behind the choice of setting.

### 2.3 Population and Sampling

The study population included dietitians, doctors, nurses and pharmacists constituting the nutritional team or multidisciplinary team working in a selected district hospital (DH) and PHC facilities. Non-probability deliberate purposive sampling was used to select the district and healthcare facilities while convenience sampling was used for selecting HCPs. A healthcare professional had to be working in the selected health facilities and be available during data collection to be included in the study sample and HCPs not available during data collection and working in tertiary institutions were excluded. Parameters used to determine sample size included the effect size of 0.37 (at medium effect size), Type I error ( $\alpha$ ) (the probability of falsely rejecting the null hypothesis) = 0.05 (5%) and Type II error ( $\beta$ ) (the probability of falsely accepting the null hypothesis) = 0.2 (20%). A sample size of 75 was found to be sufficient to provide 80% statistical power.

### 2.4 Data Collection Instrument

A previously used pretested and self-administered questionnaire was used to collect data for this study. The questionnaire presented in this paper consists of two sections; Part A included five questions about the personal demographics of the respondents. Part B listed 22 questions on perceived barriers regarding the implementation of ENTPGs on a 7-point Likert scale. Face and content validity of the questionnaire were assessed and, in order to test reliability, the Cronbach's alpha tests were used for internal consistency of the entire questionnaire and variables reported in this paper (perceived barriers). The result of  $> 0.763$  was found for all the above-mentioned reliability tests, which indicated a reliable score.

### 2.5 Data Collection

Before data collection commenced, ethical clearance, permission from relevant authorities and informed consent from participants were obtained. Data were collected by the researcher from June to August 2018. To show respect of the institution, the researcher would report to the nursing service manager or operational manager of the institution before proceeding to distribute questionnaires to available HCPs. On average, it took 20 minutes to complete a questionnaire. If questionnaires were incomplete, the researcher would leave them behind for collection at a later stage. Such questionnaires would be put in a sealed envelope and kept at the managers' offices.

### 2.6 Data Analysis

Data were analysed using the IBM-SPSS version 25. We first ran descriptive statistics, determined frequencies, and then data were summarized using proportion and percentage. The Pearson's chi-square ( $\chi^2$ ) test was conducted for association between socio-demographic variables and perceived barriers to the implementation of nutritional therapy practice guidelines. The level of significance (p-value) was set to be 0.05.

### 2.7 Ethical Considerations

The protocol of the study was approved by the Humanities and Social Sciences Research Ethics Committee (HSS/1495/017D) of the University of KwaZulu-Natal and the KZN Department of Health (HRKM413/17). Permission was obtained from district office and health facilities; and HCPs signed informed consent before data collection. Respondents were not required to include their names in the consent form to maintain anonymity. During recruitment, respondents were given full information about the study, including the purpose and objectives, as well as the right to withdraw from participation without incurring any penalty.

## 3. Results

Out of 130 questionnaires that were distributed, 96 were returned, giving a response rate of 74%.

### 3.1 Socio-Demographic Characteristics of the Study Sample

Table 1 shows that the majority of respondents were nurses, 76.0% ( $n = 73$ ) and there were more females (79%,  $n = 76$ ) than males and only one speech and language therapist. Forty-one (42,7%) of the respondents had 0–5 years work experience.

Table 1. Characteristics of the study participants

Characteristics	Frequency	Percentage (%)
<b>Gender</b>		
Male	20	20.8
Female	76	79.2
<b>Age</b>		
34 years or less	37	38.5
35–49	44	45.8
50–64	14	14.6
65 years or older	1	1.0
<b>Clinical specialty</b>		
Dietitian	5	5.2
Nurse	73	76.0
Doctor	10	10.4
Pharmacist	7	7.3
Speech language therapist	1	1.0
<b>Years of experience</b>		
0–5 years	41	42.7
6–10 years	28	29.2
11–15 years	18	18.8
More than 15 years	9	9.4
<b>Health facilities</b>		
District Hospital	57	59.4
Community Health Centre	17	17.7
Primary Health Care	22	22.9

### 3.2 Perceived Barriers to the Implementation of ENTPGs in the District and PHC Facilities

In this study, respondents were presented with questions derived from literature regarding common barriers to guideline implementation and were asked to state what they perceived as potential barriers to the national ENTPGs in their specific institutions. Barriers to implementation of the guidelines were assessed with twenty-two questions with seven options (0–6). The twenty-two questions were divided into four sections: five questions assessed **characteristics/self-efficacy of implementers**. An aggregate score of '0–11' (below 40%) in this section was categorized as less important; '12–20' (40%–69%) as moderately important and '21–30' (70% and above) as very important. Also, two questions assessed **guideline characteristics** and **patients' characteristics** and an aggregate score of '0–4' (below 40%) in these sections was categorized as less important; '5–8' (40%–69%) as moderately important and '9–12' (70% and above) as very important. The last thirteen questions assessed **institutional issues** with an aggregate score of '0–31' (below 40%) in this section being categorized as less important; '32–54' (40%–69%) as moderately important and '55–78' (70% and above) as very important barriers to implementation of nutritional therapy guidelines.

#### 3.2.1 Characteristics/Self-Efficacy of Adopters

Results showed that HCPs perceived their lack of awareness and the unavailability of national ENTPGs as very important potential barriers to their implementation, at scores of 57.3% and 60.4% respectively. Again, lack of knowledge of outcome expectancy of nutritional therapy was seen as a less important barrier by HCPs in the institutions, as shown by a score of 49%, while lack of confidence in performing guideline recommendations was perceived as moderately important with a score of 36.5%.

#### 3.2.2 Guideline Characteristics and Patients' Characteristics

EN guidelines not being available in the institutions was perceived a very important barrier with a score of 55.2%, while guidelines being unclear and confusing was regarded as less important by the HCPs in these institutions. The

type of patients not matching the national EN guideline recommendations was seen as less important by 54.2% of HCPs.

### 3.2.3 Institutional Issues as Perceived Potential Barriers

Having no proper nutritional therapy team (NTT) to provide nutritional therapy to critically ill patients in the institution, having no dietitian coverage at all and ENTPGs not being included in the institution's nutritional policy were perceived as less important barriers in this study, with scores of 84.4%, 82.3% and 68.8%, respectively. Other factors that were perceived as less important barriers among the HCPs in the institutions included general disagreement about ENTPGs recommendations among health care teams and institutional culture/inertia with scores of 66.7% and 60.4%. Table 2 presents details of factors that were perceived as barriers in this study.

Table 2. Summary of barriers to guideline implementation perceived by health care professionals

Items	Less important (%)	Moderately important (%)	Very important (%)
<b>Characteristics/self-efficacy of implementers</b>			
Lack of awareness of the available ENTGPGs	13.5	29.2	57.3
Unavailability of ENTPGs in the facilities	13.5	26.0	60.4
Lack of knowledge regarding nutritional therapy guidelines	24.0	31.3	44.8
Lack of outcome expectancy on NT	47.9	30.2	21.9
Lack of confidence in performing guideline recommendations	34.4	36.5	29.2
<b>Guidelines characteristics</b>			
EN guidelines not available in my institution		20.8	24.0 55.2
Guidelines unclear and confusing		58.3	21.9 19.8
<b>Patient characteristics</b>			
Type of patients do not match the recommendations of national ENTPGs		54.2	34.4 11.5
Very few or no patients discharged from tertiary hospitals on percutaneous enteral-gastrostomy feeding presenting themselves in my facility		24.0	42.7 33.3
<b>Institutional issues</b>			
ENTPGs not included in the institution's nutritional policy		40.6	31.3 28.1
No proper NTT in institution to provide nutritional therapy to critically ill patients		68.8	19.8 11.5
General disagreement about ENTPGs recommendations among health care team		84.4	9.4 6.3
No support from management regarding NT provision in terms of nutrition education/in-service training on current ENTPGs		66.7	19.8 13.5
Limited or no resources (equipment and stock) in the institution to provide NT to critically ill patients		34.4	34.4 31.3
No proper discharge summary/referral system for patients discharged from higher level of care on EN in the guidelines		24.0	45.8 30.2
Uncertainty or role conflicts in decision making on provision of NT		45.8	39.6 14.6
Dietician coverage: Not enough		45.8	39.6 14.6
No dietitian coverage at all		37.5	40.6 21.9
Staffing issues		82.3	8.3 9.4
NT not treated as equally important to other medical/surgical therapies by healthcare workers		29.2	35.4 35.4
Institutional culture/inertia a barrier to implementation		53.1	24.0 22.9
Workload does not allow carrying out monitoring of HEN as recommended		60.4	22.9 16.7
		25.0	38.5 36.5

### 3.3 Characteristics of Respondents in Association With Perceived Potential Barriers to Guideline Implementation

With a significance level (p-value) set to be 0.05, results of the Pearson's chi-square test for association between socio-demographic variables and perceived potential barriers to the implementation of guidelines showed no significance with regard to gender, leadership role and years of experience of HCPs. Only the association between health institutions and specialties of HCPs were found to be significant, with p-values less than 0.05;  $p = 0.025$  and  $p = 0.012$  (Table 3).

Table 3. Socio-demographic variables of HCPs to perceived potential barriers

Socio-demographic variable	Less important (%)	Moderately important (%)	Very important (%)	p-value
Gender				
Male	2.1	11.5	7.3	p>0.05
Female	15.6	30.2	33.3	
Age				
<34 years	7.3	13.5	17.7	p>0.05
35-49 years	9.4	21.9	14.6	
50-64 years	1.0	6.3	7.3	
65 years and above	0.0	0.0	1.0	
Leadership role				
Senior doctor	1.0	3.1	2.1	p>0.05
Nurse manager	1.0	5.2	5.2	
Senior pharmacist	0.0	2.1	0.0	
No leadership role	15.6	31.3	33.3	
Health facility				
District hospital	6.3	26.0	27.1	P<0.05
CHC	2.1	7.3	8.3	
PHC clinic	9.4	8.3	5.2	
Years of experience				
0-5 years	11.5	17.7	13.3	p>0.05
6-10 years	3.1	12.5	13.5	
11-15 years	3.1	9.4	6.3	
More than 15 years	0.0	2.1	7.3	
Clinical specialty				
Dietician	4.2	1.0	0.0	P<0.05
Nurse	12.5	32.3	31.3	
Doctor	1.0	3.1	6.3	
Pharmacist	0.0	5.2	2.1	
SLT	0.0	0.0	1.0	

Note. CHC - Community Health Center; PHC clinic - Primary Health Care Clinic, SLT - Speech and Language Therapist.

## 4. Discussion

That the majority of the respondents were nurses in all healthcare institutions confirms that nurses are the heartbeat of any health system and that the first-contact primary care is mainly offered by nurses in 80% of all consultations in the public sector (Mash, Malan, Von Pressentin, & Blitz, 2015). Adib-Hajbaghery (2013) emphasizes that all health-care systems need competent nurses as front-line staff in community health. Nurses can potentially be a

cost-efficient resource that plays an important role in the implementation of guidelines and programmes, but their role needs to be defined (McKee et al., 2017). They are the ones responsible for administration of enteral formulas recommended by dietitians and prescribed by doctors to patients (Al Kalalkeh & Shahin, 2015; Bourgault et al., 2014). Another finding about socio-demographic characteristics of respondents in this study was that there were more females than males (79%, n = 76) as opposed to findings by Salim Al Shamsi, Salim Al Kalbani, Ghthaith Almutairi, and Salim Al Mashrafi (2019) where males were overrepresented at 73.2%.

Lack of awareness of the available ENTGPGs and their unavailability were perceived as very important potential barriers in this study, at scores of 57.3% and 60.4% respectively. Regarding these results, Patel et al. (2016) state that lack of awareness of practice guidelines and lack of confidence in implementing guidelines are common among care providers, which may influence delivery of nutritional therapy. The findings of the current study seem consistent with results of a study by (Lee et al., 2015) which revealed that barriers to guideline adherence include adopter factors such as lack of awareness, non-familiarity, disagreement, lack of self-efficacy and low outcome expectancy as well as the inertia of previous practice and external barriers.

Lack of knowledge of outcome expectancy on nutritional therapy and lack of confidence in performing guideline recommendations were also perceived as less important potential barriers at scores of 49% and 36.5% respectively. In a study by Patel et al. (2016), these were highlighted as common barriers that might affect EN therapy delivery to critically adults. ,

In this study, EN guidelines not being available in the institutions was perceived to be a very important potential barrier with a score of 55.2%, while guidelines being unclear and confusing was less important for the HCPs in these institutions. According to Birrenbach, Kraehenmann, Perrig, Berendonk, and Huwendiek (2016), clinical practice guidelines are statements with recommendations intended to optimize patient care that are informed by a systematic review of evidence. By including an assessment of the benefits and harm of alternative care options, properly developed guidelines can change clinical practice and may lead to positive changes in patient outcomes while decreasing health care costs., Unavailability of guidelines in settings, time consuming procedures, lack of disclosure regarding economy and workflows, and poor referral to experts moreover were identified (Holst & Rasmussen, 2013).

Furthermore, that the type of patient did not match the national EN guidelines recommendations was seen as less important by 54.2% of HCPs can be seen as contradictory to what Roller, Morgner, Egelseer, and Wirsberger (2016) highlighted when they reported that the characteristics of the patient population can be used to determine the prevalence of malnutrition to optimize individual nutritional needs and positively impact on health outcomes. Patel et al. (2016), on the other hand, raised another point, stating that it can be challenging to identify critically ill patients who will benefit from nutritional therapy. A different point by Holst and Rasmussen (2013) is that professionals in their study debated that, compared to patients who could benefit from nutrition therapy after discharge few were discharged on home-based enteral nutrition (HEN) for reasons of a short hospital stay and lack of knowledge and interest.

Institutional issues including not having a proper NTT in the institution to provide nutritional therapy to critically ill patients, not having dietitian coverage at all and ENTPGs not being included in the institution's nutritional policy were perceived as less important potential barriers in this study, with scores of 84.4%, 82.3% and 68.8%, respectively. The latter finding may indicate non-compliance with the 10 commitments of the Rome Declaration on Nutrition. The Second International Conference on Nutrition (ICN2) held in 2014 provided a framework for countries to incorporate nutrition actions into existing policies, strategies, programmes, plans and investments in order to achieve these commitments on nutrition (Second International Conference on Nutrition, 2014).

Other factors that were perceived as less important barriers among HCPs included general disagreement about ENTPG recommendations in the health care team and institutional culture/inertia, with scores of 66.7% and 60.4%. Referring to public-private partnership to address challenges of the global double burden of malnutrition, Kraak, Swinburn, Lawrence, and Harrison (2011) pointed out that sharing different goals, values and understanding may lead to disagreement and devaluing of others' preferred strategies to address nutrition challenges. However, despite these challenges, diverse groups collaborate to improve nutritional therapy quality, nutritional practices and health clinical outcomes in countries worldwide (Kraak et al., 2012). Patel et al. (2016) mentioned the inertia of previous practice among care providers, arguing that it had a potential to prevent adequate provision of nutritional therapy. Fischer et al. (2016) recommended involvement of local opinion leaders and professional practices with a continuing education intervention.

Significant associations between socio-demographic variables and clinical specialties, as well as health care facilities, were presumed to be promising in improving implementation of enteral nutritional therapy practice

guidelines. It was noteworthy to find dietitians recording a high score on less important barriers. The results seem to support the reported efficacy of registered dietitian nutritionists for improving outcomes of patients with different medical conditions and the need for them to be prepared and empowered to lead the necessary changes towards improving patient health, experience and reducing costs (Jortberg & Fleming, 2014). Again, similar results about PHC clinics scoring high on less important potential barriers supports previous research which shows that PHC clinics are mainly staffed by nurses who have the expertise and responsibility to ensure that the nutritional needs of patients are met, viewing them as playing equally important roles that complement the role of the dietitian to ensure adequate nutrition for patients (Xu, Parker, Ferguson, & Hickman, 2017).

This study was conducted in one district of the eleven districts in the province, which limits the chances of generalizing the findings to the entire KwaZulu-Natal, as barriers and facilitators in each district may be unique. Despite that, we employed commonly used questions from reviewed literature to describe perceived barriers to guideline implementation, while questions specific to the setting may have led to the identification of potential barriers specific to the selected setting and thus better implementation strategies. HCPs and guidelines focusing on critically ill adults in tertiary and private institutions and disease-specific factors were excluded due to the notion that guidelines should be adapted to specific individuals and contexts with consideration of specific circumstances for easy and effective adoption. Methodological limitations may include misclassification bias which may have been introduced when collapsing attitude items from a 7-point Likert scale to 3. The new categorization could have assumed that those reporting “moderate” were unsure.

## 5. Conclusion

Guidelines are designed to improve the quality of the practice and clinical outcomes of patients using current evidence as the basis of their recommendations. However, their adoption and implementation is dependent on their characteristics and those of adopters, as well as institutional issues. This study suggests the need to assess characteristics of guidelines and institutional context to identify specific strategies to enhance effective implementation of guidelines for nutritional therapy practice.

Provision should be made for the introduction of the national enteral nutritional therapy practice guidelines for adults in the district hospital and PHC facilities as professionals indicated that they were not available. Outreach initiatives and continued professional development may play a critical role in familiarizing HCPs and the integration of care from the community to ICU. Guidelines for practice may influence HCP behavior, but specific strategies such as reminders and support of clinical opinion leaders are necessary to effect change in practice (Fischer et al., 2016). Guideline implementation is an integral part of care and should not be seen as an optional extra to care duties.

There is a need for platforms that support the implementation of clinical practice guidelines that aim to structure a complete knowledge translation (KT) process addressing each step at organizational, political, and even social levels (Barreto, 2018). The World Health Organization (WHO) recommends that implementation strategies should be considered right from the beginning of the development of guidelines.

Further research to assess capacity and readiness for implementation of ENTPGs in critically ill adults in the district hospital and PHC facilities is needed. There is a need to explore and adapt guidelines to specific contexts and target groups, for instance; in South Africa, there are no published studies on home enteral nutrition, its contextual barriers and facilitators in district hospitals and PHC settings. Perceptions of adopters and users need to be explored to identify both internal and external barriers and facilitators to guideline implementation. Active dissemination of the guidelines in the form of workshops and in-service training is crucial. Effective implementation strategies guided by local contextual factors including barriers and facilitators for best practice recommendations are essential (Dhaliwal, Cahill, Lemieux, & Heyland, 2014). We further suggest conducting qualitative research to adequately assess barriers to ENTPG implementation among HCPs, as a quantitative study may have been superficial.

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## Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.



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