An Exploratory Study of The Efficiency of Swallowing & Communication Management in Tracheostomized Populations in Sri Lanka

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List of Abbreviations

AAC	Alternative augmentative communication
ASHA	American Speech and Hearing Association
BHT	Bedside head ticket
BREC	Biomedical Ethics Research Committee
EBDT	Evan's Blue Dye Test
CA	Cervical auscultation
COPD	Chronic obstructive pulmonary disease
ENT	Ear, nose and throat
FEES	Fiberoptic endoscopic evaluation of swallow
FERCS	Forum of Ethics Review Committee in Sri Lanka
FOL	Fiberoptic laryngoscopy
GTC	Global Tracheostomy Collaborative
HDI	Human development index
ICU	Intensive care unit
IDT	Interdisciplinary team
LDCs	Less developed countries
MDTs	Multidisciplinary teams
MEDBT	Modified Evan's Blue Dye Test
MEP	Multiperspective efficiency of practice
MICU	Medical intensive care unit
MOH	Ministry of Health
NGT	Nasogastric tube
NHS	National Health Services
NZSTA	New Zealand Speech and Language Therapists' Association
OR	Operating room
PEG	Percutaneous endoscopic gastrostomy
PGIM	Post-graduate Institute of medicine
PWT	People with tracheostomies
RCSLT	Royal College of Speech Language Therapy
RT	Respiratory therapist
SLP	Speech language pathologist
TRAMS	Tracheostomy Review and Management Services
UAE	United Arab Emirates
UNCG	Unpaid caregiver
VFSS	Videoflouroscopy swallow studies

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"If you would count the blessings of Allah, never would you be able to number them…."

(Quran16:18)

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DECLARATION BY THE RESEARCHER

I, Fathima Nuzha Ishak, declare that the work that is presented in this thesis is original. I was responsible for the conceptual development, data collection, analysis and write-up of the thesis and the journal articles. My supervisors, Mershen Pillay and Shyamani Hettiarachchi, assisted with guidance and input during the process as necessary.

F. N. Ishak

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Chapter 1

Introduction

1.1 The Beginnings

To begin, I briefly describe the basis from which this researched emerged. I am a Sri Lankan, a student of speech therapy in India and an aspiring clinician in an economically progressive, rapidly advancing healthcare region – the United Arab Emirates (UAE). These experiences have shaped me professionally and influenced my thoughts, ideas and concern for the patients back home. In the UAE, I witnessed those with complex rehabilitation and medical needs being managed by a well-equipped team of experts from various fields, with interrelated goals and using state-of-the-art resources.

A question that has often confounded me is this: How does the healthcare sector in a developing country such as mine, with a low-middle socioeconomic status, manage patients with complex rehabilitation and medical needs? Do we have the infrastructure, knowledge and personnel who can provide the services required to ensure patients' safety and quality of life?

Stepping into academia, I realised I could turn these musings into potential research questions. The best way to answer them was to explore the health sector in Sri Lanka. As a speech therapist who has worked with a range of language, feeding and swallowing disorders, I wanted to understand how these aspects were managed in my home country. Are the outcomes of the services provided the same, better or worse than those in higher-income nations? How efficient are the management practices for these problems in Sri Lanka?

The next step was to find a clinical population that presented with both swallowing and communication difficulties and study the services provided to them, thereby understanding the

management process for these symptoms in patients within the Sri Lankan health sector. I thought of patients whom I worked with in my daily practice: people with tracheostomies (PWTs). They have significant swallowing and communication problems,and studying them would provide excellent insight into my chosen area of focus.

However, I was sceptical about being accepted into the healthcare system in my 'own' country, which I left at the age of 17 and practiced speech therapy in for just two years. Will I belong, or will I be considered an 'outsider'? The essence of my thesis is thus a study of the practices pertaining to swallowing and communication management in PWTs in Sri Lanka (in a low-middle socio-economic context). It discusses the efficiency of these procedures from the perspectives of those involved: the professionals delivering the services, the patients themselves and their unpaid caregivers.

1.2 Key Concepts and Background to the Study

Some key concepts lay the foundation for this study; they are introduced in this section.

1.2.1 Positioning the researcher as an inbetweener

Having introduced myself as a Sri Lankan, speech therapist and overseas worker, I now position myself as a researcher. In recent years, several studies have addressed the concepts of the 'insider', 'outsider' and 'inbetweener' (McNess, Arthur, &Crossley, 2015; Milligan, 2016). They have attempted to place the author in cross-cultural research. Previous investigations have defined the outsider as detached and objective, and the insider as culturally rooted and subjective (McNess et al., 2015). The latest studies, however, have proposed that in current international research, the distinction between the two is not dichotomous (Milligan, 2016). Milligan (2016) has introduced the term 'inbetweener' in this context to describe someone who is neither an

insider nor a complete stranger (outsider) to the system; it is an ideal word for my position in this study. Having grown

up in Sri Lanka and personally experienced its healthcare system as both a patient and a therapist, I could consider myself an insider. However, having moved to and worked in the UAE, and having experienced healthcare delivery outside Sri Lanka, my entry back into my country's medical sector as a researcher makes me an outsider. Thus, I am most appropriately described as an inbetweener in this case.

Being in this position has roused a constant argument in my head: Is Sri Lanka's health system able to deliver services as efficiently as more developed countries? Working in the UAE, which has undergone a profound growth in all aspects over the past two decades (Mirkin, 2010), I realised that I was in a healthcare system facing constant transformations to meet the demands of increasing consumer expectations that matched the rising wealth of the population (Hannawi & Salmi, 2014). It was also evident to me that residents of the UAE constantly measured the medical services provided against more developed contexts and sought treatment overseas (Rizvi & Bell, 2015). I therefore realised that, despite observing a well-functioning system there, more developed countries may offer better healthcare service. This caused me to ponder if Sri Lanka may be struggling in this regard.

This thought, however, has often been challenged by my own intuition and my colleagues and supervisors. Could there ever be a universal standard of practice? Can health services be compared across contexts? Do practices in other settings account for or meet the local requirements? Would the standards designed for one country be culturally relevant and/or sensitive to the socio-economic and political realities of another?

1.2.2 Health care contexts: Majority versus minority worlds

Delivering effective and efficient health services is evidently a challenge for nations across the globe (Berman, Pallas, Smith, Curry,& Bradley, 2011), especially in the majority world. The majority world refers to countries that comprise most of the globe – and those previously termed ‘less-developed countries’ (LDCs)(Marsh, Keating, Punch,& Harding, 2009). In these nations, healthcare is confounded by economic and geopolitical constraints, transportation and geographic barriers, limited clinical workforce, infrastructural challenges and poor reporting systems (Robertson, Dehart, Tolle,& Heckerman, 2009). Sri Lanka is a low-middle income country (World Bank, 2017), which fits well into the description of the majority world. As a Sri Lankan, I believe this would make it an excellent platform from which to explore the efficiency of medical practices in such nations.

Henceforth in this study, ‘majority world’ and ‘minority world’ will be used frequently to describe the broad context in which health services are based. The latter refers to countries that comprise fewer of the world's nations – and that were previously termed ‘more-developed countries’ (MDCs) (Marsh, et al., 2009).

1.2.2.1 Overview of the Sri Lankan healthcare system

Sri Lanka is an island of approximately 62,000 square kilometres with a population of nearly 21 million. Administratively, it consists of eight provinces, 25 districts and over 300 Divisional Secretariat areas. The country has an extensive network of government hospitals and clinics managed by the Ministry of Health (MOH) and nine provincial departments of health. These facilities provide free or low-cost medical care to the entire population (Rannan-Eliya et al., 2015). Sri Lanka also has private healthcare services, mainly in urban and semi-urban areas, that provide curative outpatient and a small percentage of inpatient care (Govindaraj, Navaratne,

Cavagnero,& Seshadri, 2014). These private hospitals are costly and cater to those who can afford to use them (Jayasinghe, 2010). Private funding, out-of-pocket spending and private expenditure by households, including gratuities and in-kind payment, are the most common ways of obtaining private healthcare in Sri Lanka (Perera, Gunatilleke, & Bird, 2007), with very few contributions from personal medical insurance (Rannan-Eliya & Sikurajapathy, 2008).

Despite having to overcome catastrophes such as the civil war – which lasted for over 25 years – and a deadly tsunami, Sri Lanka is gradually transitioning to a middle-income country (World Bank, 2014). Its health sector boasts an impressive record for quality medical care provision (Fernando, 2016) with exceptional outcomes, including a significant reduction in infant mortality and an increase in life expectancy at birth up to 75 years (World Health Organization, 2013b).Rannan-Eliya et al. (2015) have studied asthma, acute myocardial infarction (AMI), childbirth and five other conditions, along with result indicators, in Sri Lankan hospitals and concluded that the quality of inpatient care in the country is excellent and comparable to that in higher-income or minority world contexts.

Even with these exceptional successes, which have been recognised globally, there are still several formidable challenges facing the country's health sector. These include financial constraints, increase in non-communicable diseases and ageing populations, poor governance and unequal distribution of professionals across disciplines and hospitals (Mahipala, 2013). Inherent systemic inequalities also appear to exist within the medical system in Sri Lanka. The abovementioned challenges could potentially influence the effectiveness and efficiency of healthcare practices (Chandratilake, Rees, & Monrouxe, 2015; Marambe, Edussuriya, & Dayaratne, 2012). Interestingly, Sri Lanka's National Health strategic plan, published in 2016 and targeting the year 2025, apart from focusing on preventive and curative services also targets

improving health administration & human resources for health, health financing and improving in rehabilitative services (Ministry of Health Sri Lanka, 2016).

1.2.3 The concept of efficiency in healthcare

To understand the functioning of medical practices in Sri Lanka, I examined measures that are universally used to assess performance. Efficiency, efficacy and effectiveness are dimensions that represent the main taxonomy of organisational performance (Hayajneh, 2014) and are widely used in healthcare research (Bowling, 2014). It is useful to contrast the three terms. Efficacy considers project completion, goal achievement and meeting of deadlines (Pinto & Carmona, 2014). Efficiency is the ratio of output to the input within the system and indicates the rationality of processes to obtain higher quantity and quality results with fewer resources (Pinto & Carmona, 2014). Greater output and lower input lead to higher efficiency; this relates to effectiveness, which describes the quality and level of input and output as it happens (Pinto & Carmona, 2014).

The theoretical focus of this study is the efficiency of healthcare services in Sri Lanka, a majority world country. Palmer and Toggerson (1999) have referred to this parameter as the relationship between resource inputs (costs in the form of labour, capital or equipment) and either intermediate outputs (such as numbers treated and waiting time) or final health outcomes (e.g., lives saved, number of years gained). Efficiency is an area that has been widely researched in recent years (Cromwell, Trisolini, Pope, Mitchell,& Greenwald, 2011). Hussey et al. (2009) have proposed a typology for its measurement in the healthcare context: perspective (who is evalu

ating the efficiency of what entity and why?), outputs (type of product evaluated) and inputs (resources used to produce outputs). They have highlighted a key issue in existing

evaluations: outputs vary depending on several factors such as the clinical presentation of the patient, service provider and geographical area (Fiscella, Franks, Gold, & Clancy, 2000; Schuster, McGlynn, & Brook, 1998), and thus may not be comparable, particularly in quality (Newhouse, 1994). Efficiency measurement is therefore affected by the method used and the inclusion of the output quality (Timbie & Normand, 2007).

According to Hussey et al. (2009), most studies on healthcare efficiency seem to use quantitative paradigms. The present research, however, adopts a qualitative approach (Assessment and Qualification Alliance, 2007) to report experiential data that highlight the perspectives of those involved in the practice. Thus, efficiency here refers to the relationship between the level of resources invested in managing communication and swallowing in PWTs and the quality of the outcomes of these services within the Sri Lankan health sector.

Several models and theoretical frameworks (Ferlie & Shortell, 2001; Handler, Issel,& Turnock, 2001) have been proposed to examine various aspects of healthcare practices.As part of this study, a multidimensional conceptual framework was developed based on the literature review and components of existing models (Handler et al., 2001; Pillay, Kathard, & Samuel, 1997) to study the efficiency of symptom management in PWTs within the Sri Lankan medical system. This framework studies the practice from multiple perspectives: observed or actual, espoused and documented or reported. It is important at this point to define these.

1. Observed or actual: this describes the real practice as it occurs.
2. Espoused: the view of the professionals delivering the service and that of the patients and their families who receive it.
3. Reported or official: documented evidence of the practice via patient files.

1.2.4 People with tracheostomies

Tracheostomy is a surgical procedure for securing a functional and safe airway in patients with various medical ailments, including non-communicable diseases and those affecting an ageing population. Tracheostomy devices relieve upper-airway secretions in individuals who cannot clear them on their own; they also provide a stable airway for patients who require prolonged mechanical ventilation (Durbin, Perkins,& Moores, 2010). As evident in the literature, tracheostomies have become one of the most common surgeries worldwide (Giyloma,Balumuka,&Chalya, 2011). Approximately 10% of hospitalised patients who need mechanical ventilation undergo this procedure (Stelfox et al., 2008) and receive care in a wide variety of institutional and ambulatory settings. Venkat (2013) has stated that, with an ageing general population and the ability for medical professionals to support patients using ventilators, tracheostomies have become a vital tool in the medical management of critically ill individuals. Murthy, Leligdowicz and Adhikari (2015) have reported that care facilities for such cases in the developing countries are sparse. Thus, the burden of critical illness is more likely to occur in majority world contexts, owing to greater risk factors and strikingly lower care capacities (Baker, Shultz,& Dünser, 2011). In Sri Lanka, the network of such facilities is also limited in its distribution and services, resulting in an increased burden on the healthcare system (Haniffa et al., 2014).

Tracheostomised individuals require complex care from clinicians across specialisations (De Mestral et al., 2011; Hyland & Lee, 2003). These patients present with special needs, including quality of life issues related to communication and oral intake (Dikeman & Kazandijan, 2004).Research has demonstrated a lack of sufficient knowledge, confidence and training in various areas of tracheostomy management (Lau & Crouch, 2014; Paul, 2010; Ward,

Agius, Solley, Cornwell,& Jones, 2008). Numerous studies have also reported that the skills, understanding and practices of health professionals who care for clients with a tracheostomy tube vary widely within and between institutions (Shah et al., 2012; Zhu, Das, Brereton, Roberson,& Shah, 2012). Most of the research related to management of this type of surgery has emerged from the minority world, and there have been limited studies in countries such as Sri Lanka. For this reason, I have chosen the practices related to the management of swallowing and communication in Sri Lankan PWTs as the clinical focus of the present study.

1.3 Problem Statement

To improve services, policy makers, medical managers and health professionals need to understand the efficiency of existing practices. However, they have little evidence to guide their decisions on the topic, as well as what areas require strengthening and how to provide efficient services(Zhu, Das, Woodhouse,& Kubba, 2014). Even though extensive research related to swallowing and communication management in PWTs has been published, most of these studies have been conducted in minority world contexts.

Efficient symptom management in PWTs requires well-equipped systems and skilled multidisciplinary teams (Tobin &Santamaria, 2008). It is also necessary to appreciate that healthcare in the majority world – including Sri Lanka – is constrained by financial, capital and human resources, including inadequate mix of skills, knowledge and expertise among practitioners (Sridharan, 2010). It is therefore imperative to study the efficiency of existing services and understand what areas require strengthening.

1.4 Study Aims and Objectives

The aim of this study is to appraise the efficiency of swallowing and communication management in the Sri Lankan health sector from various internal perspectives to understand its characteristics (both benefits and challenges) in the majority world.

To achieve this general goal, the research addresses the following objectives:

1. To describe the best global practices associated with management of swallowing and communication for PWTs by reviewing the literature.
2. To understand the abovementioned practices within the Sri Lankan health sector.
3. To critically appraise such practices in majority world contexts compared to the minority world.

For the third objective, my interpretation of a critical appraisal is further described in Chapter 6. At this point, however, it may be sufficient to state that I have used the term 'critical appraisal' in this study to mean the process by which I explain and contrast practice efficiencies with regards to swallowing and communication in PWTs across various contexts worldwide.

1.5 Research Question

The critical question this study answers is: 'How efficiently are health services in Sri Lanka managing swallowing and communication difficulties in PWTs?'

1.6 Methodology

A qualitative exploratory design was employed; it includes document and descriptive literature reviews, interviews and planned observations. This is the most suitable approach, as there has been little or no research conducted thus far in the majority world on this topic.

The literature review was used to explore global practices related to swallowing and communication management in PWTs. It provided an understanding of what inputs and processes define such practices in various contexts, and this information was used to develop data collection tools to study these practices in Sri Lanka – a member of the majority world.

The professional, PWT and unpaid caregiver perspectives regarding the practice were explored through individual and focus group interviews. The actual and reported viewpoint was studied through planned observation and document reviews of PWTs in Sri Lankan hospitals.

Thematic analysis provided meaning to the findings and a multi-perspective insider view of the practices examined.

1.7 Expected Contribution of the Study

This study adds valuable data to the scarce existing research on swallowing and communication management for tracheostomised individuals in majority world contexts. Policy makers, medical managers and health professionals have little evidence to guide their decisions on how efficient current practices are, what areas require strengthening and how to provide quality healthcare to their patients (Zhu et al., 2014). There is a need for reliable and refined investigations to this end (Koon, Rao, Tran,& Ghaffar, 2013). Thus, this study provides empirical evidence for these professionals to form a baseline of the practice quality.

Access to quality healthcare is a human right, regardless of the location or circumstances of one's birth. In reality, however, the outcomes vary across geographical boundaries defined by socioeconomic status (Phelan, Link,& Tehranifar, 2010). The purpose of this research is to provide a preliminary step for understanding these discrepancies, appraise the possible reasons and find practical ways to close this gap.

Based on these findings, further strategies to improve services for PWTs in Sri Lanka may be developed and implemented. These suggestions can also be adopted by other countries with similar socioeconomic and demographic patterns, thereby enabling improved and effective health services in the majority world.

Finally, this study serves as an important stepping stone for further research pertaining to dysphagia and communication management in Sri Lanka and other developing countries.

1.8 Organisation of the Study

This study is published as a thesis. The following manuscripts, to be included in peer-reviewed journals, have been drafted during the course of the investigation.

- Manuscript 1: Management of Swallowing in People with Tracheostomies: A Scoping Review of Global Practices
- Manuscript 2: Management of swallowing and communication in people with tracheostomies: The case of Sri Lanka
- Manuscript 3: The influence of power dynamics on the efficiency of healthcare practices: a qualitative exploratory study of tracheostomized populations in Sri Lanka

The layout and summary of this thesis is illustrated in Figure 1. Chapter 1 introduces the researcher, key concepts, problem and an orientation to the text. Chapter 2 details the literature review on global practices to identify the components that define swallowing and communication management in PWTs. Chapter 3 outlines the conceptual framework of the study based on the literature review and input from other relevant models; it also explains the theoretical underpinnings of the methodology used, which is presented in Chapter 4. Chapters 5, 6 and 7

describe the results. Finally, Chapter 8 summarises the key findings, draws conclusions, sheds light on implications and opens the platform for further research.

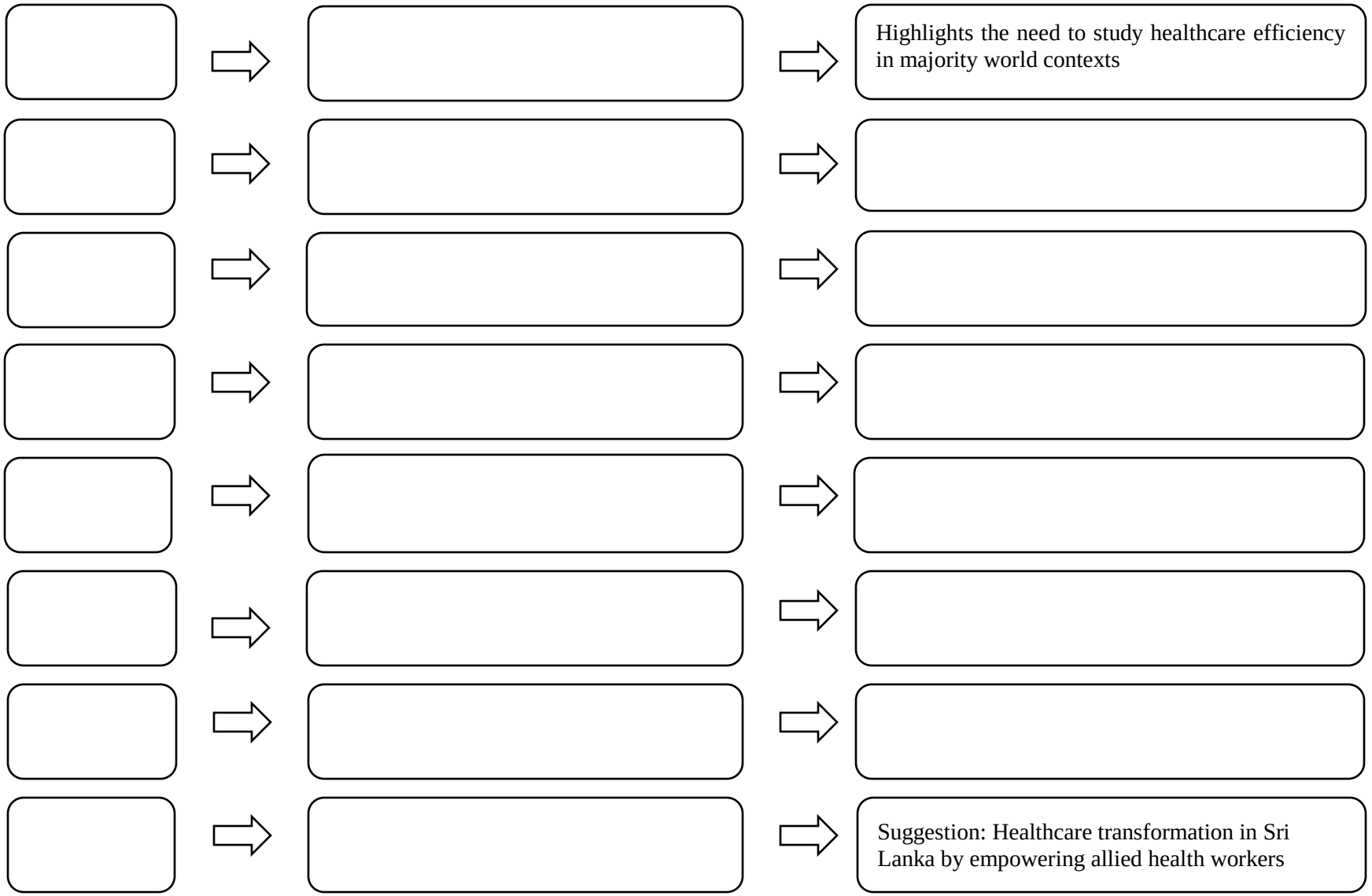

Figure 1.1. Chapter overview

Chapter 2

Literature Review

2.1 Overview

The first objective of this study was to establish the best global practices associated with swallowing and communication management in PWTs. In this chapter, I present a review of the existing research on this topic. As the present study contributes to the global body of knowledge on managing tracheostomies in a resource-constrained setting, it is important to establish what has been done elsewhere to ensure that this research accommodates current best practices in attempting to achieve its aim. I reviewed the literature with three purposes in mind: to describe the processes involved in swallowing and communication management in PWTs, identify the inputs into these practices and recognise the outcomes that are investigated to establish their efficiency, and to understand the methodologies used to explore similar practices in other research.

This chapter is divided into six sections:

The first section presents a key observation pertaining to the literature review: that most research describing swallowing and communication management in PWTs originated from the minority world.

The second segment outlines the results of the literature review, analyses them according to context and provides an understanding of how practices vary across countries and settings. This is presented in a manuscript titled ‘Management of Swallowing in People with Tracheostomies: A Scoping Review of Global Practices’, which has been prepared for publication in the journal *Dysphagia*.

The third section details the processes pertaining to assessment and management of communication difficulties in PWTs in various healthcare contexts; it includes an account of the professionals involved in these practices.

In the fourth segment, I outline and summarise the inputs, processes and outcomes that define these practices. I use this information to develop the conceptual framework detailed in Chapter 3; these details also enabled me to develop the interview, observation schedules and document-extract forms described in Chapter 4, which were used to investigate Sri Lankan practices.

Following this, I identify the various methods used in previous research to describe practices related to swallowing and communication management in PWTs. The use of interviews, observations and document reviews for this purpose is highlighted. This provided me with a sound basis for the choice of data collection methods detailed in Chapter 4.

The last section of the chapter concludes and summarises all key findings from the literature review.

2.2 Publications Related to Swallowing and Communication in PWTs Across Global Contexts

An extensive search for English-language publications on the management of swallowing and communication in PWTs resulted in 85 peer-reviewed journal articles, most of which describe practices in the minority world. Figure 2.2 illustrates the distribution of these studies based on the countries in which they are based.

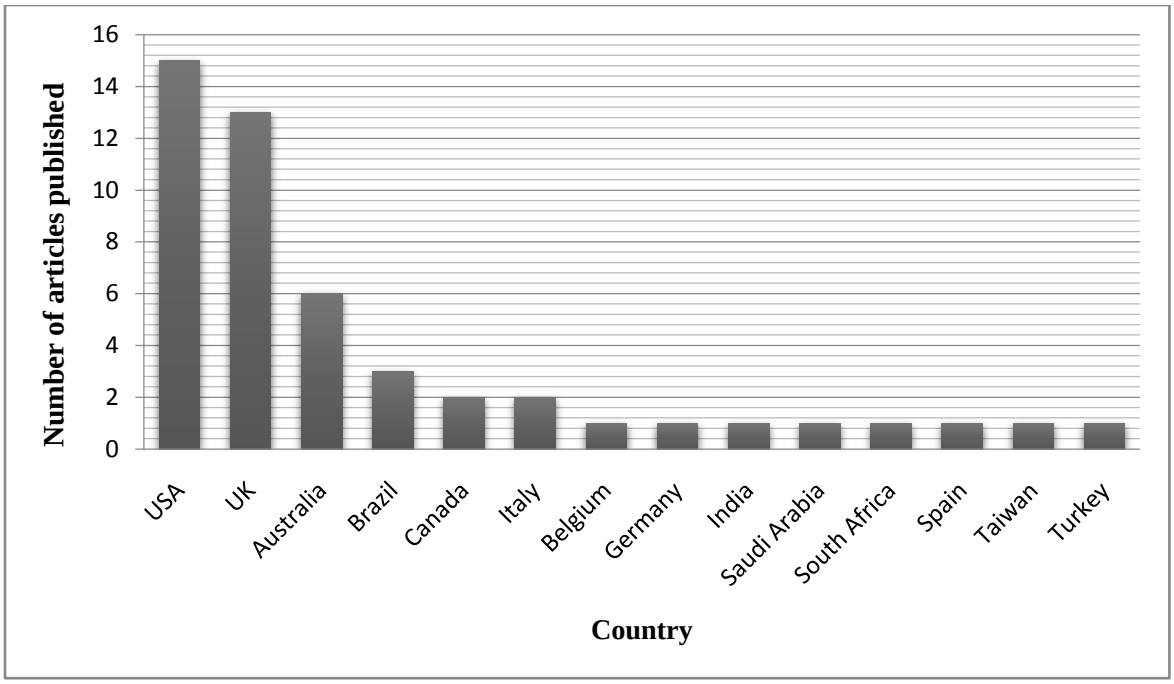

Figure 2.1. Articles related to swallowing and communication management in PWTs by country

The figure above clearly indicates that most research on the subject originated in the US, the UK and Australia, with fewer articles from other minority world nations such as Belgium, Brazil, Canada, Germany, Italy, Saudi Arabi and Spain. The majority world countries that have published literature on this topic include, India, South Africa, Taiwan and Turkey.

2.3 Manuscript 1

This section consists of the first manuscript of this thesis, which is to be submitted to *Dysphagia* and written according to the journal's required specifications. The in-text citations are identified by numbers in square brackets and listed consecutively in the reference list. For integration into the thesis, the figures, tables and pages are numbered continuously as part of the chapter; the title page, declaration and running head of the article have been removed. Details of the method and analysis used for the literature review are detailed, followed by findings that describe assessment and intervention practices related to swallowing management in PWTs,

which are discussed in relation to context.This article may be referenced as ‘Ishak, F.N. & Pillay, M. (2017). Management of Swallowing in People with Tracheostomies: A Scoping Review of Global Practices. *Dysphagia.* volume, pp.’

Management of Swallowing in People with Tracheostomies: A Scoping Review of Global Practices

Abstract

Dysphagia, or difficulty in swallowing, is one of the main disorders experienced by people with tracheostomies (PWTs). It results in aspiration and increased risk of respiratory complications. A preliminary review of existing literature indicates considerable variation in practices involved in the management of this disorder. This scoping review aims to describe these processes in various countries and analyse them in relation to majority and minority world contexts.

A scoping review was conducted using the Arksey and O'Malley (2005) framework, followed bya thematic analysis of the literature. An online databasesearch of articles published between 1 January 1990 and 1 April 2016 was performed, and those pertaining to surgery, general tracheostomy care and paediatrics were excluded.

The results confirm that research on the subject comes mainly from minority world countries. Thematic analysis reveals evolving trends in practices that vary within and between majority and minority world contexts, and indicates increasing efforts by professionals in the latter regions to achieve global standardisation. The greatest variations appear in blue dye tests, cuff deflation status during oral feeding and the use of the speaking valve to manage swallowing. There are also discrepancies among the professionals involved. This review provides a comprehensive compilation of evidence on swallowing management for PWTs and indicates the need for further studies to understand practices in majority world contexts.

Keywords

Tracheostomy, swallowing, scoping review, global practices

Introduction

Dysphagia, or difficulty in swallowing, is a disorder commonly experienced by people with tracheostomies (PWTs), as the presence of the tracheostomy tube interferes with the normal movement of the larynx [1]. A preliminary review of the published research reveals no clear agreement on practices related to swallowing management in this population [2], and the knowledge levels of relevant professionals vary between and within healthcare settings [3,4]. This study therefore aims to describe global practices in this arena and to understand them in the medical context. Inadequate skills and inconsistent procedures may lead to complications and suboptimal care for affected persons [5]. Review articles on the relevant practices [6,7] have recently been published, but they have not examined the processes in relation to context.

Contextual evaluation and exploration of global trends are essential, due to healthcare inequities and large gaps in empirical research between the majority and minority world settings [8]. The majority world refers to nations that are generally considered 'less-developed countries' (LDCs), while the minority world refers to the fewer 'more-developed countries' (MDCs) [9]. This review is part of a larger study that examines the efficiency of swallowing and communication management practices in PWTs within a majority world context, particularly in Sri Lanka.

Methods

The 'curriculum of practice' [10] was used as the conceptual framework for this review (Figure 2.2). Initially designed to study services provided by practitioners to Black, African first-language speakers in South Africa, it indicates the health practice components and the perspectives from which they are viewed. The framework examines practice through three lenses: the official (documented), espoused (opinion) and actual (observed) perspectives. It also

reviews various elements of the processes: practices, policies, education and training. The dashed line in Figure 2.3 indicates the framework components used to provide structure for the present review and serves as a tool to view the elements of tracheostomy-related practices in the literature.

In particular, the review addresses the practices and resources used, policies governing them, and the education and training required for professionals to manage this patient population in various contexts worldwide. The methodology for this scoping review was based on the framework outlined by Arksey and O'Malley [11] and carried out in the following steps:(1) identification of the research question and (2) relevant studies, (3) study selection, (4) data charting and (5) collating, summarising and reporting the results. The following research questions guide this review: ‘How is swallowing managed in PWTs?’ and ‘How do these practices vary across contexts?’

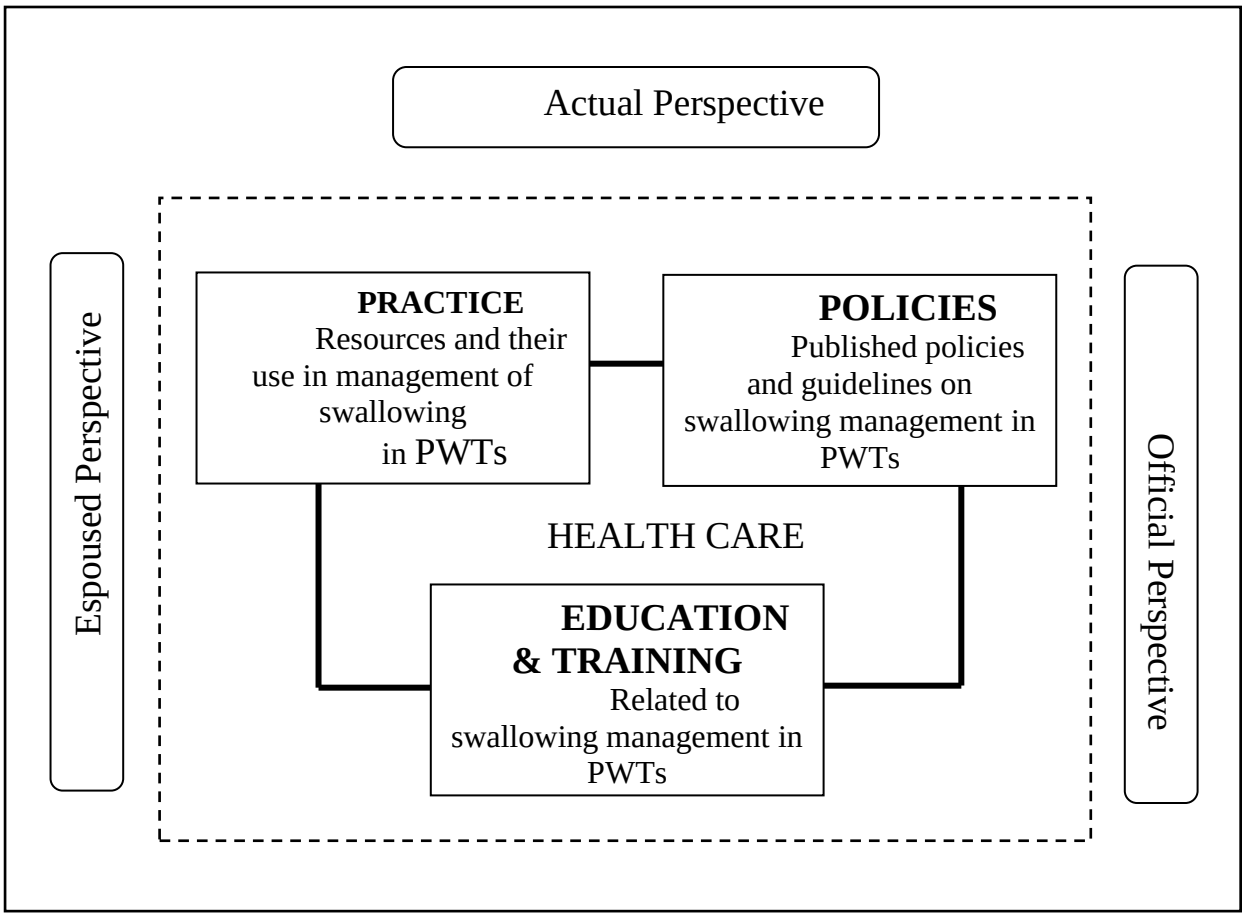

Figure 2.2. The conceptual framework of the study adapted from the curriculum of practice [10]

A three-level search – electronic database, web and manual – was conducted using a keyword exploration in peer-reviewed journals published between 1January 1990 and 1 April 2016. Five databases were targeted: Medline/PubMed, Medline/Ebsco, CINAHL, PsycINFO and SCOPUS. The keywords used were: (‘tracheostomy’ or ‘tracheotomy’), (‘swallowing’, ‘dysphagia’ or ‘feeding’) and ‘communication’. Articles related to surgery, general tracheostomy care and paediatrics were excluded, as were those that are investigative in nature; only those describing clinical practices were included. Web-based resources were identified using the same keywords through Google and Google Scholar. When full texts were not available, they were

obtained by contacting the authors via ResearchGate (a social network site where academics may list their publications).

An online search of Sri Lankan journals was conducted using the same keywords, but did not result in any articles. Consequently, a manual investigation was undertaken at two university libraries (Faculties of Medicine at University of Peradeniya and Colombo Medical College, Sri Lanka). No studies on swallowing and communication management in PWTs were found. In total, 450 articles were identified, and this number decreased to 249 once the duplicates were removed. Following a sequential selection process (Figure 2.4), 115 articles were thematically analysed. The ones remaining after the filtering process consist of peer-reviewed academic articles, policies, guidelines and position papers related to the focus of this investigation.

The database and web searches were independently carried out by the primary researcher and a trained assistant. There was 90% agreement between them, with divergences on the inclusion of technical papers that were resolved through discussion. Qualitative content and thematic analysis was carried out on the extracted data [12], which were based on components of the conceptual framework (Figure 2.3): practices and resources used, policies governing the practice related to managing swallowing disorders, and education and training available for professionals. Information on the context and country in which the study was reported was also included. Open coding [13] was used to cipher the various swallowing and communication management practices, and the results were divided into subsets according to descriptions of the two components. This article presents only the findings related to the management of swallowing, while those on communication will be published in a subsequent paper.

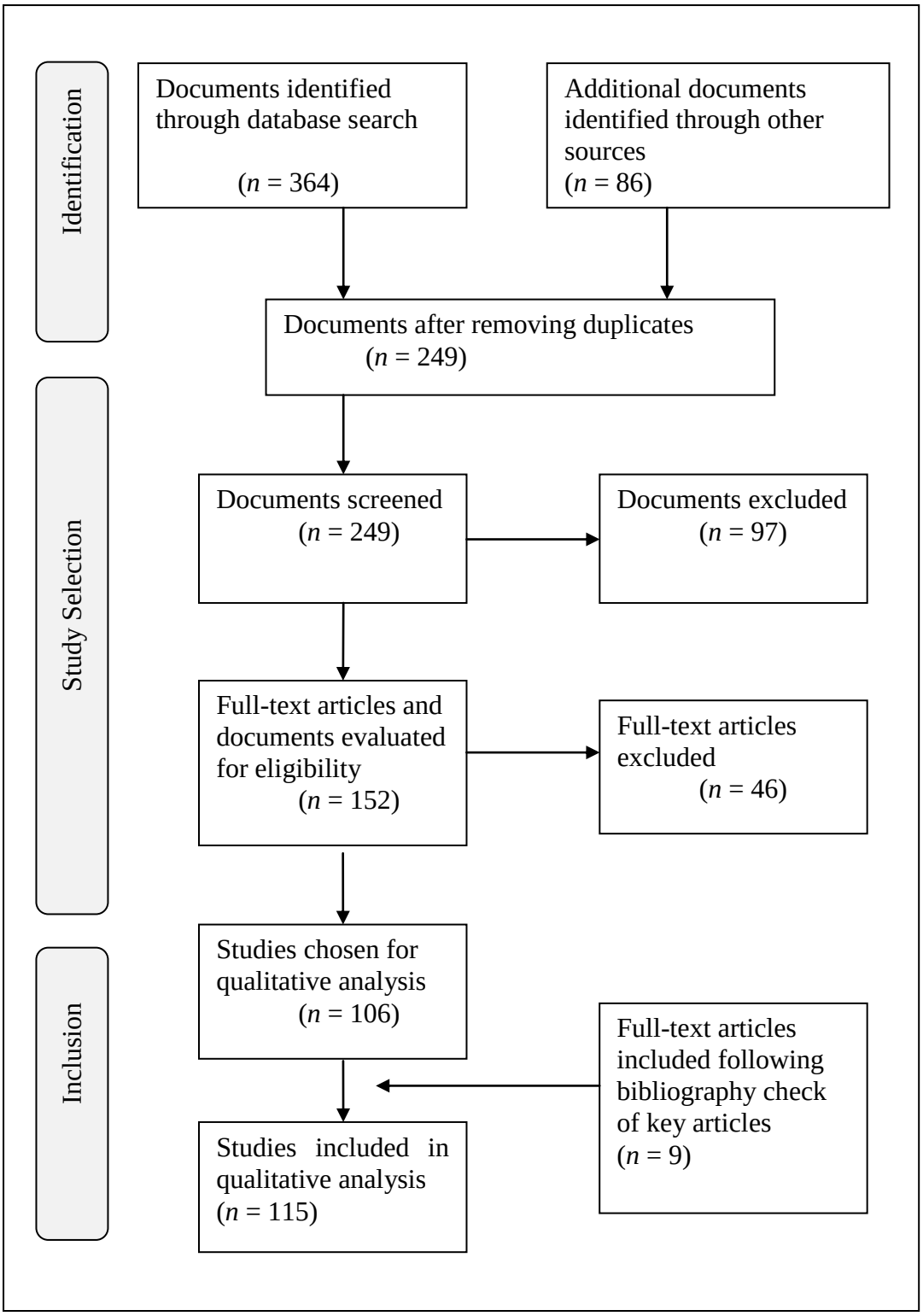

Figure 2.3. The study- selection process

Results

The results are presented in three sections, as per the conceptual framework of the study. They consist of: (1) practices, including resources and their use in assessing and managing swallowing; (2) policies and guidelines related to these practices and (3) education and training available for relevant professionals.

The following abbreviations are adopted for the three tables below: ear, nose and throat (ENT) specialist, speech language pathologist (SLP), multidisciplinary team (MDT), interdisciplinary team (IDT), intensive care unit (ICU), speaking valve (SV), bedside swallow evaluation (BSE), oro-motor examination (OME), fibreoptic endoscopic evaluation of swallowing (FEES), video-flouroscopy swallow study (VFSS), respiratory therapist (RT) and physiotherapist (PT).

Practices related to swallowing management in PWTs

Table 2.1 summarises the findings on the assessment and intervention practices for the management of swallowing difficulties in PWTs. The articles reviewed have been grouped by country in which the study was carried out. The procedures, capital resources and professionals involved in the practices are detailed. The context in which each study was done has also been outlined. Most of the research on the subject originated from the minority world: the US (nine studies), the UK (five), Australia (four) and Brazil (two); Belgium, Canada, Germany, Italy, Saudi Arabia and Spain have one article each. There is an evident lack of studies on the topic in the majority world (with one paper each from India and South Africa). As observed in Table 1, several variations in practices exist within and across contexts, including differences in assessment methods, types of interventions used and professionals involved. The use of blue dye

tests for assessment, cuff deflation and speaking valves during oral feeding are some of the most prominent examples of these variations

Table 2.1. Publications related to the management of swallowing in PWTs

Australia		
Reference		Speech Pathology Australia (2005)
Design and method		Best practice guidelines
Sample		*NA
Practices	**Assessment**	Assessment by an expert team; some PWTs received oral intake with inflated cuffs Blue dye assessment not recommended due to associated confusion and controversy
	Intervention	Feeding with SV has mixed reviews
	Professionals	MDT, SLP, treating doctor, nurses, PT, OT, dietician, ENT, neuropsychologist, respiratory and ICU doctor
	Resources	Tracheostomy tubes, SV and alternative and augmentative communication (AAC)
Reference		Ward, Agius, Solley, Cornwell,& Jones (2008)
Design and method		Survey of SLPs
Sample		Acute care
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	SLP MDT: optimal functioning depends on the ward and hospital
	Resources	Tracheostomy Interest Group of Australia (TIGA): a nationwide, voluntary, non-funded organisation designed to link SLPs interested in the management of PWTs Tracheostomy-related professional development Formal suctioning competency training programs In-services within workplace
Reference		Clayton, Kennedy,& Maitz (2010)
Design and method		*NA
Sample		*NA
Practices	**Assessment**	Nasoendoscopy by ENT surgeon as requested by SLP
	Intervention	Diet and fluid modification, postural modification and oropharyngeal strengthening exercises
	Professionals	IDT: ENT and SLP
	Resources	*NA
Reference		Freeman-Sanderson, Togher, Phipps,& Elkins (2011)
Design and method		Retrospective chart review
Sample		ICU and other clinical areas
Practices	**Assessment**	Cuff deflation
	Intervention	SLP intervention to return to oral feeding
	Professionals	SLP identified as an integral member

	Resources	SV
Reference		Sutt, Cornwell, Mullany, Kinneally,& Fraser (2015)
Design and method		Retrospective audit
Sample		Cardiothoracic ICU
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	MDT: medical, nursing and allied health, part-time SLP service, open referral system for PWTs
	Resources	In-line SV
Reference		Pryor, Ward, Cornwell, O'Connor,& Chapman (2016)
Design and method		Retrospective review
Sample		ICU and ward patients
Practices	**Assessment**	SLP: blanket referral during ward rounds Regardless of cuff status, clinical swallow evaluation (CSE) done ± FEES as needed
	Intervention	Frazier free water protocol used Oral intake trialled and commenced in ICU and/or ward depending on the clinical profile, not the location Ventilated PWTs usually had oral intake prior to cuff deflation
	Professionals	Intensivist led MDT: all patients discharged from ICU except those seen by ENT
	Resources	FEES Ice chips Oral hygiene
Belgium		
Reference		Vandenbruaene, Dick,& Vauterin (2008)
Design and method		Proposed protocol for swallow assessment
Sample		*NA
Practices	**Assessment**	Referral to ENT/SLP for bedside assessment. Medical history reported by nurse/PT. Food trials performed based on screening Blue dye test for aspiration Cranial nerve and reflex assessment: cough SLP: CSE complemented with vital monitoring FEES: ENT and SLP
	Intervention	SV during indirect swallowing therapy: FEES repeated with liquids or food when swallowing improves. If no aspiration, PWT starts direct therapy. If not (ENT/SLP decision) indirect therapy continues until improvement seen in FEES SV used for unidirectional airflow and pressure Postural changes, compensatory strategies and diet modification
	Professionals	ENT/ SLP, nurse, PT, OT, dietician
	Resources	FEES, blue dye, SV

Brazil		
Reference		De Mestral et al. (2011)
Design and method		Retrospect chart review and prospective data from ICU database
Sample		Trauma ICU
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	IDT: staff surgeon, RT, SLP, clinical nurse specialist
	Resources & tools used	Checklist for nurses and treating physicians
Reference		Zanata, Santos,& Hirata (2014)
Design and method		Prospective study
Sample		TBI
Practices	**Assessment**	CSE with occluded tracheostomy and various consistencies of food. Functional oral intake scale (FOIS): grading the functional oral intake
	Intervention	*NA
	Professionals	SLP
	Resources	FOIS
Reference		Rodrigues et al. (2015)
Design and method		Prospective study
Sample		PWT from various wards
Practices	**Assessment**	OME, CSE, modified blue dye test. Ventilometer (to assess volume of expired air with speaking valve). ENT: video-nasal endoscopic examination of swallowing: laryngeal sensitivity testing by ENT and SLP
	Intervention	Early swallowing rehabilitation programme in ventilated PWTs. Oro-motor therapy, direct and indirect interventions. Passy-Muir SV (PMV) used in treatment. Thermal-tactile stimulation, chin down posture, sustained /i/ vowel and melodic curves manoeuvres, vocal fold adduction exercises, coughing and effortful swallowing.
	Professionals	ENT SLP
	Resources	FEES, ventilometer, PMV, blue dye, video nasal endoscopic evaluation, Rosenbek scale
Canada		
Reference		Rose et al. (2015)
Design and method		Online survey
Sample		*NA
Practices	**Assessment**	Swallow evaluation: dietician in 29% and SLP in 70% of hospitals Oral reflex examination, trial feeding with soft feed, VFSS, laryngeal reflex testing Trial swallow with coloured liquid, FEES
	Intervention	*NA
	Professionals	Dieticians, SLP's
	Resources	VFSS, FEES, measurement of Nitrogen balance, pre-albumin

Germany		
Reference		Warnecke, Suntrup et al. (2013)
Design and method		Prospective observational study, interviews and chart review
Sample		Acute neurological cases, weaned from mechanical ventilation
Practices	**Assessment**	CSE as part of decannulation protocol: management of saliva by laryngeal palpation MEBDT optional FEES (used in more than 50% of neurological stroke units in Germany)
	Intervention	*NA
	Professionals	SLP
	Resources	*NA
Italy		
Reference		Garuti et al. (2014)
Design and method		Review
Sample		NA*
Practices	**Assessment**	Protocol: blue dye test before decannulation (10 mL, then 50 ml water with blue dye), carried out twice within a day with SpO2 monitoring. CSE with food trials ENT - Instrumental assessment
	Intervention	*NA
	Professionals	ENT, SLP (no clearly defined roles)
	Resources	Methylene blue, FEES, SpO2 monitor
Reference		Ceriana et al., 2015
Design and method		Prospective observational single centre study
Sample		*NA
Practices	**Assessment**	CSE, modified blue dye test with cuff deflated VFSS independently reported by two radiologists. Different postures trialled SLP's role in VFSS not defined
	Intervention	Tailor-made SLP intervention: dietary consistency, head positioning, Mendelsohn's manoeuvre, cuff deflation, SV and thermal stimulation when indicated. Second VFSS performed four weeks after the first to assess improvement
	Professionals	SLP, radiologist
	Resources	Blue dye, VFSS
India		
Reference		Vandana & Suri (2008)
Design and method		Descriptive
Sample		*NA
Practices	**Assessment**	Use of proforma in CSE, instrumental assessment.
	Intervention	Swallowing strategies, postural changes, manoeuvres and diet modifications, orofacial/oropharyngeal exercises, oral and nasal splints, thermal stimulation Counselling caregivers, home programme
	Professionals	SLP
	Resources	*NA

Saudi Arabia		
Reference		Alhashemi (2010)
Design and method		Descriptive review
Sample		TBI
Practices	**Assessment**	Review of medical chart and caregivers' interview, CSE-feeding trials by SLP/doctor/nurse, OME, blue dye test. Physician orders VFSS or FEES to rule out aspiration
	Intervention	Texture modification, NGT first replaced by PEG
	Professionals	SLP, physician, nurse (no clearly defined roles)
	Resources	VFSS, FEES, blue dye, tube feeding
South Africa		
Reference		Hoosen (2012)
Design and method		Exploratory descriptive survey design, interviews
Sample		*NA
Practices	**Assessment**	Varied practices in screening, assessment and management of dysphagia – particularly in blue dye testing, suctioning and cuff deflation protocols
	Intervention	*NA
	Professionals	SLP, nurses
	Resources	*NA
Spain		
Reference		Alvo & Olavarría (2014)
Design and method		Review
Sample		*NA
Practices	**Assessment**	Complimentary use of bedside assessments, water tests, FEES, VFSS
	Intervention	Laryngeal elevation manoeuvres, nasoenteral probes, gastrostomies and surgical techniques which divide the aerodigestive tract
	Professionals	MDT: intensivist consults ENT for swallow assessment
	Resources	*NA

UK		
Reference		Woodrow (2002)
Design and method		Evidence-based review
Sample		*NA
Practices	**Assessment**	Assessment for intact cough and gag reflexes before using fenestrated tubes and SV
	Intervention	Nurse assesses nutrition, supplementing nutritional intake with nasogastric feeding if necessary; referral to a dietician
	Professionals	Nurse, dietician
	Resources	*NA
Reference		Arora, Hettige, Ifeacho,& Narula (2008)
Design and method		A prospective third-cycle audit
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	ENT led MDT team Specialist trainee physician, SLT, respiratory PT and critical care outreach nurse
	Resources	Local tracheostomy care guidelines (St. Mary's tracheostomy care bundle)
Reference		Batty (2009)
Design and method		Expert opinion on best practices
Sample		*NA
Practices	**Assessment**	Blue dye test as part of a series
	Intervention	Oral intake with inflated cuff, team agreement based on patient status
	Professionals	SLP/dysphagia-trained professional
	Resources	*NA
Reference		Cetto et al. (2011)
Design and method		Prospective cohort study, teaching hospital
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	PT, ENT, SLT, outreach and resuscitation practitioner, intensive care medicine practitioner, respiratory medicine practitioner and dietitian
	Resources	Tracheostomy care bundles and pathways St Mary's tracheostomy care bundle
Reference		NHS (2011)
Design and method		Registered guideline for nurses
Sample		*NA
Pr	**Assessment**	SLP or a verified practitioner conducts swallow assessment with/without blue

		dye, SpO2 monitoring Clear signs of aspiration and guidelines for when to refer to SLP
	Intervention	Introduction of oral feeding: MDT decision
	Professionals	Nurse
	Resources	Relevant local policy, protocols and guideline, SV, SpO2 monitors
Reference		Mullender, Wheatley,& Nethercott (2014)
Design and method		Case study
Sample		Large populations from acute care and ICU with increased socio-economic deprivation
Practices	**Assessment**	Blue dye test, FEES for high risk PWTs, cuff status not important for safe oral feeding
	Intervention	Dual feeding oral and NGT
	Professionals	SLP, nurse, intensivist, dietician
	Resource	Blue dye, FEES, tracheostomy tubes with a sub-glottis suction
Reference		Dawson (2014)
Design and method		Review
Sample		*NA
Practices	**Assessment**	Sips of sterile water used for screening. If tolerated, the patient may eat and drink; refer to SLP if patient fails
	Intervention	Ideally cuff fully deflated and a swallow test initiated before oral intake. Some patients manage oral feeding with inflated cuff
	Professionals	SLP, nurse
	Resources	*NA
Reference		Royal College of Speech and Language Therapists (RCSLT) (2014)
Design and method		Position paper
Sample		*NA
Practices	**Assessment**	Guidelines on early identification of dysphagia
	Intervention	Diet and medication modification and alternative feeding. Individualised treatment strategies, advice on oral hygiene, oral desensitisation: e.g., the management of bite reflex. Sensory integration approaches such as facial oral tract therapy (F.O.T.T.™)
	Professionals	MDT/SLP
	Resources	FEES, VFSS
Reference		McGrath & Wallace (2014)
Design and method		Reviews of tracheostomy-related critical incidents
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	SLPs, PTs, ENT and nurse involved. Specialist MDT staff provide continuity of care
	Resources	RCSLT guidelines

Reference		McRae, Fox,& Morgan (2015)
Design and method		Correspondence
Sample		*NA
Practices	**Assessment**	Blue dye tests not used. Expert assessment including FEES
	Intervention	PEG (not NGT) recommended for high SCI patients Cuff deflation highlighted in management of communication and swallowing
	Professionals	SLP as part of MDT
	Resources & tools used	*NA
Reference		Ginnelly & Greenwood (2015)
Design and method		Mixed-methods study, semi-structured online questionnaire, follow-up telephone interviews
Sample		*NA
Practices	**Assessment**	Swallow screening varies (cuff inflated/deflated), not used by all or based on national recommendations. 'At risk' patients are identified through ward rounds. SLP develops screening guidelines. Screening is done by other professionals and patient is refereed to SLP for detailed assessment if required (for economic reasons). Recommendation for members such as PT to be involved to increase implementation of screens.
	Intervention	Some long-term/palliative patients, recommended to eat with inflated cuff to increase quality of life
	Professionals	MDT: SLT as dominant member, PTs manage respiratory function
	Resources	NA*
USA		
Reference		Hauck (1999)
Design and method		Descriptive
Sample		Rehab patients
Practices	**Assessment**	Blue dye test, VFSS/ FEES if required
	Intervention	Diet modification (training persons involved in patient's meals). Direct rehabilitation techniques: exercise programs, range of motion and coordination, sensory treatment, specific manoeuvres, modifications in size and type of tracheostomy tube. Gradual and complete deflation or absence of cuff. Use of a SV and/or adjustment of ventilator flows during meals.
	Professionals	MDT: physician, SLP (lead role), nurse and RT
	Resources	Portable videostroboscopy, SV, blue dye, VFSS, modified diets
Reference		Goldsmith (2000)
Design and method		Descriptive
Sample		*NA
Practices	**Assessment**	Case history, CSE, blue dye test: screening tool for gross aspiration, modified to include food consistencies with blue dye under various conditions (e.g., cuff inflated/deflated) Blue dye in enteral feedings to assess gastroesophageal reflux (economical but less sensitive). VFSS (videotape for recordings). FEES (new procedure)
	Intervention	Algorithm for management: CSE & blue dye test. If aspirating: NPO and downsize tracheostomy. Trial speaking valve. Repeat blue dye test every two

		to three days
	Professionals	IDT
	Resources	Methylene blue, VFSS, FEES
Reference		Leder (2002)
Design and method		Prospective consecutive
Sample		PWTs: urban tertiary care hospital
Practices	**Assessment**	FEES or VFSS
	Intervention	*NA
	Professionals	*NA
	Resources	FEES, VFSS
Reference		Davis & Stanton (2004)
Design and method		Retrospective chart review
Sample		Elderly and medically complex PWT, multiple diagnoses
Practices	**Assessment**	CSE: oral motor, cognitive assessment and signs of aspiration, VFSS
	Intervention	Swallowing guidelines, diet modification, strategies/manoeuvres to improve swallowing
	Professionals	SLP
	Resources	VFSS, modified diets
Reference		Donzelli, Brady, Wesling,& Theisen (2006)
Design and method		Prospective, descriptive
Sample		Various diagnoses: stroke, TBI, SCI, heart and respiratory failure
Practices	**Assessment**	5-point Marianjoy secretion grading scale FEES (protocol)
	Intervention	Modified diet levels: NPO, therapeutic feedings
	Professionals	*NA
	Resources	Speaking valve Marianjoy secretion scale Olympus ENF flexible endoscope, Pentax sensory flexible endoscopes
Reference		Windhorst, Harth,& Wagnor (2009)
Design and method		Descriptive, model for interdisciplinary decision making
Sample		Rehabilitation hospital, multiple diagnoses
Practices	**Assessment**	SLP: SV assessment prior to swallowing evaluation Assessment of secretions and sensation Protocol: initial cuff deflation, placement of SV with SLP and RT. SV tolerance followed by capping. FEES
	Intervention	SV to improve swallowing
	Professionals	SLP, RT, physician
	Resources	Flow chart (SV decision making)
Reference		Seckel & Schulenburg (2011)
Design and method		Dialogue
Sample		*NA
Practices	**Assessment**	Chart review, oral mechanism and ice trials, modified blue dye test, FEES, VFSS

	Intervention	Postures (e.g., chin tuck, head turn) or techniques (e.g., effortful swallowing, liquid wash)
	Professionals	SLP part of MDT
	Resources	*NA
Reference		Chaw, Shem, Castillo, Wong,& Chang (2012)
Design and method		Prospective study
Sample		Spinal cord injury
Practices	**Assessment**	Cuff deflation trials. RT: monitor saturations and peak airway pressures, provide tracheal suction. SLP: BSE with appropriate positioning Option of using a PMV during BSE.
	Intervention	Modified diets or recommended enteral feeding
	Professionals	Interdisciplinary team: SLP and RT
	Resources & tools used	PMV, suctioning, vitals monitor, modified diets
Reference		Fisher et al. (2013)
Design and method		Prospective data (medical records)
Sample		NA*
Practices	**Assessment**	SLP: consultation and assessment as per institutional guidelines
	Intervention	Diet modification, SV before oral intake
	Professionals	Physician, SLP, nutritionist. RT and nursing staff
	Resources	Institutional guidelines SV

*NA – Not addressed

Protocols for managing swallowing and communication in PWTs

Table 2.2 summarises the national policies, guidelines and position papers published by various countries related to the management of swallowing in PWTs. Most of these are from the minority world, and in Australia, the UK and the US, the guidelines have been published by associations related to speech pathology. Sri Lanka is the only majority world nation which has published guidelines on tracheostomy management.

Table 2.2. Policies, guidelines and position papers related to swallowing and communication management in PWTs

Australia	
Document name	SLP Australia Position Paper (2005)
Author	The Speech Pathology Association of Australia Limited
Previous publication	1996
Document name	SLP Australia Tracheostomy Guideline (2013)
Author	The Speech Pathology Association of Australia Limited
Previous publication	
Scotland	
Document name	Caring for the patient with a tracheostomy (2007)
Author	NHS Quality Improvement Scotland
Previous Publication	2003
Sri Lanka	
Document name	Guidelines for the care of a patient with a tracheostomy (2013)
Author	Faculty of Critical Care, The College of Anaesthesiologists of Sri Lanka
Previous Publication	NA
UK	
Document name	NHS Guideline: Management of patients with a tracheostomy following discharge from critical care (2010)
Author	Critical Care Network, Northern Ireland (CCaNNI)/NHS
Previous Publication	NA
Document name	Guidelines for the Care of Patients with Tracheostomy Tubes (2012)
Author	St George's Healthcare NHS Trust
Previous Publication	NA
Document name	Care of Adult Patients in Acute Care Facilities with a Tracheostomy Clinical Practice Guideline (2013)
Author	Clinical Excellence Commission (CEC), Agency for Clinical Innovation (ACI) and Local Health Districts (LHDs)
Previous Publication	NA
USA	
Document name	Position statement and guidelines for the use of voice prostheses in tracheostomized persons with or without ventilator dependence (1993)
Author	American Speech & Hearing Association
Previous Publication	NA
Document name	Preferred Practice Patterns for the Profession of Speech-Language Pathology (2004)
Author	American Speech & Hearing Association
Previous Publication	NA

*NA – Not Applicable

Education and training related to swallowing management

Researchers from various countries have addressed or commented on the education and training for swallowing management provided to professionals working with PWTs. These findings are summarised by country in Table 2.3, which indicates that management of tracheostomies is considered a specialised skill in most settings. Both the majority and minority worlds recognise that further learning is required for specialists working with this patient population.

Table 2.3. Educational curricula and professional training related to tracheostomy management

Australia	
Reference	Ward, Agius, Solley, Cornwell,& Jones (2008)
Design and method	Survey of SLPs
Education and training	45% are not up to date with evidence-based practice <30% are knowledgeable of the advances in tracheostomy tube technology 16% have worked as part of an optimal team 50% have confidence and clinical support for managing clients who were ventilated 88% believe additional training opportunities would be beneficial
Reference	SLP Australia Guideline (2013)
Design and method	Best practice guideline
Education and training	Management of PWTs is considered advanced practice; specialised training and credentialing recommended for SLP
Saudi Arabia	
Reference	Alhashemi (2010)
Design and method	Descriptive review of practice
Education and training	More teaching and research are needed to increase clinical knowledge and improve patients' outcomes
South Africa	
Reference	Hoosen (2012)
Design and method	Survey, semi-structured face-to-face interviews of SLPs and nurses
Education and training	Undergraduate level – minimal theoretical and practical hours on tracheostomy screening, assessment and management
UK	
Reference	Woodrow (2002)
Design and method	Evidence-based review
Education and training	Limited opportunities for nurses to practise knowledge and skills, as PWT is conducted mainly in ICU and less frequently in wards
USA	

Reference	Tanner (2006)
Design and method	Descriptive
Education and training	Nurses required specialised skills and training to manage PWTs
Reference	Manley, Frank,& Melvin (1999)
Design and method	Survey of SLPs
Education and training	Training levels and preparation to manage PWTs for SLPs vary considerably across the US. SLPs had poor confidence in their ability to manage PWTs and required further education and training
Reference	Windhorst, Harth, & Wagoner (2009)
Design and method	Descriptive
Education and training	Not all SLPs are equally experienced during academic and fellowship years
Reference	Grossbach, Stranberg,& Chlan (2010)
Design and method	Descriptive
Education and training	Limited training for nurses to facilitate, interpret or communicate with PWTs
Reference	Yelverton, Nguyen, Wan, Kenerson,& Schuman (2015)
Design and method	Cross-sectional questionnaire
Education and training	Nurses and physicians have inadequate knowledge and comfort with tracheostomy care within academic medicine

Discussion

As this was a scoping review, it did not assess the quality of the studies included, which is one of the limitations of this approach. However, as the aim was to describe global practices related to swallowing management in PWTs and understand them in the healthcare context, there was no need to critique the method, unlike in a systematic review. It is also important to note that reviews such as this one are limited by the choices of search terms, and the technique may have resulted in the omission of relevant articles.

Practices related to swallowing management in PWTs

The results indicate several similarities and differences in practices within and between various contexts, as discussed below.

1. *Blue dye tests*: The Evan's blue dye test (EBDT; [53]) and its modified version (MEBDT; [54]) were originally developed as screening tools for aspiration – the former for oral secretions and the latter for food or liquids. While the reliability of this approach has been debated [55,56], the literature suggests that blue dye remains a common method for both screening and assessing swallowing in PWTs. This was the case in the US, where it was initially adopted for assessing aspiration [33,38], while in the UK, numerous studies [27,28] have reported its use in screening. McRae, Fox and Morgan [30] have described practices in the Spinal Cord Injury Centre in the UK, where the use of such tests is refuted. The tests are also reportedly used in Belgium [18], Brazil [20], Canada [21], Germany [22], Italy [23], Saudi Arabia [25] and South Africa [26]. In Australia, they have not been reported in any of the practices reviewed, in line with the Speech Pathology Australia position paper published in 2005 [41], which discourages their use due to the associated controversy. It would therefore appear that the use of blue dye tests varies depending on context and country.
2. *Cuff status during oral feeding*: The presence of a cuff in a tracheostomy holds the tube in place and prevents aspiration. The scientific stance on whether the cuff should be inflated or deflated during oral feeding in PWTs remains inconclusive [57], and this is reflected in practices across contexts worldwide. Some studies consider it essential to have the cuff deflated during oral feeding and the assessment thereof [15, 23, 30], while others deem this unnecessary [33]. From the results, most ICU settings [16, 17], and centres with PWTs requiring long cannulation times – such as those with spinal cord injury [31] – opt to feed patients with the cuff inflated. Many rehabilitation settings are reported to perform deflation followed by a speaking valve during oral feeding to improve swallowing function

[23, 37, 32]. Hales et al. [58] have reported that they found aspiration, which was missed during bedside swallow assessment due to an inflated cuff, during instrumental evaluation.

3. *Instrumental assessment*: VFSS is a radiographic procedure that provides a direct and dynamic view of the swallowing mechanism [59]. Fibreoptic endoscopic evaluation is an instrumental procedure widely used due to its objectivity [60]. Both the VFSS and FEES have their advantages and disadvantages; both assess swallowing function objectively, but they are expensive [61] and require specialised training [62] for implementation. The literature indicates that most minority world settings use these methods to evaluate swallowing in PWTs (Australia [17], Belgium [18], Brazil [20], Canada [21], Germany [22], Saudi Arabia [25], Spain [27], the UK [29-31] and the US [33-39]). From these findings, it is also evident that countries such as the US and the UK adopt these instruments in varying settings, namely the ICU, rehabilitation centres and acute care wards. Studies on practices in majority world countries such as India [24] do not specify the techniques used, and in South Africa [26], there are inconsistencies in the practice of VFSS and no mention of FEES for swallowing assessment in PWTs.
4. *Practices related to intervention*: Many rehabilitation techniques are used to manage swallowing difficulties effectively in PWTs [20]. They can be direct (e.g., modification of food texture) or indirect (e.g.,postural changes or the swallowing manoeuvre). The Frazier free water protocol [63] allows patients with swallowing difficulties access to thickened water, and has been reported within an ICU and a ward setting in Australia [17]. The use of a speaking valve to improve swallowing function is widespread across contexts (including ICUs, wards and rehabilitation centres) in countries such as Australia, Belgium, Brazil,

Italy and the US. However, none of the UK studies reviewed reported the use of a speaking valve in swallowing rehabilitation.

5. *Professionals involved in swallowing management practices for PWTs*: The practices used on PWTs usually depend on the professionals involved, with SLPs playing a leading role in swallowing management for this group, specifically in several minority world countries such as Australia [15-17], Belgium [18], Brazil [19,20], Italy [23], the UK [29-29, 32] and the US [33,38-41]. In India, a majority world setting, the SLP plays a major role in swallowing management for PWTs, while in Spain [27], this is the ENT's responsibility. In certain countries, however, the professional roles are not clearly defined; one such example is Saudi Arabia, where Alhashemi [25] reports that doctors, nurses *or* speech therapists perform swallowing assessments. In Germany, these evaluations are conducted by dieticians in 29% of the cases and SLPs in 90% of them [22].

   Minority world nations report MDTs, and more recently, IDTs, in which specialists such as physicians, SLPs, RTs, dieticians and nurses – each with clearly defined roles – collaborate in managing dysphagia in PWTs. In Australia [16-17], Brazil [20], Canada [21], Spain [27] and the UK [29, 32], as well as earlier research in the US [33], the MDT approach has been discussed, while in later U.S. studies [38-41] and Belgium [18], an IDT management approach is followed. Respiratory therapists, as a part of the MDT, are unique to the US [41] and Brazil [64]. De Mestral et al. (2011) [64] from the latter country have outlined the impact of MDTs in managing PWTs and discovered that this is largely done by RTs and SLPs.

6. *Global trends in practice:* It is evident that the majority world is looking to further improve practices and outcomes related to swallowing management in PWTs. In Australia,

Pryor et al. [17] have investigated the efficacy of the free water protocols in such individuals and concluded that it can be used in some tracheostomy cases (general medical and surgical, cardiothoracic and SCI patients). They conclude that PWTs should not be regarded as a single population, and that evaluation of the factors related to the underlying aetiology and individual clinical presentations is essential for selecting the appropriate course of action.

Countries such as the UK are attempting to standardise and improve the efficiency of tracheostomy management. Lewis and Oliver [65] have described a special outreach programme and the development of discharge guidelines passed from the critical care unit to the ward during patient transfers, which are designed to achieve this goal.

In 2002, Australia introduced the Tracheostomy Review and Management Service (TRAMS) [67], which consists of an interdisciplinary, consultative team of respiratory and ICU doctors, clinical nurses, PTs and SLPs. They coordinate all practices surrounding tracheostomy management while supporting and educating patients, caregivers and staff. The TRAMS delivery model has been shared with other facilities and it has produced positive outcomes, including a return to voicing and oral feeding, as well as reduction in cannulation times, lengths of hospital stay and operational costs [66-67].

The Global Tracheostomy Collaborative (GTC) [68], an international tracheostomy quality improvement project, is a global effort towards unifying and improving the efficiency of the services provided to PWTs. Numerous healthcare practices are part of such initiatives, mostly from the minority countries, particularly the UK [69] and Australia [43].

Protocols for managing swallowing in PWTs

Various countries – including the US and Australia – have established position papers and guidelines for managing tracheostomies as early as 1993 and 1996. These procedures have been updated regularly (1999, 2003, 2005 and 2013), wherein the role of SLPs in managing aspects of swallowing and communication has been clearly defined. The need for expert knowledge has been recognised, and national guidelines are made available to provide standard evidence-based practice to PWTs (ASHA 2007, Speech Pathology Australia 2005 & 2013 [42-43]). The US and Australia have acknowledged the importance of an MDT approach [2], which later evolved into an IDT model of care [14] to achieve the desired outcomes. In the UK, the NHS has published registered guidelines for all clinical nurses, with methods to manage PWTs and instructions on referral to SLPs. This was published in 2012 [47], followed by a position paper by the RCSLT in 2014 [49], which recommends the MDT approach and provides guidelines on swallowing and communication management in PWTs.

The limited research from other minority world countries, such as Canada, Germany, Saudi Arabia, Italy and Spain, reveals considerable inconsistencies in the relevant practices. Most have recognised the need for an MDT approach for the most ideal outcomes [25, 27], and there have been evident attempts to develop protocols to manage swallowing [6, 27]. However, very few national guidelines have been identified in these countries, and the publications are recent, with most of them drafted after 2008.

The few studies originating in the majority world have identified the importance of an MDT approach [63, 24], but the practices in these countries appear to vary considerably [27], probably due to a lack of national policies and guidelines. In 2013, Sri Lanka published its first tracheostomy guideline [45], with brief recommendations for swallowing and communication

management but no indication of an MDT approach or evidence of defined roles for various professionals.

Education and training related to swallowing management

Formal education and practical training are essential to the management of swallowing difficulties in PWTs, and the literature indicates that these are minimal at a graduate level [2, 25,26] in curricula across the globe. Swallowing management in PWTs is considered a specialist skill in many countries, including the US [52] and Australia [43]. As there is growing awareness of the MDT's role in managing PWT, as well as global efforts towards practice standardisation, all healthcare systems need to ensure that staff can manage the patient population effectively. Since there are standard assessment and management methods for swallowing difficulties in PWTs, published guidelines may aid the sector to train field professionals to provide effective management to their patients.

Conclusion

This scoping review has revealed global trends in swallowing management for PWTs, despite variations in practices within and between healthcare contexts. The clinical use of resources and the professionals involved vary considerably, but it is evident that most practices, especially in the minority world, are incorporating multidisciplinary – and more recently interdisciplinary – approaches.

The blue dye test, cuff status during assessment and intervention, and use of a speaking valve during oral feeding are some practices that vary within and between contexts. Direct and indirect intervention approaches, or a blend of both, are used in various combinations to manage swallowing disorders in PWTs. Swallowing management in such patients is considered a

specialised skill, and practices worldwide agree that professionals receive limited education and training on the subject.

Practices in minority world countries are directed by national guidelines and extensive literature, whereas limited studies – and no policies or guidelines – are available in the majority world. While minority countries are working towards global uniformity (through the GTC) and further improvement of evidence-based practices (e.g., the free water protocol), the majority countries face the challenges of poorly defined professional roles and a lack of team approaches in managing PWTs. Thus, it is evident that context influences practice, and further research is required, specifically in the majority world, which faces human and material resource restrictions.

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2.4 Practices for Assessing and Managing Communication in PWTs

The global practices for the management of swallowing in PWTs were described in detail in the preceding article. In this section, I discuss those involved in the assessment and management of communication in these patients across contexts.

Patients with tracheotomies experience communication difficulties, as the presence of the tracheostomy tube, especially when cuffed, obstructs airflow from the lungs to the upper airway through the vocal folds; this prevents or restricts the individual from voicing or speaking (Figure 2.4). The cuff is a balloon around the tube that holds it in place and prevents aspiration of secretions. For PWTs to tolerate cuff deflation and direct airflow through the vocal fold, they should safely swallow their secretions; and in cases where this is not possible, other nonverbal means to restore communication may need to be explored.

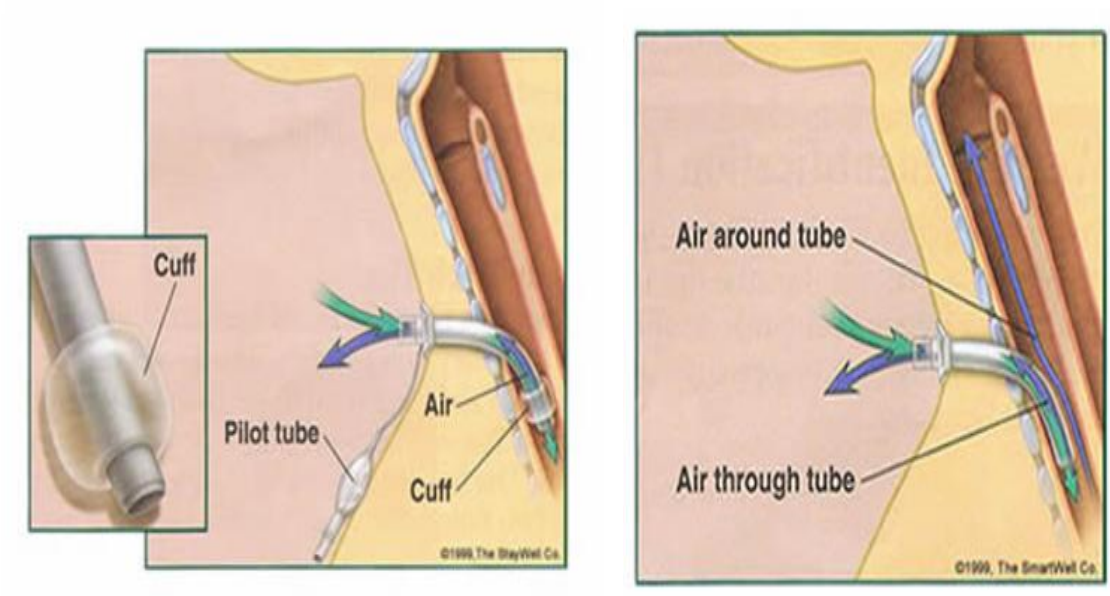


Figure 2.4. Cuffed versus cuffless tracheostomy tubes (adapted from http://trachs.com/cuffed-and-cuffless-tracheostomy-tubes/)

In this section, I detail the practices to assess and manage communication difficulties in PWTs across healthcare contexts. There wasconsiderable variation in such procedures within both majority and minority worlds. The relevant studies reviewed are presented in the three subsections below.

2.4.1 Assessment practices related to communication management

Methods to assess PWTs' ability to communicate have evolved over the years in various healthcare contexts. In Australia, earlier studies (Hemsley et al., 2001) have reported no explicit policies for assessing communication in such patients. Clayton, Kennedy and Maitz (2010) have observed that, following perceptual voice assessments by SLPs, PWTs are referred to ENT specialists for nasoendoscopies in an acute care hospital. Presently, however, an MDT approach is being adopted, and cuff deflation and speaking valve trials are conducted by SLPs and nurses in consultation with physicians (Freeman-Sanderson, Togher, Phipps,& Elkins, 2011). De Mestral et al. (2011) have described practices in a teaching hospital trauma unit, where a doctor's recommendation and the presence of an RT are requirements prior to speaking valve assessments by an SLP.

Similar MDT approaches have been noted in various contexts in the UK, where Woodrow (2002) has described the assessment of intact cough and gag reflexes prior to trials with speaking valve or fenestrated tubes (McGrath & Wallace, 2014). O'Connor and White (2010) have described the use of cuff deflation, followed by finger occlusion, to assess phonation in an acute care context in the US. A recent study (McGrath, Lynch, Wilson, Nicholson & Wallace, 2016) has also discussed the use of specific tools, such as the therapy outcome measure for voice impairment (TOMS), to assess the vocal quality of PWTs post-cuff deflation by an

SLP. It is worth noting that evaluations in Australia and the UK mainly involve cuff deflation, speaking valve and voice assessments in PWTs, but do not address nonverbal communication.

Since the early 2000s, practices in the US have established clear roles within an MDT; nurses conduct screening, followed by a detailed assessment of communication needs by SLPs (Tanner, 2006). This appears to be most prevalent in ICUs (Grossbach, Stranberg, & Chlan., 2010; Happ et al., 2010) and acute care settings (Tanner, 2006). Studies have reported nonverbal communication and AAC assessments in long-term care and outpatient contexts (Ball et al., 2010), where SLPs provide strategies to achieve basic functional communication until further evaluations of voice restoration are carried out (Grossbach, Stranberg, & Chlan., 2010). Specific protocols for cuff deflation and speaking valve trials with definitive roles for SLPs and RTs have also been detailed by Windhorst, Harth and Wagoner (2009). Objective measurements of airway pressures during the use of a speaking valve or cap, such as a tracheostomy tube manometry, have been noted in clinical acute care by O'Connor and White (2010). In the US, therefore, practices across various settings assess PWTs for both verbal and nonverbal communication through an MDT and protocol-driven approach. In the majority world, including India, Vandana and Suri (2008) have discovered that nonverbal communication is evaluated by SLPs with OTs and PTs for PWTs, but there is no indication of assessment for voice restoration, such as cuff deflation or speaking valve trials. The studies addressing communication management in PWTs are summarised in Table 2.4.

2.4.2 Interventions for communication difficulties in PWTs

Patients with a cuffed tracheostomy tube cannot communicate verbally due to a lack of airflow through the vocal folds as described above. The goal of interventions, therefore, is to restore voice or enable nonverbal communication. A review of the global practices suggests that

the use of the speaking valve to aid communication (De Mestral et al., 2011; Ginnelly & Greenwood, 2016; McGrath & Wallace, 2014; Rose et al., 2015), weaning (Alhashemi, 2010; Fisher et al., 2013) and swallowing (Ceriana et al., 2015; Rodrigues et al., 2015) is common in the minority world. Voice restoration by digital or finger occlusion of the tracheostomy has been described by practices in the UK (Batty, 2009; Woodrow, 2002;) and the US (Hauck, 1999), where all the studies have acknowledged infection control issues arising from this practice. Fenestrated tracheostomy tubes (with one or more holes in the outer cannula) have been reported globally; in the UK (McGrath &Wallace, 2014; Woodrow, 2002) and the US (Grossbach, Stranberg, & Chlan., 2010; Hauck, 1999), they have been used for voice restoration in PWTs since 1999 and the early 2000s.

The electrolarynx is a battery-powered device that enables the most common alaryngeal phonation (Liu & Ng, 2007); it is generally used by cancer patients who have undergone the surgical removal of the entire larynx. Some practices, however, have reported the use of the technique to restore communication in PWTs, specifically in the UK (Batty, 2009) and the US (Hauck, 1999). Gul and Karadag (2010) have researched the quality of life in PWTs and reported laryngectomy rehabilitation (oesophageal speech and voice prosthesis), which indicates that these two patient populations were considered a single cohort. This illustrates that practices related to managing PWTs are still not clearly understood and defined in certain countries.

Vandana and Suri (2008) have described traditional voice and articulation therapy to restore communication for PWTs in India. Above-cuff vocalisation is one of the most recent methods used in the UK (McGrath, Lynch, Wilson, Nicholson & Wallace, 2016); it involves directing a retrograde flow of gas via the sub-glottis suction tube to exit above the cuff, thereby restoring airflow through the glottis while the cuff remains inflated.

In cases where voice restoration is not feasible, other means of communication or AAC are generally considered. This approach for PWTs has been noted in Australia (De Mestrel et al, 2011; Freeman-Sanderson et al., 2011; Hemsley et al., 2001), Canada (Rose et al, 2015), India (Vandana & Sure, 2008), Turkey (Gul & Karadag, 2010), the UK (Batty, 2009; Woodrow, 2002) and the US (Ball et al., 2010;Hauck, 1999). These AAC methods include low-technology practices (such as lip-reading and the use of whiteboards, communication boards and gestures) as well as sophisticated devices (iPads, smart phones and gadgets operated by eye movements). It is worth noting that the latter has only been reported in minority world countries such as Canada (Rose et al., 2015) and the US (Happ, 2001; Hauck, 1999). Some studies have noted the implementation of logical strategies by nurses to restore communication; Hemsley et al. (2001) have observed examples such as attending regularly to PWTs during communicative attempts, recognising nonverbal cues and using an agreed-upon yes/no indication system in medical, surgical and rehabilitation units in Australia. Table 2.4 outlines the intervention strategies to manage communication difficulties in PWTs worldwide.

2.4.3 Professionals involved in communication management for PWTs

In most practices around the world, SLPs are the key members responsible for managing communication in PWTs. Australia and the US have established position papers and guidelines to manage tracheostomies as early as 1993 and 1996, which receive regular updates (1999, 2003, 2005 and 2013) and clearly define the SLP's role in managing aspects of communication.

Research in Australian has described the role of the SLP within an MDT team in providing AAC intervention (Hemsley et al, 2001), specifically cuff deflation and speaking valve trials (De Mestrel et al., 2011; Freeman-Sanderson et al., 2011 and Sutt, Cornwell, Mullany, Kinneally,& Fraser, 2015). Similar practices in which the SLP's responsibilities in PWT

communication management are evident exist in Canada (Rose et al., 2015), India (Vandana & Suri, 2008), the UK (Batty, 2009; McGowan et al., 2014; McGrath, Lynch, Wilson, Nicholson & Wallace, 2016, McGrath &Wallace, 2014) and the US (Fisher et al., 2013; Grossbach, Stranberg, & Chlan, 2010; Happ et al., 2010; Hauck, 1999; Windhorst, et al., 2009). In Taiwan, Wang, Lu and Chang (2014) have observed that over 50% of the medical personnel have never referred any tracheostomised inpatients for speech therapy. The professionals involved in communication management for PWTs worldwide are outlined in Table 2.4, which highlights the difference in the SLP's role with regards to managing PWTs in minority and majority world contexts.

Table 2.4. Publications on communication management in PWTs

Australia		
Reference		Hemsley et al., 2001
Design and data collection method		Descriptive: Nursing interviews
Sample		PWTs with severe communication impairment
Practices	**Assessment**	No explicit policies
	Intervention	Nurses need training on alternative modes of communication and access to simple AAC devices Logical strategies discovered and implemented by nurses (e.g., attending to patient during communicative attempts, recognising non-verbal cues, using an agreed-upon yes/no indication system)
	Professionals	SLP, OT, nurses
	Resources	AAC
Reference		SLP Australia Position Paper, 2005
Design and data collection method		Reflection on current best practice
Sample		*N/A
Practices	**Assessment**	Voice, articulation, language assessment by SLP
	Intervention	Monitoring cuff pressures, cuff inflation/deflation (SLP, PT, nurse); use of speaking valves (SV) and/or talking tracheostomy tubes; communication options including AAC; phonation
	Professionals	MDT, SLP, ENT, nurses, PTs, OTs, dietician, neuropsychologist, respiratory doctor, ICU doctor
	Resources	Tracheostomy tubes, SV and AAC
Reference		MacBean et al., 2009
Design and data		Perceptual and instrumental comparison of speech produced with and without

collection method		SV
Sample		Mechanically ventilated patients
Practices	**Assessment**	NA
	Intervention	Use of Passy Muir speaking valve (PMV) in ventilated patients, with alterations to ventilator setting, such as PEEP to enhance speech output
	Professionals	SLP
	Resources and tools used	PMV
Reference		Clayton et al., 2010
Design and data collection method		Retrospective review of hospital databases and documentations of medical staff
Sample		Patients with burns
Practices	**Assessment**	Clinical perceptual voice assessment
	Intervention	*NA
	Professionals	SLP ENT
	Resources and tools used	*NA
Reference		De Mestral et al., 2011
Design and data collection method		Retrospective chart review and comparison between outcomes before and after introduction of MDT
Sample		*NA
Practices	**Assessment**	SLP assesses candidacy for SV and decannulation
	Intervention	MDT approach
	Professionals	General surgeon, general surgery resident, RT, SLP and clinical nurse specialist
	Resources and tools used	SV
Reference		Freeman-Sanderson et al., 2011
Design and data collection method		Audit: retrospective chart review in acute care
Sample		Patients in ICU and other clinical areas
Practices	**Assessment**	Initial assessment done by MDT; cuff deflation trials
	Intervention	SLP intervention to restore voicing/communication
	Professionals	SLP is the integral member; PTs and nurses
	Resources and tools used	SV, AAC, nonverbal means: mouthing and gestures
Reference		SLP Australia Guideline, 2013
Design and data collection method		Current best practice and evidence
Sample		*NA
Practices	**Assessment**	Evidence-based approach to assessment Guideline for AAC assessments

	Intervention	Evidence-based approach to management Guidelines for SV trials
	Professionals	SLP scope of practice includes working with PWTs An MDT approach provides optimal care
	Resources and tools used	The Speech Pathology Australia Clinical Guideline-Augmentative and Alternative Communication (AAC) (2012), SV or specialised tracheostomy tubes
Reference		Sutt et al., 2015
Design and data collection method		Retrospective pre-/post-observational study in acardiothoracic ICU
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	*NA
	Resources and tools used	In-line PMV
Canada		
Reference		Rose et al.,2015
Design and data collection method		Survey, professional perspective in various healthcare setups
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	Description of communication management based on protocols
	Professionals	SLP
	Resources and tools used	Alphabet, word, picture/writing boards, iPads, DynaVox communication devices and Lightwriters, SV including PMV, cuffless and fenestrated tubes
India		
Reference		Vandana & Suri, 2008
Design and data collection method		Descriptive study
Sample		Patients with burns
Practices	**Assessment**	*NA
	Intervention	Speech enhancement: voice, articulation and oro-motor therapy
	Professionals	SLP
	Resources and tools used	AAC: picture-word board; a lit communication board
Taiwan		
Reference		Wang et al., 2014
Design and data collection method		Analysis of national data from the Collaboration Centre of Health Information Application, insurance data from a medical institution and questionnaire survey to 80 medical personnel before and after an education programme
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	Over 50% of the medical personnel never referred any tracheostomised inpatients for speech therapy

	Resources and tools used	*NA
Turkey		
Reference		Gul & Karadag, 2010
Design and data collection method		Quality of life assessment form administered to patients in an ENT hospital
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	Data reported include laryngectomy rehabilitation (oesophageal speech and voice prosthesis), though the focus is on tracheostomy
	Professionals	*NA
	Resources and tools used	*NA
UK		
Reference		Woodrow, 2002
Design and data collection method		Evidence-based review of nursing care for patients with a temporary tracheostomy
Sample		*NA
Practices	**Assessment**	Assessment for intact cough and gag reflexes prior to the use of fenestrated tubes and SV
	Intervention	Cuff deflation followed by finger occlusion of tracheostomy, but with risk of infection
	Professionals	Nursing
	Resources and tools used	Communication methods used depend on individual preferences and skills: mouthing words, lip-reading, writing boards, pens and sign boards, speaking tube, SV and fenestrated tracheostomy tubes
Reference		Lewis &Oliver, 2005
Design and data collection method		Description of a special outreach programme and the formation of discharge guidelines passed on from critical care to the ward, with the aim of standardising tracheostomy management and improving efficiency in an acute care hospital
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	*NA
	Resources and tools used	*NA

Reference		Batty, 2009
Design and data collection method		Descriptive
Sample		ICU
Practices	**Assessment**	*NA
	Intervention	Simple modes of communication: e.g., writing, gestures, pictures; coded eye blinking may be unreliable, as it is often confused with reflexive blinking
	Professionals	SLP role defined
	Resources and tools used	*NA
Reference		NHS, 2012
Design and data collection method		Registered guideline for clinical nurses
Sample		*NA
Practices	**Assessment**	Referral to SLP after initial screening for detailed communication assessment
	Intervention	Guidelines to improve communication: cuff deflation, downsizing, SV, fenestrated tracheostomy, AAC
	Professionals	Nurse, SLP
	Resources and tools used	Picture boards, alphabet charts, lip reading, gestures and writing, magic slates, nurse call buzzer, fenestrated tracheostomy, SV including PMV
Reference		Dawson, 2014
Design and data collection method		Literature review
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	SV or intermittent finger occlusion, lip reading, AAC: alphabet, picture or writing boards and electronic communication tools such as iPads
	Professionals	SLP: main role, nurse in an MDT
	Resources and tools used	SV, alphabet, picture or writing boards, iPads
Reference		McGrath & Wallace, 2014
Design and data collection method		Review
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	RCSLT (2013) SLPs should offer equal access for communication and swallowing interventions. Anecdotal reports: practices vary, swallowing often prioritised
	Professionals	SLT role highlighted
	Resources and tools used	Fenestrated tracheostomy tubes, SV
Reference		McGrath et al., 2015
Design and data collection method		Descriptive study through case reports
Sample		Chronic Obstructive Pulmonary Disease (COPD), burns, neurological

Practices	**Assessment**	Therapy outcome measure for voice impairment scale (TOMS) Cuff deflation to facilitate voicing by SLP
	Intervention	New technique for communication management in PWTs: Above cuff vocalisation (ACV) – directing a retrograde flow of gas through the subglottic suctioning port to exit above the cuff . Innovative way to allow speech for fully ventilated patients.
	Professionals	SLP. Collaboration between global entities via the GTC, as well as that between the UK hospital and the Australian TRAMS
	Resources and tools used	TOMS, ACV (ACV)
USA		
Reference		Hauck, 1999
Design and data collection method		Descriptive overview in rehabilitation setting
Sample		Rehabilitation patients
Practices	**Assessment**	*NA
	Intervention	AAC: nonverbal means such as eye blinks, basic communication boards, handwriting and high-technology AAC Voice restoration: finger occlusion with infection control issues, electrolarynx, fenestrated tracheostomy tubes and SV
	Professionals	MDT: physician, SLP, nurse and RT
	Resources and tools used	AAC: low- and high-technology, electrolarynx, fenestrated tracheostomy tubes, SV
Reference		Happ et al., 2010
Design and data collection method		Descriptive study – two ICU cases
Sample		Trauma patients
Practices	**Assessment**	*NA
	Intervention	Computers, handheld tablets and smartphones to assist in communication.
	Professionals	*NA
	Resources and tools used	*NA
Reference		Tanner, 2006
Design and data collection method		Descriptive report
Sample		Head and neck malignancy
Practices	**Assessment**	Nurses identify communication problems
	Intervention	Nurses use SV
	Professionals	Nurses
	Resources and tools used	SV Education of nurses to improve services
Reference		Baumgartner, Bewyer,&Bruner, 2008
Design and data collection method		Descriptive study

Sample		ICU
Practices	**Assessment**	*NA
	Intervention	SV to enable communication
	Professionals	Collaboration between SLP and critical care nurse
	Resources and tools used	SV
Reference		Windhorst et al., 2009
Design and data collection method		A model for interdisciplinary decision making
Sample		Complex variety of diagnoses in rehabilitation hospital
Practices	**Assessment**	SLP: SV assessment prior to evaluating speech, voice, and swallowing. Assessment of ability to phonate without a SV. Protocol: Initial cuff deflation; placement of SV with SLP and RT, followed by capping. FEES done by SLP
	Intervention	SV evaluation by SLP with RT
	Professionals	SLP and RT Physician
	Resources and tools used	Flow chart for decision making about SV
Reference		Ball et al., 2010
Design and data collection method		Descriptive study with case reports
Sample		ALS
Practices	**Assessment**	AAC evaluation included a minimum of three other communication device options from various AAC manufacturers
	Intervention	AAC – high- and low-technology
	Professionals	SLP with over five years' experience with ALS and AAC
	Resources and tools used	Eye-gaze Response Interface Computer Aid (ERICA) with Type & Talk or LifeMate communication software
Reference		Grossbach, Stranberg, & Chlan (2010)
Design and data collection method		Descriptive: practices related to communication management
Sample		ICU patients on mechanical ventilation
Practices	**Assessment**	Communication screening and basic assessment conducted by nurse, referral to SLP for detailed assessment
	Intervention	Nurses provided with strategies to facilitate communication, including SV guidelines
	Professionals	Nurse, SLPs, RTs and physician
	Resources and tools used	SV, communication tool kit with basic supplies and a rating scale for respiratory distress, communication assessment tool, communication board, voice output aids, fenestrated tracheostomy tubes
Reference		Happ et al., 2010
Design and data collection method		Descriptive study of several cases. Espoused, observed and patient perspectives reported.

Sample		ICU patients
Practices	**Assessment**	SLP conducts basic assessment and offers preliminary advice on communication to the nurse Full SLP assessment follows
	Intervention	Communication care plan provided by SLP
	Professionals	Interdisciplinary care: SLP (main role), nurses, family members
	Resources and tools used	SV Low-technology AAC
Reference		O'Connor & White, 2010
Design and data collection method		Descriptive account of practice
Sample		Mechanically ventilated PWTs
Practices	**Assessment**	*NA
	Intervention	SV placed with a fully deflated cuff. For patients who are unable to wean from mechanical ventilation: 'in-line' SV or volume-compensation speech is used
	Professionals	*NA
	Resources and tools used	Regular and in-line SVs
Reference		Fisher et al., 2013
Design and data collection method		Prospective data extraction in respiratory acute care
Sample		*NA
Practices	**Assessment**	SLPs assess patients for SV tolerance
	Intervention	Following institutional guidelines, SV trials supervised by respiratory care and nursing staff
	Professionals	MDT: SLPs PTs, physicians, RTs and nurses
	Resources and tools used	SV
US, UK, Canada		
Reference		Lohmeier & Hoit, 2003
Design and data collection method		Survey to determine the nature of the communication challenges
Sample		*NA
Practices	**Assessment**	*NA
	Intervention	*NA
	Professionals	SLP plays an active role
	Resources and tools used	Electronic/computer system, sign language, gestures, SV and ventilator adjustments

*NA: Not addressed in the study

Section 2.4 outlines the inputs and processes that define swallowing and communication management in PWTs and details the outcomes to understand their effectiveness. This information was used to develop the conceptual framework and data collection tools in Chapters 3 and 4, respectively.

2.5 Inputs, Processes and Outcomes of Swallowing and Communication Management in PWTs

The description of practices related to swallowing and communication management in Manuscript 1 and the previous section has provided information on the inputs required for healthcare services in this regard. An MDT approach, with the involvement of physicians, ENT doctors, nurses, SLPs, dieticians, RTs and other rehabilitation professionals such as PTs, is evidently required. The review has also indicated the capital resources commonly used in these practices, such as speaking valves, cuff manometers, fenestrated tracheostomy tubes and AAC devices, as well as low-technology AAC (paper and pen), blue dye, instrumental assessment tools (FEES and VFSS), modified diets and food thickeners, vitals monitors, and basic cups and spoons for bedside swallow assessments. Table 2.4 summarises the material and human resources used for these practices in various contexts.

Many studies on swallowing and communication management in PWTs have described the outcomes of these practices. This information has provided insight into the investigations needed to understand the efficiency of practices in an understudied context. The literature reveals that the following findings are considered significant to this effect: length of stay in hospital (Batty, 2009) and in the ICU (Cetto et al., 2009), cannulation and decannulation times (Arora, Hettige, Ifeacho, &Narula, 2008; Cameron et al., 2009; Cetto et al., 2009), incidence of aspiration (Baumgartner, Bewyer, &Bruner, 2008), time to restore oral communication (Brown

et al., 2009; Goldsmith, 2000), cost (Brown et al., 2009; Frank, Mäder,& Sticher, 2007), speaking valve placement (De Mestrel et al., 2011), return to oral feeding (Ginnelly & Greenwood, 2016), patient satisfaction, improved wellbeing and quality of life (QOL) (Batty, 2009; Goldsmith, 2000; Grossbach et al., 2010; Morris, Bedon, McIntosh & Whitmer, 2015) are some of the frequent measures for the associated practices.

Section 2.5 details the methodologies used in various contexts and highlights the perspectives from which these have been reported. According to Pillay's, Kathard's and Samuel's (1997) curriculum of practic illustrated in Figure 2.2, swallowing and communication management in PWTs has been noted from the espoused viewpoints of those involved in the practice via interviews of patients and professionals involved in their care; the actual perspectives have been obtained through audits, prospective observations and case studies. In addition, some studies have conducted retrospective chart reviews to describe procedures from a documented or official stance.

2.6 Methods Used to Describe Practices Related to Swallowing and Communication in PWTs

Data on the methods of swallowing and communication management in PWTs were extracted to provide insight into the vital perspectives of practice and how to study these processes. Studies used interviews (Foster, 2010; Sherlock, Wilson, & Exle, 2009) and surveys (Lohmeier & Hoit, 2003) of patients to assess satisfaction and QOL from their point of view. Several studies also employed interviews (Hemsley et al., 2001; Karlsson & Bergbom, 2015) and surveys (Garner, Shoemaker-Moyle, & Franzese, 2007; Mace, Patel, & Mainwaring, 2006; Snyder & Ubben, 2003; Wang et al., 2014; Ward et al., 2008) of associated professionals to describe the practices from a specialised perspective. They generally sampled nurses, SLPs,

rehabilitation staff (PTs), dieticians and doctors, including ENT physicians and anaesthesiologists.

Apart from interviews, another common method of data extraction is the use of retrospective chart reviews for the official or reported perspectives (Clayton et al., 2010; Davis & Stanton, 2004; De Mestral et al, 2011; Pryor et al., 2016; Sutt et al., 2015). The actual viewpoint or a real-time explanation of practice has been achieved through audits (Hunt & McGowan, 2005), descriptive case studies (Happ et al., 2010; McGrath et al., 2016) and prospective observational studies (Cetto et al., 2011; Warnecke et al., 2014). Considering the approaches described above, I chose a combination of interviews, chart reviews and practice observation to discuss the procedures in Sri Lanka, as detailed in Chapter 4.

2.7 Chapter Summary

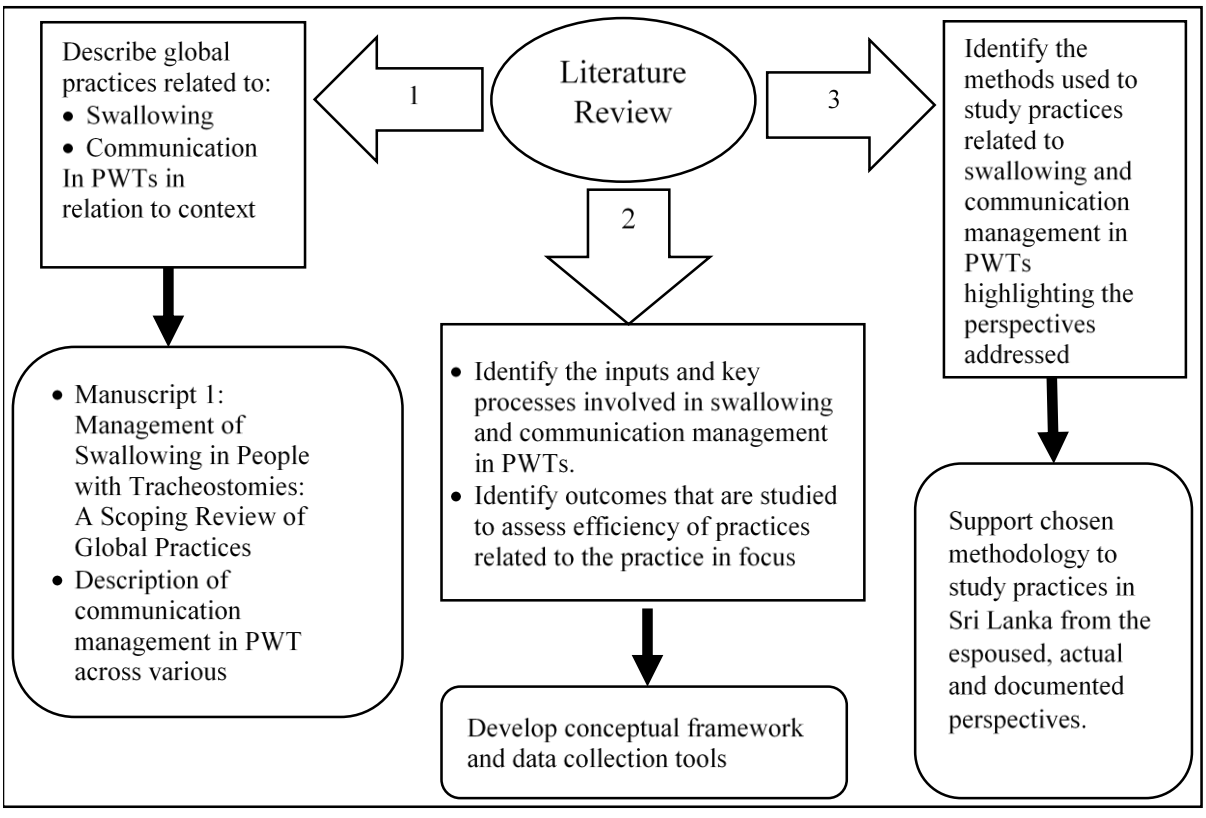
In this chapter, I present a comprehensive review of literature on swallowing and communication management in PWTs worldwide. I have analysed the findings and reported them by the country or context in which each study was conducted. This allows an appreciation for the influence of the inherent healthcare systems, in both majority and minority worlds, on the practice in question. While most of the studies are from the later region, the few from majority countries have indicated that care of these patients is an area of concern, with attempts being made to ensure that the PWTs enjoy an acceptable quality of life through the available resources.

The review highlights the differences between countries in terms of policy documents and guidelines for patient management, professionals and their roles, resources and methods used to assess and intervene for both swallowing and communication difficulties in this patient population. It also identifies methods used across the articles considered and concludes that patient and practitioner viewpoints, the reported or documented perspective and descriptions of

practices as they happen in real time have been used to discuss swallowing and communication in PWTs.

I have used the findings related to the resources required for swallowing and communication management in PWTs, the professionals involved in their care and the reported outcomes of these practices to formulate questions and guide the development of data collection tools in Sri Lanka. I have also reviewed the methodologies utilised to study these practices and selected interviews, observations and chart reviews for the investigation. Figure 2.5 summarises the findings from the literature and connects them to the rest of the thesis.

Figure 2.5. Summary of literature review



Chapter 3

Conceptual Framework

3.1 Introduction

The overarching aim of my thesis is to study the efficiency of the current practices available for swallowing and communication management in PWTs in Sri Lanka. In the last chapter, I described – using the literature review – the processes involved in various countries around the world. Through this review, I have identified the inputs or resources required and recognised the outcomes investigated to establish their efficiency. In this chapter, I discuss how I used this information and a combination of previously published frameworks to develop a conceptual model for investigating the efficiency of Sri Lankan healthcare practices – a previously unexplored context. As I detail later in Chapters 4, 5 and 6, this framework has enabled me to theoretically position my study, make methodological choices and analyse the data obtained.

3.2 Development of the Conceptual Framework

Several researchers have adapted or proposed frameworks to conceptualise healthcare practices and assess aspects of medical sector performance. Since I aim to study the practice efficiency in Sri Lanka, an under-investigated setting, I was in search of a framework that has such components and that addresses the influence of the macro context on the practice in question. Palmer and Toggerson (1999) have described healthcare efficiency as the relationship between resource inputs (costs in the form of labour, capital, or equipment) and either intermediate outputs (such as number of individuals treated and waiting time) or final health outcomes (QALYs: quality-adjusted life years – e.g., lives saved, years gained). It also relates to disability-adjusted life years (DALYS) or non-fatal health outcomes (e.g., years of life lost due

to disability)(Gold, Stevenson & Fryback, 2002; World Health Organization, 2013b). Handler et al. (2001) have proposed a model to study public health system performance. As illustrated in Figure 3.1, it includes components of efficiency and addresses the influence of the macro context, which I have adapted for developing the conceptual framework of this study.

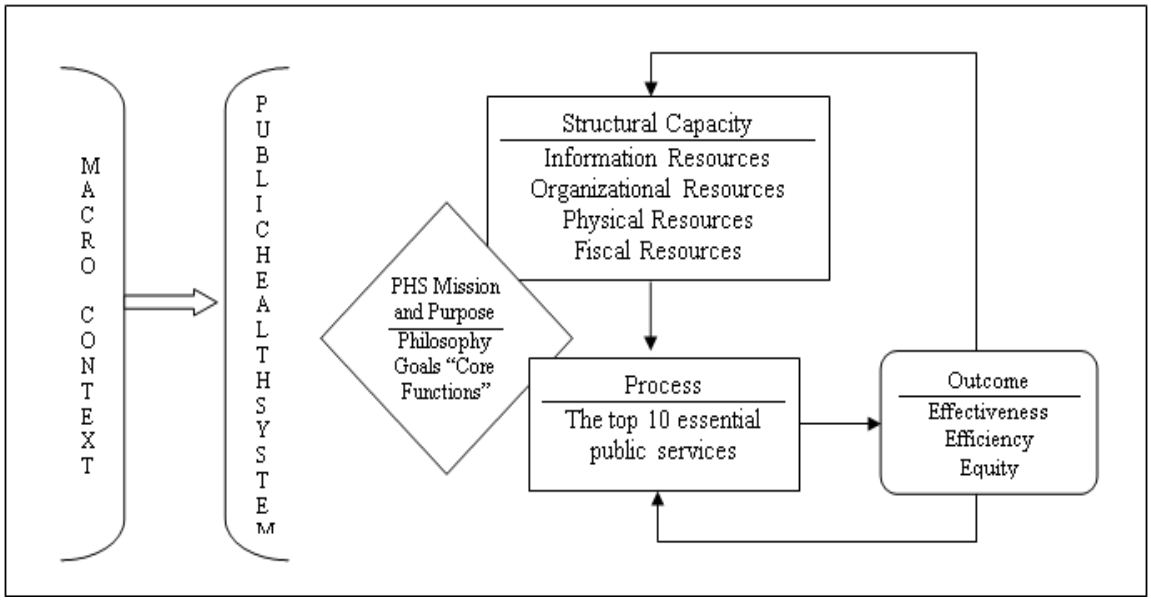


Figure 3.1. Conceptual framework of the public health system (PHS; Handler, Issel and Turnock et al. 2001)

The literature review in Chapter 2 highlighted the methods previously used to study healthcare practices related to swallowing and communication management in PWTs. As per the curriculum of practice framework proposed by Pillay et al. (1997) illustrated in Figure 2.2 (Chapter 2), these approaches can be classified as those addressing the espoused or reported (interviews and surveys), observed or actual (field observation and case studies) and official or documented perspectives (chart reviews). Since I want to provide a comprehensive understanding of health practices in Sri Lanka, I adopted the lenses of evaluation from the curriculum of practice and incorporated it into the conceptual framework of the study. This formed the theoretical basis for the chosen methodology in Chapter 4, where method triangulation provided a multi-perspective view of the relevant healthcare practices.

While I acknowledge that several different concepts were used to develop the conceptual framework of this study, this was necessary to help position the practice; it was important to draw specific aspects from all the chosen models to clarify the investigation. Figure 3.2 summarises the key ideas.

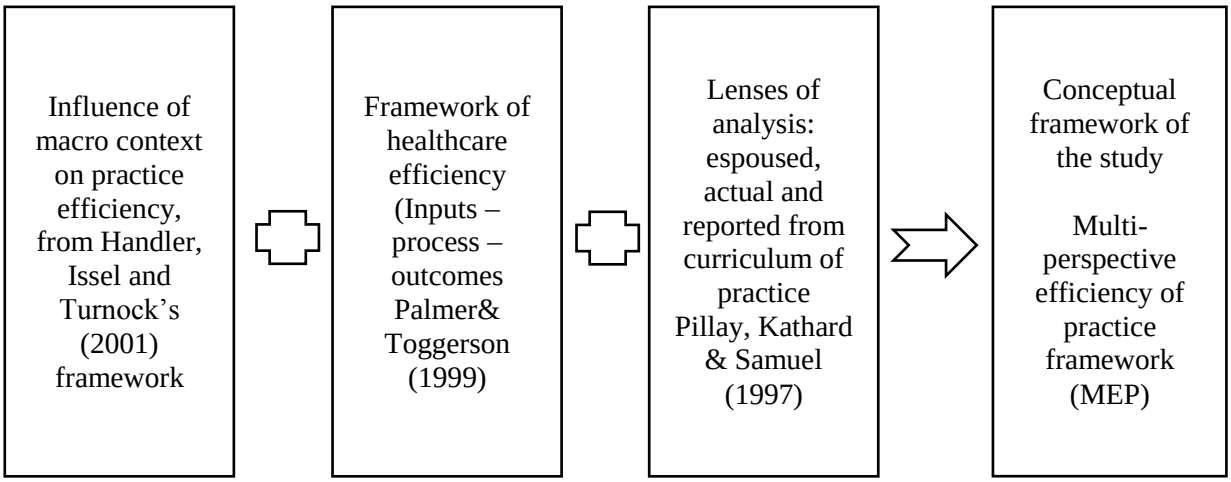


Figure 3.2. Summary of the key concepts used to develop the conceptual framework of the study

I refer to the outcome from the amalgamation of the framework components described above (Handler et al., 2001; Pillay et al., 1997) as the multi-perspective efficiency of practice framework (MEP). This is the conceptual model of the present study. As mentioned, it provides a theoretical and analytical basis for the chosen methodology and interpretation of the results. In the next section, I present this framework and explain each component in more detail.

3.3 The Multi-Perspective Efficiency of Practice Framework

The conceptual framework of this study, the MEP (Figure 3.3), is a multi-dimensional model designed to study practice efficiency. The four dimensions involved are: (1) efficiency framework, (2) macro-context, (3) lenses of analysis and (4) critical appraisal; they are detailed in the following subsections. The first three dimensions have been taken from previous sources, and the fourth is an additional component included for the purpose of this study. Based on my

aims, I chose an extra component to critically analyse the practices in Sri Lanka with respect to the global processes reported in literature.

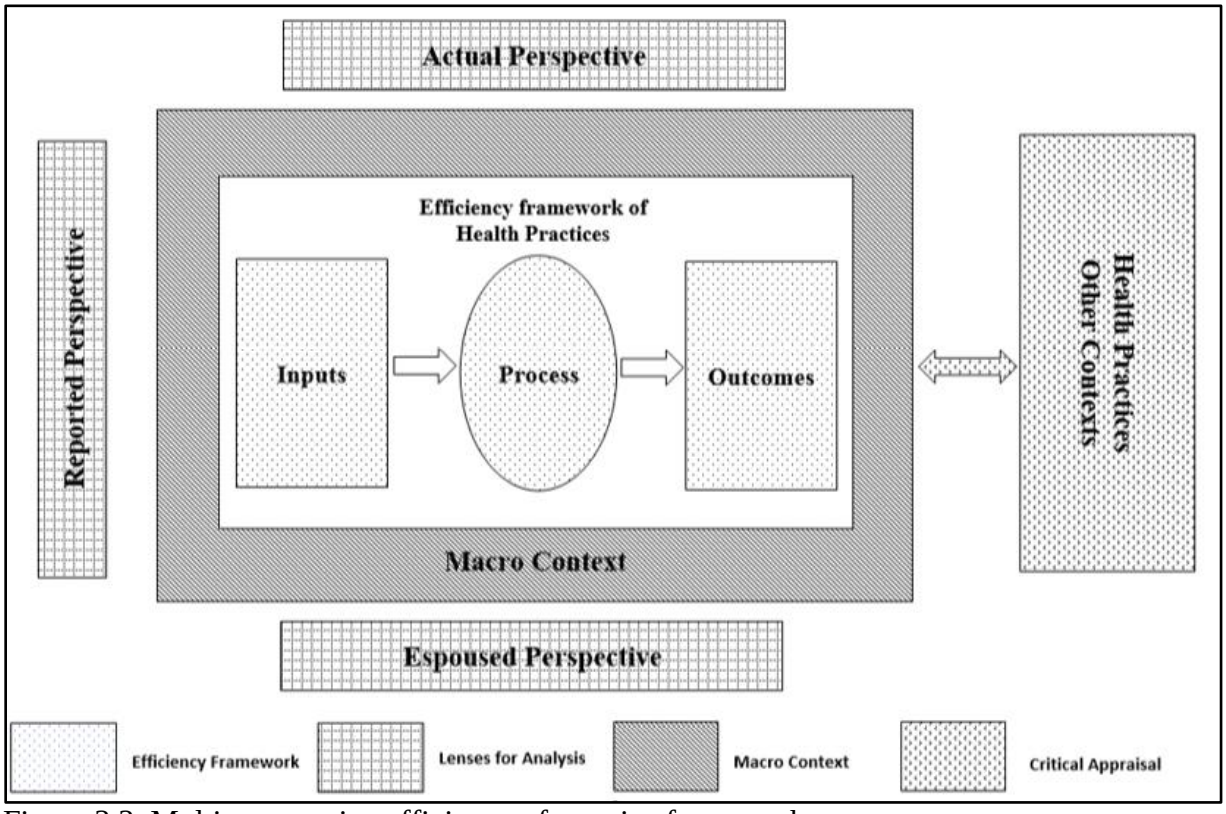


Figure 3.3. Multi-perspective efficiency of practice framework

3.3.1 The efficiency framework

Efficiency, efficacy and effectiveness are dimensions that represent the main taxonomy of organisational performance (Hayajneh, 2014), with the efficiency of healthcare practices in a majority world country as the primary focus of this study. As defined above and in Chapter 1, this refers to the relationship between inputs into the medical practice and the resulting outcomes. This component of the framework is illustrated in Figure 3.4. It is useful to contrast efficiency with efficacy and effectiveness: while the first term refers to how well resources are used to achieve the desired results (Haycox & Noble, 2009),the second considers issues related

to project completion, goal achievement and deadlines(Pinto & Carmona, 2014), and the third describes the quality and level of inputs and outputs as they occur (Pinto & Carmona, 2014).

Figure 3.4. Efficiency in healthcare

The measurement of efficiency has been a widely researched area in recent years (Cromwell et al., 2011), and it is becoming increasingly evident that cost alone does not suffice in understanding this concept. McGlynn et al. (2008) and Hussey et al. (2009) have proposed a typology for it after reviewing all the published measures. This consists of three tiers: (Schuster et al., 1998) perspective (Who is evaluating the efficiency of what entity and why?), inputs (resources used to produce outputs) and outputs (type of product evaluated). Hussey et al. (2009) have highlighted key issues in the existing efficiency measures and noted that outputs vary depending on several factors, such as clinical presentation of patient, the service provider and geographical area (Fiscella et al., 2000), and thus may not be comparable, particularly in quality (Newhouse, 1994). Efficiency measurement is therefore affected by the methods used and depends on the quality of the outputs assessed (Timbie & Normand, 2007).

The Assessment and Qualifications Alliance (AQA Alliance, 2007), a syndicate of physician professional groups, insurance plans and others, have coined two terms to define efficiency measures based on the inclusion of a quality metric (‘efficiency of care’) and the exclusion thereof (‘cost of care’). The present study has used a qualitative approach to report experiential data and highlighted the perspectives of those involved in the practice: the PWT, their unpaid caregivers and the professionals who provide the service.

The key components affecting efficiency in this study are the macro-context or the healthcare setting examined, the practice examined, the inputs and the outcomes of significance to all parties involved. Medical practices related to the management of swallowing and communication for PWTs in a minority world context, specifically Sri Lanka, are the clinical focus of this study. The literature review in Chapter 2 provided an understanding of the common inputs required for the processes that define these practices, and the results that are studied to understand their efficiency, as summarised in Table 3.1.

Table3.1. Inputs, processes and outcomes related to swallowing and communication management in PWTs derived from literature

Inputs	Fiscal inputs (e.g., cost of services), human resources (e.g., MDT teams), capital resources (e.g., speaking valve, modified diets), perceptions (professional and patient)
Processes	Swallowing assessments: clinical swallow evaluation, cuff deflation trials, blue dye, instrumental tests (e.g., VFSS, FEES). Swallow intervention: diet modification, postural changes, use of speaking valve, swallow maneuverers
	Communication assessment: cuff deflation and speaking valve trials Communication Intervention: logical strategies, AAC, speaking valve, fenestrated tubes
Outcomes	Health/clinical (e.g., time to decannulation, incidence of aspiration pneumonia, time to commence oral feeding and verbal communication), organisational (e.g., length of stay in ICU or hospital and savings in this regard), satisfaction (e.g., improved patient satisfaction and QOL)

Having established the components intrinsic to practice, I next describe the extraneous macrofactors that influence efficiency.

3.3.2 The Macro context

There are well-established health inequalities within and between countries (Beckfield, Olafsdottir,& Bakhtiari, 2013). Medical systems and practices in the majority world (Marsh et al., 2009) are known to have more limitations than those in the minority world (Marsh et al., 2009). In the former region, healthcare is affected by economic and geopolitical constraints, transportation and geographic barriers, a limited clinical workforce, infrastructural challenges

and poor reporting systems (Robertson et al., 2009). In addition, empirical research on medical practices in these countries is scarce (Langer, Díaz-Olavarrieta, Berdichevsky,& Villar, 2004).

The macro context refers to societal phenomena – such as political and economic forces – that influence health practices in numerous ways. This has been highlighted by Handler et al., (2001), who have described its impact on the capacity of the practice (e.g., imposing limitation on fiscal and/or human resources), processes (e.g., incorporation of technology to improve service efficacy) and outcomes (e.g., the significance of health-related results depends on social values and needs at any point in time). Thus, micro context can be defined as the immediate, evident features of practice within a healthcare organisation; these are influenced by macro factors, as illustrated in Figure 3.5.

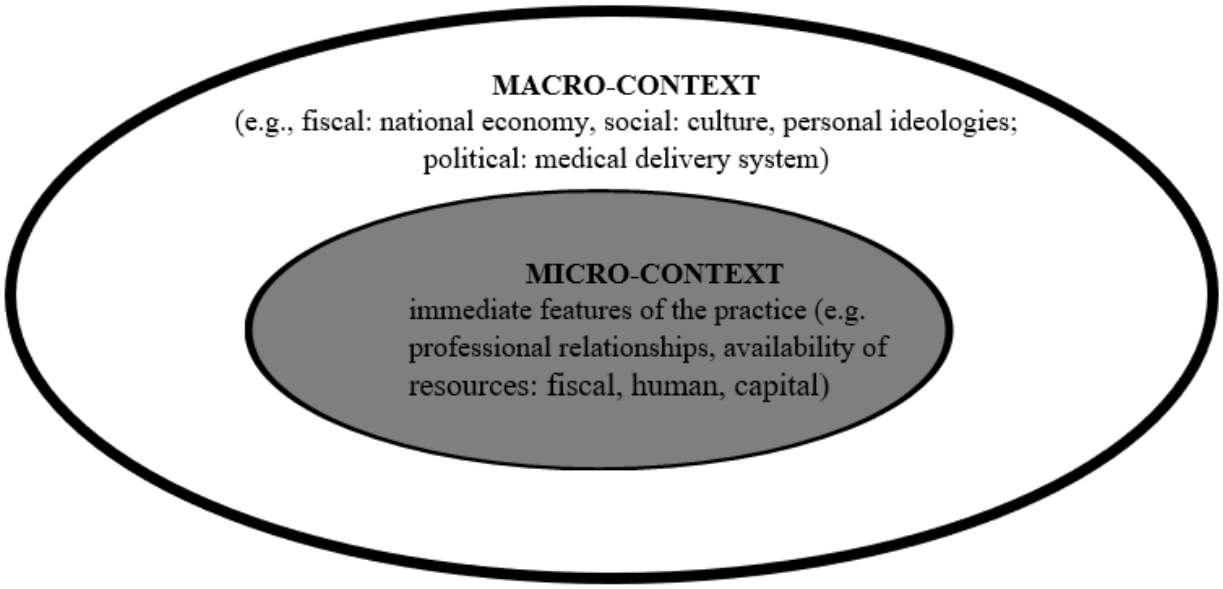


Figure 3.5. Relationship of the macro-context to the micro-context

The relevant dichotomy in macro contexts is that of the majority versus the minority world. The former, as its name suggests, refers to most developing countries and thereby more than half of the global population. Research indicates that most theories on health practices,

especially those pertaining to disability and rehabilitation, have centred upon wealthy minority world contexts, such as the US, the UK and Australasia (Barnes, 2009). Applying these theories to the majority world would result in complexities (Miles, 2006) due to the differences in medical systems and difficulties of generalising efficiency measures across such contexts, which should be done with utmost caution. To further elaborate on these dissimilarities, wealthier nations have better health and support systems, resulting in greater life expectancies and higher chances of impairments later in life. In addition, Barnes (2009) has explained that in the majority world, the burden of disability (DALYs) on individuals may not be as pronounced as in minority contexts, where technological advances increase the impact of a disability on life. For example, a dyslexic individual may have more difficulties in technologically advanced societies, but fewer problems in a rural, majority world setting.

In the present study, the influence of the Sri Lankan health system (macro context) on swallowing and communication management practices for PWTs is investigated. Data collection tools (Chapter 4) are developed to explore the influence that macro features within the country's medical system have on the practice efficiency in hospitals. Sri Lanka has been known to provide some of the highest-quality care in South Asia at lower costs than most other countries (Fernando, 2016). Domestically, both the public and private sectors provide medical services: the former accounts for 95% of inpatient care and 50% of outpatient care, while the latter serves the remaining 5% and 50%, respectively (Govindaraj, Navaratne, Cavagnero,& Seshadri, 2014).

Sri Lanka has few hospitals that specialise in rehabilitation (Chappell & Wirz, 2003), and although there is an increasing number of facilities for the disabled, these continue to face limitations in resources (Higashida, 2014). Additionally, studies on disability in the country are limited, with large research gaps in several dimensions of rehabilitation practices yet to be

addressed (Peiris-John, Attanayake, Daskon, Wickremasinghe,& Ameratunga, 2014). One such area relates to processes for swallowing (Priyadarshani & Ratnayake, 2014) and communication management (Peiris-John et al., 2014), particularly in special patient populations such as PWTs. Thus, the present study aims to explore a macro setting, which is an under-researched area, and thereby provide an appropriate platform to address the efficiency of health practices in a majority world context.

3.3.3 Lenses to view practices through

The first two dimensions of the MEP framework, the practice efficiency and the macro context that influences it, have been described in detail. The third relates to the methods that can be used to view practice, adapted from the curriculum of practice developed by Pillay et al. (1997). The framework indicates the health practice components and the perspectives from which they are viewed. It was initially designed to study services provided by health practitioners to Black, African first-language speakers in South Africa. The curriculum observes practice through three lenses: the official (documented), espoused (opinion) and actual (observed) perspectives. The objective of incorporating this component into the MEP framework was to ensure a comprehensive account of the practice efficiency from the viewpoints of all those involved, and to validate these findings using data from observations and written reports. The present study (Chapter 4) therefore uses chart reviews and interviews to obtain espoused perspectives, chart reviews for official or documented data, and observations for information related to the actual standpoint (practice as it happens) within the Sri Lankan healthcare context.

3.3.4 Dialogue between practices

The study findings provide a clear, in-depth and multi-perspective understanding of the practices related to swallowing and communication for PWTs in Sri Lanka, a majority world

context. I propose a last step via the MEP, which is the fourth dimension of the framework (depicted by the double-headed arrow in Figure 3.1). It involves a critical analysis of global practices (where published research is mainly from minority world countries) against those in Sri Lanka, thereby resulting in a dialogue across regions.

A comparison of only the inputs (labour and resources) or outcomes (DALYs) between the two contexts is inappropriate, considering the obvious variations in these aspects. The double arrow in the framework, however, represents a more in-depth analysis of the processes involved in swallowing and communication management for PWTs in Sri Lanka compared to published global practices. This includes a comprehensive examination of how factors such as context, beliefs, power and perceptions (including political ideologies and organisational cultures) influence practice efficiency.

Disparities in medical services across contexts, influenced by socioeconomic factors, have been extensively reported (Betancourt, Green, Carrillo, & Ananeh-Firempong, 2003; Jackson & Gracia, 2014). This framework proposes a central argument that such gaps between the majority and minority worlds may not solely be caused by variation in tangible aspects such as resource availability, professional skills or differences in financial profiling, but rather rooted more deeply in social, cultural and historical ideologies (Anderson et al., 2009; Betancourt et al., 2003). This analysis may have one of two possible outcomes; an unexplored context may well present the world with better ways to enhance efficiency of practice patterns, or perhaps Sri Lanka can alter existing practices based on published research to enable more efficient functioning. Both approaches may prove to be effective.

3.4 Summary and conclusion

In this chapter, I have described the conceptual model that serves as the roadmap for this thesis. The MEP, a new multi-dimensional practice efficiency framework, has been developed through consolidating earlier theories that address healthcare performance and an in-depth literature review of global practices associated with swallowing and communication management in PWTs. Hence, this chapter serves several purposes: it defines practice components and explains their influence on efficiency, summarises the parameters that best describe the relevant practices, provides an understanding of possible methods of obtaining a multi-perspective view of the processes and ultimately constitutes an analytical framework for the study. The next chapter clarifies the link between the concepts outlined in the framework and the chosen methodology, as well as its influence on the data collection tools.

Chapter 4

Methodology

4.1Introduction

This study aims to explore practices related to swallowing and communication management in PWTsin Sri Lanka, a majority world country. The chapter is presented with respect to the three study objectives; the associated methods appear in Table 4.1.

Table 0.1. Study objectives and methods

Objective		Method
1	To describe the global best practices associated with swallowing and communication management for PWTs by reviewing the literature.	Review of literature
2	To understand the practices pertaining to swallowing and communication management in people with tracheostomies in Sri Lanka.	a. Practice observations & descriptions, b. Chart review c. Individual Interviews d. Focus groups
3	To critically appraise the practices related to swallowing and communication management in PWTs in majority world contexts compared to the minority world.	Critical Appraisal

In this chapter, I present the research design, and the data collection methods and analysis procedures deemed most appropriate to address the objectives of the study. I also discuss the theoretical fundaments of the chosen methodologyand it to the conceptual framework elaborated in the preceding chapter.

I have introduced myself in Chapter1 as an in-betweener (neither entirely an outsider nor an insider) (McNess et al., 2015) to the Sri Lankan context, and in this position, I faced significant challenges in accessing study sites and conducting the study. My lack of insider

connections, due to my absence from of Sri Lanka for many years, resulted in difficulties securing the trust of hospitals and access to the hospitals.Obtaining gatekeeper permission from the hospitals, especially in the private sector, was most challenging, since despite lengthy discussions with hospital managements, many did not provide permission to conduct the study in their facility.However, my unique position enabled me to adapt a pragmatic approach to the research context, overcoming some of the disadvantages of outsider and insider research—I could maintain objectivity, from an outsider's perspective, while comprehending the values, culture and language of the study participants, as an insider (Kerstetter, 2012).

4.1 Research design

To address the study objectives, I used a qualitative exploratory study design, which entailed collecting qualitative data from various sources using multiple methods. The reason I choose a qualitative approach is explained below, by contrasting the qualitative and quantitative research, followed by a description of the research design, methods and techniques used in this study.

4.1.1 Qualitative vs quantitative research

Researchers need to decide what type of data they want to collect, considering which information is most appropriate for the questions they want to answer and the aim they want to achieve. In this study, I was looking to explore theease of swallowing and communication in PWTs in Sri Lanka, through a description of the practice from multiple perspectives from all involved in the practice. The data obtained was purely qualitative, and as described below, qualitative research was most appropriate,since the main characteristic of this method is its appropriateness for small samples, when the outcomes are not measurable and quantifiable (Collis & Hussey, 2003). Quantitative research is used to quantify a problem by way of

generating numerical data and is used to quantify attitudes, opinions, behaviours, and other defined variables from a large sample population.Qualitative research, on the other hand, refers primarily to exploratory research, and is used to gain an insight into a problem by revealing opinions and motivations. It is considered a deeper exploration of a problem and typically involves smaller samples (Ormrod & Leedy, 2005).

There are four fundamental features of the research process: (a) epistemology (theory of knowledge), (b) theoretical perspectives, (c) methodology and (d) methods that differentiate quantitative and qualitative approaches (Crotty, 1998). Quantitative research assumes phenomena to be static in nature and is based on objectivist epistemology, thereby seeking to develop explanatory universal laws governing social behaviours. It measures and analyses causal relationships between isolated variables based on predetermined theories. A quantitative approach views social phenomenon as objective reality, independent of the subjects being studied, and requires researchers to distance themselves from that which is being studied. Qualitative research, however, is informed by a constructivist epistemology, and seeks to understand what social experiences mean and how they are created. Constructive epistemology considers knowledge and reality to be socially constructed, so qualitative paradigms consider phenomena to be dynamic in nature. It takes on a holistic, flexible, descriptive and contextual approach to describe occurrences from the view point of those involved. Qualitative paradigms therefore require the researcher to be closely involved with the processes and subjects under studied (Patton, 2002a; Yilmaz, 2013). The differences in quantitative and qualitative research designs are summarised in Table 4.2.

Table 0.2. Comparison of quantitative and quantitative research

Quantitative methodology	Qualitative methodology
Purpose	
Generalisability Prediction Causal explanation	Contextualisation Interpretation Understanding participants' perspectives
Approach	
Begins with hypotheses and theories Manipulation and control Uses formal, structured instruments Experimentation and intervention Deductive Component analysis Seeks consensus, the norm Reduces data to numerical indices Abstract language in write up	Ends with hypothesis Emergence and portrayal Researcher as the instrument Naturalistic or non-intervention Inductive Searches for patterns Seeks pluralism, complexity May make minor use of numerical indices Descriptive write up
Researcher's role	
Detachment and impartiality Objective portrayal Etic (outsider's point of view)	Personal involvement and partiality Empathic understanding Emic (insider's point of view)

Note. Source: Adapted from Yilmaz, 2013

4.1.2 Research design for present study

Qualitative research is an umbrella term covering an array of interpretative techniques that seek to describe, decode, translate and explain the meaning of certain naturally occurring phenomena in the social world(Al-Busaidi, 2008). Generally, qualitative data is difficult to measure, but gives valuable information about perspectives and attitudes, which may not be accessible though quantitative data (Rubin & Rubin, 2011). The present study adopts a qualitative exploratory research design, as the research objectives are largely exploratory in nature and could not be addressed by applying quantitative methods. The objectives of the study required me to gain insight into practices in a context on which little literature exists. I needed to look for in-depth information on practices managing for swallowing and communication in PWTs in Sri Lanka from those involved in the practice, and this could not be obtained from a

standardised questionnaire with predetermined answer categories but required information on personal experiences from those involved in the practice.

Qualitative exploratory research involves fieldwork that is done without predetermined constructs, and is generally not intended to provide conclusive evidence, but instead to determine the nature and better understanding of a prevailing situation (Stebbins, 2001). Brown (2006) has described exploratory research as a qualitative research approach, generally conducted when there are few or no earlier studies addressing the question in focus, or when problems are in a preliminary stage of investigation. In the present study, I intended to address swallowing and communication management in PWTs in Sri Lanka, a majority world country, and as concluded in Chapter2, research related to such practices in these contexts, especially in Sri Lanka, is limited, with qualitative exploratory research proving to be the best choice.

4.1.3 Research method and technique

Qualitative research methods can be categorised into five groups: ethnography, narrative, phenomenology, grounded theory and case study (Creswell& Poth, 2017). The method applied in the present study is rooted in phenomenology from the field of sociology, and ethnography from the field of anthropology. In a phenomenological study, the researcher explores the very nature of the phenomena of interest (in this study, practices related to swallowing and communication in PWTs) by learning about the lived experience of the people involved, usually through interviews and sometimes through document reviews (Creswell& Poth, 2017).Phenomenology thus focusses on the subjective and reported perspectives of how people experience practices, and analyses what these practices mean to them (Patton, 2002b; Creswell& Poth, 2017).In ethnography, researchers immerse themselves in the context being studied to obtain first-hand

experience of the phenomena or practices being investigated, usually as observers (Creswell& Poth, 2017). Thus, ethnography focusses on the events as they happen.

Multi-perspective efficiency of practice (MEP), the conceptual framework of the study described in Chapter 3 (Figure 3.2), connects well with the theoretical basis of the chosen methodology, as it directs the researcher to address multiple perspectives (as espoused, observed and reported) to obtain a holistic view of the practice. I thus utilised a triangulation technique (Kwok, 2012), on which multiple qualitative methods were used to provide an in-depth understanding of swallowing and communication management in PWTs from various perspectives. Focus groups and individual interviews were used to establish the perspectives espoused by all groups involved in the practice (patients, their unpaid caregivers [UNCGs] and the professionals), followed by planned observations that shed light on the actual perspective, with a description of practice as it happens, and finally, the reported perspective, which was addressed through patient chart reviews.

4.2 Data collection

In this section, I describe the study's setting, sampling strategies, participant selection and the data collection methods.

4.2.1 Study setting

Context influences the results of all research, but it is particularly important in qualitative research (Russel and Gregory, 2003).This section provides a detailed description of the macro-context, namely Sri Lanka's health sector and a portraiture of the study sites.

Sri Lanka is an island on the Indian subcontinent, with a population of approximately 20 million over an area of 62,702 km^2. The country's Ministry of Health (MOH) has an extensive network of government hospitals that provide free (or nearly free) medical services to

the entire population. These hospitals are structured hierarchically, with teaching and specialist hospitals at the top, followed by provincial and district facilities that refer patients to the specialist hospitals from across the island (Rannan-Eliya et al., 2015). Private hospitals are concentrated mainly in urban areas, and account for around 4% of inpatient admissions (Amarasinghe, De Alwis, Saleem, Rannan-Eliya, & Dalpatadu, 2015). The private sector focussesmainly on curative services and dependson the public sector for its supply of human resources (Govindaraj et al., 2014). Private hospitals are almost all for-profit ventures (Rannan-Eliya et al., 2015), and because out-of-pocket spending for health is the most common to obtain healthcare in Sri Lanka (Perera, Gunatilleke,& Bird, 2007), private health care is accessed predominantly by affluent and high-income groups, whereas the government sector hospitalis populated mostly by middle- and low-income socioeconomic groups (Amarasingheet al., 2015).

Since the Sri Lankan health system has two main types of health care institutions (government and private sector hospitals), I chose study sites representing each sector so as to ensure rich data. Given budget constraints, studying a nationally representative sample of hospital sites from various regions in Sri Lanka was not feasible, and the study was therefore restricted to data collection in Colombo City, the commercial capital of Sri Lanka and the hub of healthcare in the country (Rannan-Eliya et al., 2015), where most of the private sector facilities and the specialised teaching public sector hospitals are located (Rannan-Eliya et al., 2015).

The two hospitals I chose for the study are the largest and regarded as specialised healthcare providers in their respective sectors, and they were therefore considered a representation of organisations typifyingsome of the best practices within the Sri Lankan health sector. I have purposely restricted the description of the hospitals to prevent identification of the participating institutions,and any further description would lead to speculation and identification

of the setting, particularly by a local audience and contradictthe ethical guidelines and the informed consent I obtained from the study participants. The government hospital contains 3,000 beds, 81 wards, 18 dedicated intensive care units (ICUs), 21 operating theatres and more than 7,000 employees, and it offers a range of services, including neurology;ear, nose and throat (ENT) care; surgery;physiotherapy;occupational therapy;speech therapy; and medical nutrition for both in and out patients. The private sector hospital that consented to participate in the study was established in the mid 1980s and has a patient capacity of 400 beds. The hospital offers a wide range of health care services, including medical and surgical ICUs and cardiac, ENT and therapy services, such as speech therapy for out and inpatients. Most health care practitioners providing these services work across facilities, and as in other private hospitals in Sri Lanka, the majority of private practitioners are doctors in the public sector (Central Bank of Sri Lanka, 2012).

4.2.2 Sampling strategy and procedure

A sample is a subset of a population, selected to be representative of that population (Dawson-Saunders & Trapp, 1990). The process of selecting a sample for a study depends on the research aims and the study's design and methodology (Marshall, 1996). Probability sampling is the goal standard of sampling techniques, where everyone in the population has an equal chance of being selected in the study, ensuring generalisability of the results (Acharya, Prakash, Saxena,& Nigam, 2013). This type of sampling is good to answer 'what' questions in quantitative research, but not 'why' and 'how' questions, which are addressed by qualitative research (Marshal, 1996).

Qualitative sampling is important to ensure the transferability of findings (i.e. the degree to which results can be transferred to other contexts) and requires a flexible and iterative process.

It permits small sample sizes but requires them to be investigated in great depth or detail. One such qualitative sampling method is purposive sampling, which involves a strategic and deliberate collection of subjects who could provide rich information (Patton, 2002b). Purposive sampling is a form of 'focussed' sampling and is the most appropriate method when research aims to understand social processes and generate theory (Arber, 2001), as is the case in the present study, where I aimed to explore health care practices in a majority world context.

The sampling procedure was restricted by four factors: (a) limited time frame, (b) budget constraints, (c) geographic limitations, and (d) limited access to professionals from all departments. The study was carried out over a period of one month,because I was not based in Sri Lanka and owing to budget restrictions imposed by the fact that I was self-funding the research. The hospitals chosen for the study, as described above, were both based in ColomboCity. After receiving gatekeeper permission, the main point of contact in each hospital was in the ENT ward in the government facility, and the medical intensive care unit (MICU) in the private hospital, the focus groups for the professionals being attended only by the ENT physicians, in the government hospital, and the MICU doctors, in the in the private hospital.

I accessed the study population through gatekeepers in each hospital, namely the head of ENT in the government hospital and anICU physician in the private hospital. The target population from which the study sample was drawn included PWTs, their UNCGs (e.g. family members) and professionals (e.g. doctors, nurses, therapists, or dieticians) from the two chosen hospitals. I used case sampling, a purposeful sampling strategy) to identify the PWTs who were interviewed for the study, where 'Typical cases are selected 'with the cooperation of key informants or using 'statistical data… to identify "average-like" cases'. When employing typical

case sampling, it is crucial ‘to attempt to get broad consensus about which cases are typical–and what criteria are being used to define typicality’ (Patton, 2002c, p. 236).

- *People with tracheostomies:* I chose the PWTs meeting certain inclusion criteria: These participants had to be 18 years or older, have intactcognitive skills and have been tracheostomised for more than a period of two weeks (ensuring adequate experience with being tracheostomised). I determined their cognitive skills by administering the Rancho Los Amigos Scale (Appendix 1), and I chose those PWTs reaching levels7–8 on the scale, to be interviewed. I also spent one day with each of these PWTs to observe how their swallowing and communication was being managed. During this time, I also reviewed their charts and extracted reported data regarding these practices. Five PWTs fulfilled this criteria in the government sector, but no PWTs with the above criteria were admitted in the private hospital during the data collection period of one month. However, I recruited two PWTs in the private sector with low levels of alertness for observation and document review; but they could not take part in the interviews.
- *The UNCGs of PWTs:*In the government hospital, I selected five UNCGs related to the PWTs recruited for the study, and they were all above the age of 18. In the private hospital, two UNCGs over 18, family members of PWTs with poor cognitive skills (Rancho Los Amigos Levels III and IV), took part in individual interviews.
- *Health professionals:*I recruited professionals who had roles in swallowing and communication management with PWTs, as determined by the literature review. This meant thatI excluded those professionals involved with PWTsto manage other medical issues, such as orthopaedic conditions or cardiac complaints, Following this initial exclusion of professionals, I recruited the remaining professionals based on a maximum

variation sampling (Patton, 2002c), where professionals from various fields working with PWTs were selected to get high-quality, detailed descriptions from each, revealing uniqueness while at the same time providing details indicating shared patterns of practice (Suri, 2011).This sampling method meant the inclusion of medical doctors, from consultants to medical officers, as well as dieticians, speech language pathologists (SLPs) and nurses. During the research process, I became aware that in order to fully explore the practices under investigation, the inputs that go into the specific practicesof both hospitals, including those of procurement officers, could provide useful information; thus, I recruitedone officer from each hospital for the study. Patton (2002a) has described this form of sampling,which involves following leads during fieldwork, as ‘emergent sampling’.

The combination of purposeful sampling strategies enabled me to get a rich in-depth description of practice from multiple perspectives. However, since the study was restricted to hospitals in Colombo City, and thus may not highlight more general patterns of practice, especially pertaining to factors like the availability of resources in the rural hospitals. Furthermore, the limited time available for data collection may have resulted in fewer PWTs being available for the study in the private hospital.

4.2.3 Data collection methods and tools

As described at the beginning of this chapter, this study had three objectives, and in Table 4.5, I have presented the objectives, methods and tools used to obtain the data and correlated them with the three perspectives (espoused, actual, and reported) outlined in the conceptual framework in Chapter 3.

Table 0.3. Data collection methods and tools used for each objective

Objectives	Data collection methods	Tools used
1.To describe the global best practices associated with swallowing and communication management for patients with a tracheostomy by reviewing the literature	Scoping literature review	Literature review data-abstraction form (Appendix 2)
2. To understand the practices pertaining to swallowing and communication management in people with tracheostomies (PWTs) in Sri Lanka from the (a) espoused perspective	a. Focussed group discussion and individual interviews (with professionals)	Interview schedule for professionals (Appendix 3) (used to direct focus group discussions and to guide individual interviews)
	b. Individual interviews (with PWTs)	Interview schedule for PWTs (Appendix 4)
	c. Individual interviews (with unpaid caregivers [UNCGs])	Interview schedule for UNCGs (Appendix 5)
(b) actual perspective	Observation	Observation schedule (Appendix 6)
(c) reported perspective	Chart review	Document data extraction form (Appendix 7)
3. To critically appraise practices related to swallowing and communication management in PWTs in majority world contexts compared to the minority world	Critical appraisal of results obtained from literature review with those from interviews, observations and chart reviews	Profile of findings (Appendix 8)

- I addressed Objective 1 through a scoping review of literature published between January 1st, 1990, and April 1st, 2016, using the Literature Review Data Extraction Form (Appendix 2), and I have described this process in detail in Chapter2.
- I addressed Objective 2 through data triangulation at two levels, as directed by the conceptual framework of the study (see the MEP framework outlined in Figure 3.2). I incorporated methods that viewed practice according to the three lenses proposed by the MEP framework:the espoused perspective through interviews, the actual perspective through observation of the PWTs and the reported perspective through chart reviews.

Firstly, triangulation was done at the participant level, where data related to swallowing and communication management was obtained by interviewing PWTs, their UNCGs and the professionals involved in their care. Secondly, the data obtained from these interviews were further supported by data from the observations and the documented practices in the PWTs' medical charts. In effect, I used three qualitative methods—interviews, observations and chart reviews—to describe swallowing and communication management in PWTs in Sri Lanka, thereby obtaining more comprehensive and valid information (Carter, Bryant-Lukosius, DiCenso, Blythe,& Neville, 2014). Each technique and data source had its own advantages and disadvantages, and by using a combination, the inadequacies of individual methods were overcome (Table 4.3). To enable the data to be triangulated, the questions asked were very similar for each method of collection.

(a) Espoused perspective

i. Focus group discussion and interviews of professionals

Discussions withprofessionals took place in focus groups in their respective hospitals, and I interviewed those professionals who could not make it to the focus group (despite having consented to take part in the study) individually, using the same tool. The interview schedule for professionals (Appendix 3) was used for both the focus group discussions and individual interviews. The trained research assistant and I made notes on the facial expressions, body language and other nonverbal cues of each participant. The categories of the espoused data collected comprised information on the resources used (including details of the professionals involved in swallowing and communication management), the processes used to assess and intervene and the outcomes of these practices (included clinical and organisational outcomes and opinions related to the satisfaction in the services provided to PWTs).

ii. Interviews with people with tracheostomies, and iii. unpaid caregivers

I interviewed the people with tracheostomies (PWTs) and their unpaid caregivers (UNCGs)who were recruited for the study individually, using the interview schedule for PWTs (Appendix 4) and UNCGs (Appendix 5). The interviews addressed issued regarding a description of the practices that were in place for their swallowing and communication management; the professionals involved and their roles; the understanding of their condition and need for their tracheotomy and the treatment plan; and their perception of the outcomes,including clinical signs and their satisfaction about the services they receive.

The interview schedules were developed in English and translated to Sinhala (for interviewing PWTs who were not fluent in English). Although I did speak Sinhala (the national language of Sri Lanka) colloquially, having been out of Sri Lanka for a considerable period, my fluency in the language was limited. Thus, I recruited a trained research assistant to conduct the interviews in Sinhala. The research assistant and I both took notes on the facial expressions and body language of each person interviewed.

All interviews were digitally audio recorded (except for one, where consent was not given to record, in which case notes were taken instead), and the research assistant and I made fieldnotes regarding non-verbal expressions. People with tracheostomies who could not effectively communicate verbally were provided with alternative means of communication, which included writing and gestures, which were interpreted audibly by the interviewer so that it could be recorded for transcription and enabled confirmation from the PWT that we were interpreting his or her expressions appropriately.

(b) Actual perspective through observations

People with tracheostomies' interactions with their UNCGs and the professionals involved in their care were observed. Each PWT was observed for one full day, with data collection being guided by an observation schedule (see Appendix 6), which included observation of the processes involved in swallowing and communication management; the resources utilised, professionals and their interactions with each other, the PWTs and their UNCG, interactions of PWT with others and the clinical presentation of the PWTs.

(c) Reported perspective through chart reviews

During observations, the patient charts (inpatient notesor bedside head ticket [BHT] and previous notes maintained by PWT or UNCG) were reviewed, and relevant data was extracted using the document data extraction form (Appendix 7).I recorded data relating to the resources and methods used to assess and treat swallowing and communication, the professionalsinvolved, and referrals made, evidence of clinical outcomes (e.g. history of chest infections), and current mode of feeding and communication.

- Objective 3 was to critically appraise practices in Sri Lanka (representing a majority world context) in relation to these practices in minority world contexts (from the literature review).This appraisal was achieved by conducting further analysis on findings from the literature review (presented in Chapter 2) and the results from the investigation of Sri Lankan practices (presented in Chapter 5). I have tabulated the findings from the literature review regarding swallowing and communication management in PWTs under three headings (Appendix 8): first, processes involved in managing swallowing in PWTs; second, processes involved in managing communication in PWTs; and third, other significant findings in practice patterns (i.e. policy-driven practice and professional roles).I then classified these findings as per the country in which the practice was based. I

also classified the practices in the Sri Lankan context, under the three headings above, and compared the two lists. Anell and Willis (2000) described a similar approach of simple profiling of resources and practice patterns across countries.

4.2.4 Summary of data collection

Figure 4.1. summarizes the key information related to the data collection.

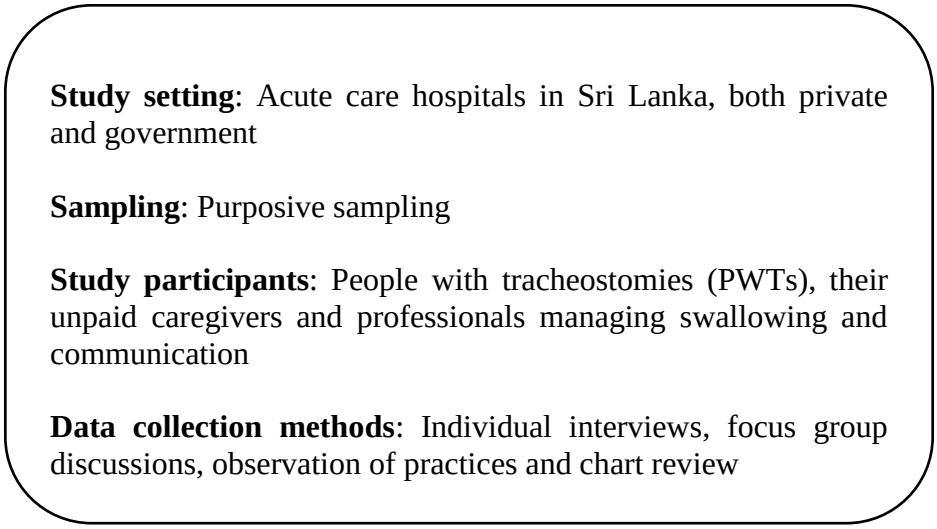


Figure 4.1. Summary of data collection

4.3 Data analysis

The data collection activities described above resulted in a substantial volume of qualitative data. The analysis of the literature review is described in detail in Chapter 2, along with a summary of the findings related to practices of communication management in various countries. Data from the interviews (PWTs, UNCG's and professionals), observations and chart reviews too the form of audio recordings in Sinhala and English, fieldnotes and textual data.With such a varied and high-volume data set, I faced two main challenges, (a) management of the various data sets and (b) analysis of the data. Section 4.4.1 details the steps I took for the management and analysis of this data.

4.3.1 Strategy for processing qualitative data

Qualitative data analysis involves inductive approaches that work on raw data to develop theories, models or concepts. As explained by Corbin and Strauss's (1990) in qualitative research,'The researcher begins with an area of study and allows the theory to emerge from the data' (p. 12). This process is referred to as inductive data analysis. Data analyses designed to examine the consistency of the data with previous assumptions or theories identified by the researcher is called 'deductive analysis' (Burns & Grove, 2010), and most researchers use a combination of inductive and deductive analysis, referred to as a 'hybrid approach'(Fereday & Muir-Cochrane, 2006).

In the present study, I used the hybrid approach (a combination of deductive and inductive coding), and initial analysis of the data was based on the MEP framework developed as part of this study and described in Chapter 3. The use of analytical frameworks to analyse qualitative data was described as early as the 1980s (Ritchie, Spencer,& O'Connor, 2003), and I used the MEP to deduce initial categories from the data. As the researcher, I defined the categories, but the analysis still depended on the how participants described their experiences and the real-time observations of the practice (Patton, 2002a). An example of the process used for data analysis is as follows; the conceptual framework included 'inputs' as one of the components of the efficiency framework, and the use of inductive coding here involved grounding the concept of 'input' in the data, followed by deductive coding or open coding which involved the characteristics, parameters and other attributes of the inputs as described by the participants, as observed by the researcher or documented by the professionals.

The data analysis approach used in this study is similar to that of Ajjawi and Higgs (2007), and was conducted in the following stages:

1) immersion (broad reading reflection and organising data into textual sets based on the conceptual framework to facilitate coding);
2) understanding (identifying first-order constructs through inductive coding and developing initial coding);
3) abstraction (identifying second-order constructs and grouping them into sub-themes);
4) synthesis and theme development (grouping sub-themes into themes, further elaboration of themes and comparing themes across data from various methods);
5)illumination and illustration of phenomena (matching the codes to the key concepts of the theoretical framework and elaborating additional codes emerging from inductive coding); and
6) integration and critique of findings (critical appraisal of the themes final interpretation of the research findings).

Data analysis for this study was thus based on phenomenological hermeneutic principles (Kafle, 2013). Phenomenological data analysis aims to "transform lived experience into a textual expression of its essence – in such a way that the effect of the text is at once a reflexive re-living and a reflective appropriation of something meaningful" (Manen, 1997, pp. 36). In phenomenological analysis, text serves as both the data and product (Smith, 1999), where the researcher uses the voice of the participants to create a rich yet simple description of human intentions, actions and experiences as they occur in the real world. This rich description invokes a phenomenological nod in the reader, resulting in the feeling of experiencing these things themselves (Manen, 1997). The simplicity of the description facilitates readers who have experienced the practice to identify their experiences with the theme selected (Sutton & Austin, 2015).

Following identifying themes from the data, hermeneutic principles were applied to the findings, and this application involved interpreting the themes derived from the textual data, providing in-depth meaning, understanding and interpretation of the health care practices, processes and culture. Myers (2013) has described hermeneutic analysis as "The dialectic between the understanding of the text as a whole and the interpretation of its parts, in which descriptions are guided by anticipated explanations" (Myers,2013, p.107). Accordingly, an understanding of personal accounts of the participants was used to interpret and understand the organisation as a whole and vice versa (Alhojailan, 2012)."Hermeneutic Analysis is unlikely to be appropriate for analysing data that focusses only on participants' visions" (Alhojailan, 2012,p. 40), thus by obtaining interview data from different perspectives and supporting this data with chart reviews and observations of the practice, the hermeneutic analysis applied in the study was focussed on the wider context and considered the entire background in interpreting the data (Myers,2013).

4.3.2 Steps in data management and analysis

The following steps explain in detail the methods I used to organise and analyse the data obtained from the focus group and individual interviews, the observation and the chart reviews.

Step 1.Organising the data: Immersion

Data collection resulted in a large volume of data in the form of audio recording of interviews in Sinhala and English, including fieldnotes made during the interviews, data from observations and data extracted from the chart review. The first step involved converting all the data into a single form (textual data in English), as a preparation for analysis.

The interviews in Sinhala were first transcribed *verbatim* and translated by the second research assistant (not involved in data collection). This transcription was back-translated by the

first research assistant involved in the data collection, following which I listened to the audio recording while reviewing the back-translation. This method of blinded back-translation, involving two bilingual translators (Chen & Boore, 2010), was a time-consuming and expensive process; but it was an essential step to capture the richness of the data and maintain credibility as the transcription. The interviews that I conducted in English were transcribed *verbatim* by the first research assistant, a technique suggested by Patton (2002b). I then, listened to the audio recording while reviewing the transcriptions and inserted the fieldnotes from the interviews at the relevant points to recreate the context of the interview within the texts (Ajjawi & Higgs, 2007).

Data from observations recorded in the observation schedule template (Appendix 6) and data from the chart review recorded in the document data extraction form (Appendix 7) were summarised (as per the headings in the forms) on separate Excel spreadsheets by the research assistant and me. The summaries were compared for any variations in recording, and the few that occurred were resolved through discussion between us. All textual data thus prepared (interviews with PWTs, UNCGs and professionals, along with observations and chart reviews) were then imported into qualitative data-management and analysis software, namelyNVivo 11 (QSR International, 2015). NVivo helps organise, analyse and find insights into qualitative data (interviews, fieldnotes, observational data, etc.), and its use in our qualitative data analysis helped reveal insights in the data and to save time.

Step 2. Identifying first-order constructs through inductive coding: Understanding the data

The textual data imported in NVivo software were analysed for first-order constructs or categories, using inductive coding based on the MEP framework (see Figure 3.2), as described above. First-order constructs were participants' ideas expressed in their own words (Titchen &

McIntyre, 1993) and provided accurate accounts of what each participant said with regards to inputs, processes, policies and procedures, and outcomes (components of the multi-perspective efficiency of practice [MEP], the analytical framework of the study) related to swallowing and communication management for PWTs. Data from observation and chart reviews were also classified into the above categories.

Step 3. Creating themes and sub-themes:Data-abstraction

Themes and sub-themes were created through content analysis, which is considered one of the most significant tools in qualitative interpretive analysis and is based on core consistencies and meanings, which serve to identify the most important patterns or units of meaning referred to as themes (Hsieh & Shannon, 2005). This analysis involved deductive coding, where codes were identified based on my own knowledge and the literature review (as described in Chapter 2), and inductive coding, where patterns in the data and emergent constructs regarding swallowing and communication were identified and grouped into themes and sub-themes under each category described in Step 2 and for each data set.

Step 4. Finalising on the themes: Synthesis

This step involved reading and re-reading the data and comparing themes and sub-themes across data sets to group them together into a smaller number of broad themes in a meaningful way, within and across data sets. These themes and sub-themes were then presented to anSLP, who returned to Sri Lanka for work after having studied and worked in a minority world context for a period of close to 10 years. The discussion of the themes with her, served as a country-member check and yielded feedback on the credibility and transferability of the findings to the Sri Lankan context (Ajjawi, Higgs, & Hunt, 2005).

Following data analysis as described in Steps 1–4, the following is an example of a category, overarching theme and sub-themes that emerged:*category*—inputs and resources available; *overarching theme*—fiscal resources; *sub-theme*—out-of-pocket spending in private sector.

Step 5.Interpretation of findings:Illuminating and illustrating the practice

This step involved interpreting the themes and sub-themes and linking and discussing the findings with the relevant literature. Discussing the themes and sub-themes and going back into the first-order constructs from the data sets (hermeneutic approach), I interpreted the findings and highlighted the practice related to swallowing and communication management in Sri Lanka through the voices of those involved, the actual observations of the practice and documented evidence of these findings from the patient charts.

Step 6. Integration and critical analysis

The last step, of the data analysis process involved a critical comparison between the findings in the Sri Lankan context and the findings from the literature review that represented global practices. This analysis involved profiling the findings from the literature review according to the themes and sub-themes that emerged and charting it against the findings from the Sri Lankan context. These profiles enabled critical debate of the themes, along with a final review of further literature for the themes that emerged from deductive coding,thus improving our understanding of the practices in a majority word context.

4.3.3 Summary of data analysis

Figure 4.2. summarizes the key points related to data analysis.

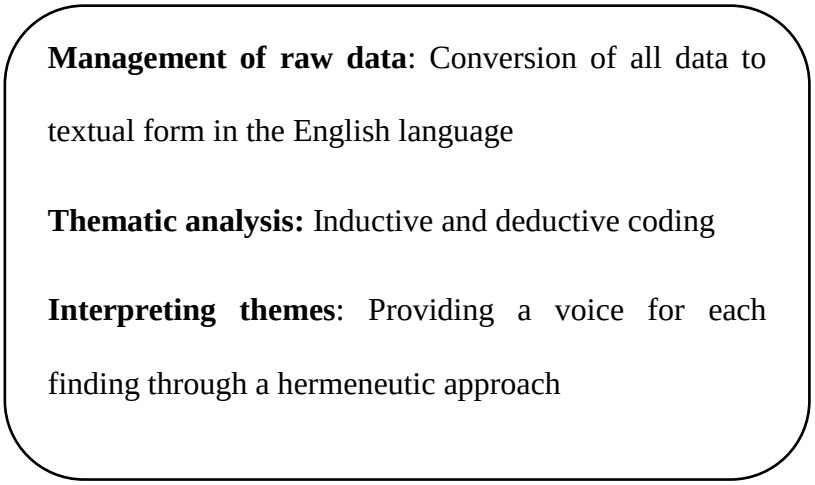


Figure 4.2. Summary of data analysis

4.4 Quality and trustworthiness

A fundamental aspect of all research conducted is to ensure good quality, in both the quality of the data collected, the methods used and the research findings. 'Reliability' and 'validity' are terms used commonly to describe the quality of quantitative research. Over the years, qualitative studies have developed their own terminology for these two metrics,such as 'credibility trustworthiness'(Golafshani, 2003).In the present study, the quality and trustworthiness of the data is determined by methods to ensure rigour, credibility and transferability of the findings (Rolfe, 2006).

Credibility involves establishing that the results of the research are believable and are an accurate reflection of the environment or phenomenon being investigated (Miles & Huberman, 2014). Credibility is similar to internal validity, in which various experiences of a group of people are represented accurately (Yilmaz, 2013). Patton (2002a) describes *rigorous* methods

and integrity in analysis as two of the most essential elements in determining the credibility of qualitative research. This study's systematic data collection methods during the fieldwork (i.e. interviewing, observations and chart review) followed systematic data-analysis strategies to ensure credible data.

The use of *triangulation*(i.e. multiple methods to collect and analyse data) enhances the depth and richness of the data and reduces systematic bias in the data (Denzin & Lincoln, 2000). This study's various forms of data triangulation and the deployment of each method are summarised in Table 4.4.

Table 4.4. Types of triangulation in qualitative research

Forms of triangulation	**Characteristics**	**Application in this study**
Methods of triangulation	• Using different data-collection methods; could be within either the qualitative or quantitative paradigm, or a combination of the two	• Multiple methods within qualitative paradigm: • Focus group discussions • Individual interviews • Observations • d. Chart reviews
Data triangulation	Using multiple sources of data, e.g. comparing perspectives of people from different points of view on the same phenomenon	Data from professionals involved in swallowing and communication management of peoplePWTs, along withdata from PWTs and their UNCGs
Investigator/ analyst triangulation	Using multiple investigators to analyse the data	Researcher and research assistants involved in data collection, preparation and transcription
Theory triangulation	Using different perspectives of investigation	Multiple perspectives: espoused, actual and reported perspectives investigated

Note: Source: Patton (2002c)

This study used four forms of triangulation at different points, to varying degrees. Multiple methods of data collection:Rigorous methods and credible datawere secured through a combination of interviews, followed by observation and chart reviews and data triangulation, where interviews were conducted with PWTs, their UNCGs and the professionals. Investigator and analyst triangulation was achieved to a certain degree by involving research assistants during the data-collection process and also in the data preparation and transcription phase. Their involvement enabled within its limits to reduce researcher bias and in turn improve credibility of data (Chenail, 2011).The study involvesinterviews with professionals from various fields to obtain diverse perspectives (espoused, actual and reported) regarding swallowing and communication management in PWTs,pursuing theory triangulation as described by Carter et al. (2014). Thus, multiple methods of triangulation ensured diverse viewpoints that cast light upon practices related to swallowing and communication management in PWTs (Flick, 2004). Although this was time-consuming and resource-intensive, it resulted in "increasing confidence in research data, creating innovative ways of understanding a phenomenon, revealing unique findings, challenging or integrating theories, and providing a clearer understanding of the problem" (Thurmond, 2001, p. 254).

Miles and Huberman (2014) describe *transferability* as the factor that determines whether the findings of a study are transferable to other contexts (Miles & Huberman, 2014). The generalisability of findings in qualitative research is usually not an expected attribute (Leung, 2015), because such studies usually investigate a phenomenon in a particular context. However, researchers have suggested that transferability and generalisability can be achieved by adopting validity criteria,such as triangulation (described above), multi-dimensional theory (e.g. the MEP conceptual framework of this study) (Finfgeld- Connett, 2010), and analytical generalisations

(where similarities in social contexts and population can be used to judge transferability) (Larsson, 2009; Polit & Beck, 2010). As stated by Ajjawi and Higgs (2008), it is the responsibility of the researcher to describe the context sufficiently, thereby enabling the readers to judge for themselves the applicability of the research findings to their own context.Swallowing and communication management in PWTs in majority world contexts has been under-researched, and the present study'sfocus on practices in Sri Lanka offers a typical majority world country that may represent practices in similar settings.I believe that the rich description of the context and the multiple steps taken to ensure transferability of data, will enable people from within Sri Lanka and similar majority world contexts to identify themselves in these practices and apply the findings within their contexts.

4.5 Ethical considerations

Ethics approval was obtained for this study from the University of KwaZulu-Natal Biomedical Ethics Research Committee (BREC), reference number BE 198/ 15 (Appendix 9).This study was conducted according to the ethical guidelines and principles of the international *Declaration of Helsinki*, *South African Guidelines for Good Clinical Practice* (World Medical Association, 2013).

I faced several challenges in attempting to obtain ethics clearance in Sri Lanka, owing to the lack of clear guidelines and variations in procedures to obtain ethical clearance in Sri Lanka (Simpson, Khatri, Ravindran,& Udalagama, 2015). I sought ethics approval from the Sri Lanka Medical Council and from Forum of Ethics Review Committee in Sri Lanka (FERCS) (Dissanayake, Lanerolle,& Mendis, 2006; Sumathipala et al., 2008).Following a series of correspondences with these organisations, I was informed that these organisations do not verify or certify the work of students from universities overseas. The teaching hospitals in Sri Lanka, in

the government sector currently have their own institutional ethical review committees, to provide ethical clearance for the study (Dissanayake, Lanerolle & Mendis, 2006). I thus obtained ethics approval from the government hospital (Appendix 10), along with gatekeeper permission to carry out the research.The private hospital did not have an ethics committee, so the proposal was submitted to hospital management, who evaluate all aspects of research proposals, and they accepted this study's proposals and granted institutional approval (Appendix 11).

I clearly explained the study and the objectives of the study to the participants and the hospitals and took all measures to ensure confidentiality and the anonymity of individual participants and the hospitals involved in the study. Consequently, I have ensured that participants and the hospitals are not identified in any report or publication associated with this study.

Before data collection, I obtained written consent from the PWTs, the UNCGs and the professionals who took part in the study,specifying that they agreed to take part in the study and audio record their interviews, and consented to review of the medical charts of the PWTs, during the study. No personal identification data was recorded. The copy of the informed consent form provided to the research participants is provided in Appendix 12. All raw data for the study is secured in locked cabinets which only I can access. These documents are to be shredded at the end of the study.

Participants were also informed that their participation in the study was entirely voluntary and that they would be free to withdraw themselves or any of their data from the research, at any time. They also were made aware they could refuse to answer any questions or discuss any issues at any point during the interviews. They were also told that they could view data gathered

pertaining to them and inquire regarding the status of the study. A copy of the completed study is to be provided to each of the participating hospitals.

The participants were made comfortable during the interview process and the research assistant and I ensured that we did not hinder any of the activities of the professionals, PWTs or their UNCGs during observation and chart reviews.

3.10 Summary and conclusion

This purely qualitative study was based on a hermeneutic phenomenological approach informed by Ajjawi and Higgs's (2007) methods of data analysis and was used to research health practices in Sri Lanka, an under-explored majority world context.A rich description of practice was secured through the use of multiple data sources (i.e. PWTs, their UNCGs and professionals involved in swallowing and communication management) and multiple methods of data collection, including focus group and individual interviews, observations of practice, and reviews of PWTs' charts. Content analysis of the data following inductive and deductive and hermeneutic interpretation of this analysis resulted in an in-depth analysis of practice. Credibility, rigor and transferability through various methods of data triangulation ensured the quality, trustworthiness and generalisability of data. The chapters that follow provide the results of this investigation.

Chapter 5

Results and Discussion

Part One: Management of swallowing and communication in tracheostomised populationsin Sri Lanka

5.1 Introduction

The primary aim of this thesis is to understand the efficiency of health care practices in majority world contexts by studying the efficiency of swallowing and communication management in people with tracheostomies (PWTs) in Sri Lanka. To achieve this feat, the first step I took was to review existing published literature describing practices related to swallowing and communication in PWTs in countries around the world (Chapter 2). I then used the findings from the literature to design a conceptual framework and devise a method (as described in Chapters3 and 4) to study the practices managing swallowing and communication in PWTs within Sri Lanka—an unresearched context.

I present the results of the study in three parts in Chapters5, 6 and 7. In this chapter, I present the results related to the second objective of the study, which is to describe the practices managing swallowing and communication in PWTs in Sri Lanka. The description of the practices presented includes all components (inputs, processes and outcomes) outlined by the conceptual framework of the study (Chapter 3) from the viewpoints of those involved in the practice and as observed in real time, by me, as the researcher. Thus, as directed by the conceptual framework, I describe these practices from the espoused perspective, supported by the actual and reported perspectives, thereby providing a comprehensive account of the practices managing swallowing and communication in PWTs in Sri Lanka. As a result, data from the interviews of PWTs, their unpaid caregivers (UNCGs), and the professionals managing their

swallowing and communication have been analysed together with data from the observation and chart review of PWTs, as described in Chapter 4.

I present the findings of this analysis in an incisive account, as the second manuscript of my thesis, titled: ‘Management of Swallowing and Communication in PWTs: The Case of Sri Lanka’, which is to be published in the *International Journal of Speech-Language Pathology*. In Chapter 6, I review and critically appraise the healthcare practices around managing swallowing and communication for PWTs in Sri Lanka with reference to similar practices in other parts of the world. Finally, in Chapter 7 I present a further analysis of the findings to draw attention to the impact of power dynamics on the efficiency of health care practices in majority world contexts such as Sri Lanka. In effect, what ensues in the next three chapters is a journey through Sri Lanka’s health care practices involved in the swallowing and communication needs of PWTs, followed by a dialogue between these practices and those reported in other healthcare contexts. The exercise of correlating the findings from Sri Lanka to those practices from other contexts reveals insights into the intricacies of health care practices which have significantimpact on the overall efficiency of the health system.

5.2 Manuscript two of the thesis

In this section, I present the second manuscript of my thesis, entitled ‘Management of Swallowing and Communication in PWTs: The Case of Sri Lanka’, which is to be published in the *International Journal of Speech-Language Pathology*. The manuscript has thus been written according to the journal requirements. For integration into the thesis, the figures, tables and pages are numbered continuously as part of the chapter, and the title page, declaration and running head of the article have been removed. This article may be referenced as ‘Ishak, F.N. & Pillay, M.P. (2017). Management of swallowing and communication in PWTs: The case of Sri

Lanka. *International Journal of Speech-Language Pathology*volume, pp.' The journal requires that authors follow theAPA sixth edition formatting and reference style, and accordingly, the references are listed at the end of the manuscript. In the manuscript, I have briefly described the background to the study, followed by a brief account of the method and analysis used to derive the results, prior to presenting the findings related to the swallowing and communication management practices in Sri Lanka. I have already described in detail the information in these sections in the previous chapters of this thesis, but for orientation to the article and for publication in the journal, these sections needed to be reiterated in the manuscript.

Management of Swallowing and Communication in People withTracheostomies: The Case of Sri Lanka

ABSTRACT

Purpose:

To describe the practices pertaining to the management of swallowing and communication in people with tracheostomies (PWTs) in Sri Lanka.

Method:

Qualitative data triangulation using focus groups, in-depth interviews, observations and chart reviews were used to describe practices pertaining to swallowing and communication management in tracheostomised populations in Sri Lanka. Thematic analysis of the data was used to identify key concepts and themes within the data.

Results:

Results are presented under five categories: (a) inputs and resources available, (b) processes involved in swallowing-management, (c) processes involved in communication management (d) policies and guidelines for practices related to tracheostomy and (e) the outcomes of these processes in the management of PWTs in Sri Lanka.Key themes and sub-themes identified under each category are detailed and discussed with reference to the relevant literature.

Conclusion:

Practices related to swallowing and communication in tracheostomised populations in Sri Lanka are characterised by inconsistent practices, a lack of resources (including trained professionals) and hierarchical professional dynamics that affect clinical outcomes.

Keywords: Swallowing, Communication, Tracheostomy, Sri Lanka

Introduction

Tracheostomies have become one of the most common surgeries worldwide (Giyloma,Balumuka,&Chalya 2011; Manley, Frank, & Melvin, 1999), and they have become a vital tool in the medical management of critically ill patients (Venkat, 2013).Although a tracheostomy is a straightforward surgical procedure, PWTs face much adversity,such physical pain, limited ability to communicate effectively and compromised ability to swallow, making it difficult for them enjoy food and conversation, thereby negatively impacting their quality of life (Foster, 2010; Sherlock, Wilson,& Exley, 2009). A literature review revealed poor agreement on practices related to managing swallowing and communication in PWTs (Ward, Agius, Solley, Cornwell,& Jones, 2008), and studies have also reported that the knowledge levels of relevant professionals vary between and within health care settings (Shah et al., 2012; Zhu, Das, Brereton, Roberson, & Shah, 2012). Thus, inadequate skills and inconsistent practices may lead to complications and suboptimal care for affected persons (Mitchell, Parker,& Giles, 2013).

A review of a substantial body of literature that preceded this study showed that health care context influences practice related to the management of swallowing and communication in PWTs and revealed a scarcity of research published in the majority world (countries which comprise most of the world's nations, previously termed ‘less developed countries’[LDCs]) (Marsh, Keating, Punch,& Harding, 2009). Thus, the aim of the present study is to describe swallowing and communication management in PWTs in Sri Lanka, a majority world country.

Sri Lanka is a rapidly developing island nation on the Indian subcontinent, with a developing economy (World Bank, 2017). Despite several years of internal conflict in Sri Lanka, the country boasts an impressive record for good health care provision, with the quality of

inpatient care comparable to health care in higher-income or minority world contexts (Rannan-Eliya et al., 2015). Both the government sector and the private health sector play vital roles in health service–delivery in Sri-Lanka. Resultant from the free healthcare policy of successive governments, Sri Lanka's healthcare arena is dominated by the government sector, and almost all preventative care is provided by the public sector (Abeykoon, 2003; Govindaraj, Navaratne, Cavagnero, & Seshadri, 2014). The private sector, which has shown rapid growth in the past two decades, predominantly provides outpatient and some inpatient curative care (Govindaraj et al., 2014; Paskins, 2001).

Despite the vast advances in its health care, Sri Lanka continues to face challenges, including a lack of rehabilitation services and a lack of research addressing the services (Axelsson, 2014). Interestingly, one of the main foci of Sri Lanka's National Health strategic plan, published in 2016 and targeting the year 2025, is improvement in rehabilitative services (Ministry of Health Sri Lanka, 2016); to achieve this goal, it is important to know what presently exists in Sri Lanka.

In line with the strategic objectives of the health master plan of Sri Lanka, and considering the paucity of research related to the management of tracheostomies that exists in majority world contexts, this study seeks to describe the management of swallowing and communication in PWTs in Sri Lanka from the perspectives of those involved in the service: the patients, their UNCGs and the professionals managing their swallowing and communication needs. Ethics approval for this study was obtained from the Biomedical Research Ethics Committee of the University of KwaZulu-Natal, South Africa, and from the ethics committees of the hospitals in Sri Lanka where the study was carried out.

Method

This study used an exploratory-triangulation design (Kwok, 2012), in which multiple qualitative methodologies were utilised to provide an in-depth description of the practices involved in swallowing and communication management in PWTs in Sri Lanka. Data from observations, document reviews, and semi-structured and focus group interviews were utilised to provide a multi-perspective description of these practices. The focus group and individual interviews were used to divulge the espoused perspectives of all those involved in the practice (PWTs, their UNCGs and professionals involved in the practice), followed by planned observations that shed light on the actual perspective (a description of practice as it happens), and finally, the official or reported perspective was obtained through chart reviews.

Study setting

The study was conducted in two acute care hospitals in Colombo, the commercial capital of Sri Lanka. Participants were recruited from both a government and a private hospital, to ensure engagement of professionals and patients from both the private and government sectors, thereby providing richer data. A detailed description of the hospitals is not provided to prevent identification of the participants and the participating hospitals.

Participants

A purposive sampling strategy (Arber, 2001) was used to identify three groups of participants from each site: PWTs, their UNCGs and professionals involved in the management of PWTs. The PWTs selected for the study were 18 and older and had intact cognitive skills (determined by achieving Level VII–VIII in the Rancho Los Amigos Scale, cognitive function scale (Malkmus, Booth, & Kodimer, 1980). Five PWTs were interviewed in the government hospital, but no PWTs fitting the inclusion criteria were identified in the private sector hospital.The UNCGs selected were also 18 or older and were all family members with close

relationships to the PWTs. Professionals who participated in the study from both hospital sites included medical, nursing and allied health workers who had a significant role in tracheostomy management. Tables 5.1, .5.2 and 5.3 summarise the details of the study participants.All participants gave full and informed consent, except one professional who did not consent to being audio recorded. Her interview was recorded as fieldnotes made during the process.

Table 5.1. Profiles of the Patients with Tracheostomies (PWTs)

Participant	Age / gender	Duration of tracheostomy	Level of education
PWT 1	66 years / Female	10 months	Less than high school
PWT 2	40 years / Male	6 years	Less than high school
PWT 3	49 years / Male	10 days	Less than high school
PWT 4	45 years / Male	1 year 6 months	High school
PWT 5	19 years / Male	10 days	High school

Table 5.2. Profiles of the Unpaid Caregivers (UNCGs)

Participant	Age/ gender	Relationship to PWT	Hospital
Gvt UNCG 1	27 years / male	Son of PWT	Government
Gvt UNCG 2	66 years / female	Mother of PWT	Government
Gvt UNCG 3	25 years / female	Daughter of PWT	Government
Gvt UNCG 4	30 years / male	Son of PWT	Government
GvtUNCG 5	28 years / female	Daughter of PWT	Government
Pvt UNCG 1	60 years / male	Husband of PWT	Private
Pvt UNCG 2	44 years/ female	Mother of PWT	Private

Table 5.3. Summary of Participating Health Care Professionals

Professional	Number of participants	Type of interview
Government hospital		
Anaesthetist	1	Individual semi-structured
Ear,nose &throat (ENT) consultants	3	Focus group
Senior registrars	3	Focus group
Registrars	2	Focus group
Medical officers	3	Focus group
Senior speech therapist	1	Individual semi-structured Focus group
Speech language pathologists (SLPs)	2	Focus group

Nurses	2	Focus group
Dietitian	1	Individual semi-structured
Procurement officer	2	Individual semi-structured
Private hospital		
Physician	1	Focus group
Medical officers	4	Focus group
Senior nurse	1	Focus group
SLP	1	Individual semi-structured
Dietitian	1	Individual semi-structured
Procurement officer	1	Individual semi-structured

Data-collection methods and instruments

Multiple methods of data collection were employed. Focus group interviews with the professional group was carried out in the two hospitals using the semi-structured interview schedule for professionals to guide the discussions. Face-to-face interviews were conducted, using the same interview guide, with the professionals who could not take part in the focus group interviews, as detailed in Table 3.Individual interviews were conducted with PWTs and their UNCGs using semi-structured interview schedules. All interview schedules were developed from a review of the relevant literature on swallowing and communication management in PWTs (Alhashemi 2010; De Mestral et al., 2011; Goldsmith, 2000;Mullender, Wheatley, & Nethercott, 2014;) and the researcher's own clinical experience with PWTs. Interviews lasted between 45 and 90 min and took place in the hospital setting, a location identified as most convenient by the participants. The research assistant aided in data collection by carrying out the interviews in Sinhala (the national language of Sri Lanka) for PWTs and their UNCGs who were not fluent in English.

All interviews were digitally audio recorded (except for one, where consent was not given to record, in which case notes were taken instead), and fieldnotes regarding facial expressions and other non-verbal expressions were made by the researcher and the research

assistants. People with tracheostomies who could not effectively communicate verbally, were provided with alternative means of communication, including writing and gestures, which were interpreted audibly by the interviewer, for transcription.

The observation schedule defining the areas to be observed were used to observe the setting, interactions and practices associated with swallowing and communication in PWTs in various ward settings (medical, surgical intensive care units [ICU]; ear, nose and throat [ENT]; and neurotrauma units) in the two chosen hospitals at various times in the day. The findings were documented, and reflective notes were made in the observation schedule (Appendix 6).The charts of PWTs in both sites (five in the government and two in the private sector hospital) were reviewed, and relevant data was extracted using a data-abstraction form.

Denzin and Lincoln (2000) have described the use of triangulation or the use of multiple methods and data sources to enhance the depth and richness of qualitative data. In the present study, the quality and trustworthiness of the data was supported by method triangulation (interviews, observation and chart reviews) and data triangulation (interviews with PWTs, their UNCGs and professionals managing swallowing and communication).

Data analysis

Taped interviews were transcribed *verbatim* by a research assistant with extensive training in qualitative research methods and transcription. The interviews transcribed in Sinhala were subsequently translated. Data from observation and documentation were summarised in sections, with interpretative reflective notes. Following this initial data preparation, Ajjawi and Higgs (2007) approach to data analysis was undertaken, and all data was systematically reviewed to develop and compare key themes or findings.NVivo 11 (QSR International, 2015), a qualitative software program, was used to assist in data management and analysis. Hybrid coding

(Fereday & Muir-Cochrane, 2006), a combination deductive (an *a priori* template of codes based on conceptual framework) and inductive coding (data-driven coding) was used to identify themes within the data.

Results and discussion

Results are reported and discussed in five categories: (a) inputs and resources available, (b) processes involved in swallowing-management, (c) processes involved in communication management (d) policies and guidelines and (e) the outcomes of these processes. Table 5.4 summarises the categories and the themes and sub-themes that were identified under each category. Extracts from fieldnotes, document reviews and interview transcripts are used selectively to illustrate the findings and highlight the various perspectives regarding the practices. Viewed collectively, these accounts provided an in-depth understanding of the practices related to swallowing and communication management in PWTs, thereby filling a gap in research related to the rehabilitation of PWTs in majority world context

Table 5.4. Categories, Themes and Sub-themes

Category	Theme	Sub-theme
Inputs	Fiscal resources vary depending upon setting	Fiscal constraints result in resource constraints
		Financial burden borne by PWTs or their UNCGs
	Inadequate capital resources for swallowing and communication management in PWTs	Professionals improvise available resources to suit needs
		Inadequate knowledge leads to utilisation of available resources
		UNCGs in private sector look for resources outside Sri Lanka
	Health professionals from different disciplines work independently	Poorly defined professional roles
		Medical dominance results in poor teamwork
Processes involved in swallowing-management	Swallowing-management not prioritised	
	Assessment methods vary within and between settings	*Adhoc* screening of swallow function
		FEES or FOL is the most common method to assess swallow function
	Diet modification and alternative feeding used to manage swallowing-difficulties	Enteral feeds prepared by mixing kitchen feeds
		Oral diets prepared in bulk
	Poor observation of aspiration precautions	
Processes involved in communication management	Poorly defined processes for assessment of PWTs	Misconceptions among professionals about communication impairment in PWTs
	Unconventional methods to facilitate communication	Finger occlusion instead of speaking valves
		Capping done at PWTs discretion
		Alternative modes of communication provided in *adhoc* manner
Policies and guidelines	No specific guidelines for swallowing and communication management	
Outcomes	*Organisational:* PWTs managed in ENT wards	
	Health: Infrequent investigation for aspiration pneumonia	
	Satisfaction: Varying levels of satisfaction	

Category 1: Inputs and resources available

Management of swallowing and communication in PWTs requires well-equipped systems and skilled multidisciplinary teams (MDTs) (Norwood, Spiers, Bailiss,& Sayers, 2004; Tobin &Santamaria, 2008). The resources available within the Sri Lankan context for swallowing and communication management are described below under three themes.

Theme I:Fiscal resources vary depending upon setting

Financial burdens in health care are commonly reported in both majority (Adhikari, Fowler, Bhagwanjee,& Rubenfeld, 2010; Kankeu, Saksena,& Evans, 2013) and minority world countries (Karanikolos et al., 2013; Kronfol, 2012) and are seen to affect people from all strata (Cunningham, 2010). In Sri Lanka, the availability of fiscal resources varies between various hospitals. The professionals in the government sector have reported that the large government teaching hospitals have the highest budgets for procurement when compared to private and smaller government facilities (Gvt ENT Consultant 1 and Gvt Procurement Officer 1). They also report that local purchase orders can be freely made as required and the budgets in these hospitals are flexible (Gvt ENT Consultant 2 and Gvt Procurement Officer 1). In the private hospital, however, the physicians state that even though tracheostomies are not too expensive to perform, the maintenance and special care these patients require later can be costly (Pvt. Physician 1).Like in the Sri Lankan context, other majority world countries also report that financial resources vary across different settings (Saksena, Xu, Elovainio,& Perrot, 2010).

Sub-theme:Fiscal constraints result in reduced resources

Globally, fiscal constraints are one of the main reasons for a lack of adequate resources in health care (De Belvis et al., 2012; Mueller, Lungu, Acharya, & Palmer, 2011). In this study it was found that although the professionals in the government sector reported having good

financial support, they were unable to acquire certain resources like feeding pumps, double lumen tubes and fenestrated tracheostomy tubes, due to their high costs (Gvt ENT Registrar 1).

Sub-theme:Financial burden borne by people with tracheostomies or their unpaid caregivers

As evident from the findings of this study, previous studies done in Sri Lanka report that while the government sector provides free healthcare (Rannan-Eliya et al., 2015), out-of-pocket spending is the most common way to cover health care costs in the private sector (Jayasinghe, 2010; Perera, Gunatilleke, & Bird, 2007). In this study too, the unpaid caregivers (UNCGs) interviewed reported that they had to bear the costs of hospitalisations and other capital resources required for swallowing and communication management for the people with tracheostomies (PWTs). To this effect,Pvt.UNCG 2 said, 'I pay LKR 50,000 [USD325] for one admission in a private hospital, each time my son gets sick. Yet I privately get down items like food thickeners, unavailable here, from friends and family living overseas'.

Theme II: Inadequate capital resources for swallowing and communication management among people with tracheostomies

As described by the participants during the interviews and as observed by the researcher, there is a significant lack of resources in Sri Lanka for the management of swallowing and communication in people with tracheostomies people with tracheostomies (PWTs).The literature describing the availability of such resources in the majority world is sparse (Murthy, Leligdowicz,& Adhikari, 2015), and studies done in minority world contexts like the UK also report being confounded by lack of capital resources for PWTs (Lewis & Oliver, 2005).

Sub-theme: *Professionals improvise available resources to suit needs*

To overcome the lack of resources, professionals report and are seen to improvise by finding alternatives to commercially available products like fenestrated tracheostomy tubes, food

thickeners and feeding pumps.Dietitians in both hospitals reported of using products like multigrain cereal powder and corn starch to thicken foods to required consistencies, in the absence of commercial thickeners (Gvt Dietitian and Pvt. Dietitian). They also reported making rice porridge and changing its consistency by either diluting it or making it thicker by adding more rice (Gvt Dietitian). These methods may result in variations in diet consistency, which can adversely affect clinical outcomes (Garcia & Chambers, 2010),so researchers and clinicians in many countries across the world have stressed the importance of diet standardisation in recent times (Cichero et al., 2013).

Enteral feeding practices are costly and resource-intensive, with better outcomes reported in minority world compared to majority world contexts, owing to variations in methods of implementation and risk of infections between the two settings (Maude et al., 2011). In Sri Lanka, too, the professionals reported that feeding pumps required for optimal enteral feeding (Bankhead et al., 2009) are not widely available,so syringe feeding through nasogastric tubes is the most common method of administering enteral feeds (Observations in private and government sector hospitals; Gvt Dietitian; Pvt. Dietitian; Gvt Nurse 1). This method can lead to inaccuracy and a lack of flexibility in diet plans,producing an inability to administer continuous enteral feeding (Bankhead et al., 2009; Lee, Campion, Morrissey, & Drazen, 2010).

Improvisation to cope with inadequate resources is reported in other majority world contexts too (Fournier, Mill,& Walusimbi, 2007). The medical doctors describe making fenestrations in tracheostomy tubes manually, as fenestrated tubes are costly and difficult to procure for all patients (Gvt ENT Registrar 1).

Theme III:Health professionals from different disciplines work independently

Healthcare delivery in the majority world including Sri Lanka is constrained by financial, capital and human resources, and these challenges are confounded by an inadequate mix of skills, levels of knowledge and expertise among healthcare practitioners (Sridharan, 2010). Several studies originating in minority world contexts have identified that skilled professionals from various disciplines need to work together to achievethe best outcomes for PWTs (Mitchell, Parker & Giles, 2013; Garuti et al., 2014). The Sri Lankan health sector is equipped with professionals like nurses, specialist physicians (i.e., anaesthetists, ENTs and neurologists) and specialised allied health professionals (e.g. dietitians and speech and language pathologists (SLPs)). However, these professionals appear to work independently, with inconsistent communication between them, as observed and reported by the dietitian and SLPs working in Sri Lanka. The dietitian in the government hospital said,'It is not often that we interact with the speech therapists as the team approach is not very strong in Sri Lanka' and similar reports were also made by the SLPs (Gvt SLP 1) and the dietitian (Pvt. Dietitian) in the private sector.

Sub-theme: Poorly defined professional roles

Professionals within MDTs and interdisciplinary teams (IDTs) manage swallowing and communication difficulties in PWTs with well-defined roles and professional boundaries (Tanner, 2006; Grossbach, Stranberg & Chlan, 2010; Happ et al., 2010). For example, SLPs take on the primary role of managing swallowing-difficulties (Freeman-Sanderson, Togher, Phipps & Elkins, 2011; Hauck,1999) and communication impairments (Dawson, 2014) in PWTs. In Sri Lanka, however, findings reveal that professionals appear to have poorly defined roles, as reported by many of the participants (Gvt Anaesthesist; Gvt Nurse 1; Pvt. Dietitian 1) with decisions on whether a PWT is safe to take food orally made mostly by doctors (Gvt ENT

Consultant 2) and sometimes by SLP's (Gvt Dietitian 1); most of the communication management in this patient population is carried out by the nurses (ObservationsofGvt PWT 3, and Gvt PWT 5; Gvt Anaesthetist; Pvt. Medical Officer 1). Similarly, poorly defined professional roles are also reflected in the way diet orders are made for patients; the dietician in the government hospital stated, 'today while I'm preparing diet plans for patients here, the medical officers are also, in the other room, preparing diet plans for the patients' (Gvt Dietitian 1).Similar situations in which professional roles are poorly defined in managing PWTs have been reported by practices in other countries (Alhashemi, 2010; Garuti et al., 2014). For health care teams to function optimally, it is important that professionals within the team promote role interdependence, identify their own roles and boundaries,and respect and understand the scope of other team members (Nancarrow et al., 2013).

Sub-theme: Medical dominance results in poor teamwork

It is common in many parts of the world that medical doctors, intensivists (Tobin & Santamaria, 2008), and ENT doctors (Arora, Hettige, Ifeacho,& Narula, 2008) take lead roles in tracheostomy management, dealing with medical concerns, leading team meetings and providing education to other professionals, including nurses (Arora et al., 2008). In these teams, professionals from other disciplines take on active roles in handling the rehabilitative needs of these patients, including the management of swallowing and communication difficulties (Garrubba, Turner,& Grieveson, 2009). In Sri Lanka, PWTs appear to be managed by medical doctors, specifically the ENT doctors who take on the main responsibility for all aspects of care in these patients, as revealed by the ENT consultants themselves:'If the patient is in my care, I am responsible for everything…' (Gvt ENT Consultant 2). The medical registrars, the document reviews and PWTs affirm this statement, revealing that practices like swallow assessments are

usually done by the doctors through instrumental procedures, despite specifically trained allied health professionals like SLPs being available (Gvt Senior Registrar 1; Chart review Gvt PWT 2; Gvt PWT 1 and Gvt PWT 2).This situation constitutes evidence of medical dominance resulting in poorly defined roles and poor teamwork.

Category 2: Processes involved in swallowing-management

Extensive descriptions by participants, data from observations and data from the documented notes in charts have been synthesised to describe the processes involved in swallowing-management in PWTs in Sri Lanka.

Theme I:Swallowing-management not prioritised

The findings indicate that the assessment and management of swallowing-difficulties is not a priority in the management of PWTs in Sri Lanka. The PWTs interviewed reported that no one assessed their swallowing, and their UNCGs in the wards reported that despite being admitted with chest infections, patients were not assessed for swallowing impairments (Gvt PWT 1; Gvt PWT 4; Pvt. UNCG 2). Observations by the researcher revealed that despite PWTs coughing extensively during eating and drinking, they were on regular diets and thin liquids (Observation ofGvt PWT 1 andGvt PWT 3).

The doctors described the delays encountered in getting special diets delivered to patients, indicating a lack of urgency in providing them with suitable diets: ‘When we order a special diet from the hospital, it takes time; it doesn’t happen for days, and we have to reorder sometimes’ (Gvt Senior Registrar 2).

The presence of a tracheostomy disrupts normal swallowing, and many studies have found that PWTs have a high incidence of swallowing-difficulties that could lead to compromised health outcomes (Epstein, 2005). Modified diets are provided to these patients for

clinical reasons, most of the time to prevent serious life-threatening consequences like aspiration pneumonia (Garcia & Chambers, 2010). A delay in providing them these requirements can lead to adverse clinical outcomes like suboptimal nutrition, medical complications and poor quality of life (Sura, Madhavan, Carnaby,& Crary, 2012).

Theme 2. Assessment methods vary within and between settings

The assessment of swallowing in PWTs has been reported widely in the literature, and it is evident that, globally, professionals follow some routine steps in assessing these patients. Some studies describe practices where nurses, trained by SLPs, conduct swallow screens followed by referrals to SLPs for further assessments (Ginnelly & Greenwood, 2016). Other informal means of screening for swallow impairments in PWTs,for example SLPs picking up at-risk PWTs by attending ward rounds (Ginnelly & Greenwood, 2016) and reviewing patient history (Vandenbruaene, Dick,& Vauterin, 2008) have also been reported. The most frequently reported formal screening method done by SLP's is the blue dye test (Vandenbruaeneet al., 2008) or the modified Evan's blue dye test (Rodrigues et al., 2015), which is still widely used to detect possible aspiration in this patient population, in spite of receiving mixed reviews concerning its accuracy. Following a failed screening, it is common practice for the SLP's to conduct bedside swallow assessments with oro-motor assessment, cranial nerve examinations (Alhashemi, 2010; Vandenbruaeneet al., 2008) and reflex texting (Rodrigues et al., 2015). These bedside swallow assessments are done with or without food trials (Vandenbruaeneet al., 2008; Garuti et al., 2014), depending on the patients' condition and the SLP's clinical judgment. In cases where conclusive evidence cannot be drawn from these assessments, clinicians conduct instrumental assessments,such as vidoeflouroscopy swallow studies (VFSS) (Ceriana et al., 2015) and fiberoptic endoscopic evaluation of swallow (FEES) to evaluate the swallow

mechanism objectively (Pryor, Ward, Cornwell, O'Connor & Chapman, 2016). Both these procedures are usually based on well-established guidelines to ensure consistency in practice.

Inconsistent practice in the assessment of swallowing in PWTs have been reported in the literature in various health care contexts (Mitchell, Parker & Giles, 2013). Similarly, findings from Sri Lanka have revealed that screening and assessment of swallowing in PWTs seem to be done in an *adhoc* manner. It appears that in Sri Lanka, not all PWTs are referred to SLPs for swallow assessments, and the nurses assess swallow on a 'let's feed and see' basis, sometimes even unaware of what clinical signs may indicate swallowing-difficulty (Senior Gvt SLP; Gvt Nurse 1). The speech therapist referred to a manual assessment of swallow (Senior Gvt SLP) used to assess the swallow function of PWTs, consists of components of the clinical bedside swallow evaluations, like assessing voice quality, as reported in literature (Ramsey, Smithard & Kalra, 2003; Zenner, Losinski & Mills, 1995). However, it appears that FEES or fiberoptic laryngoscopy (FOL) is the most widely used method for swallow assessments in PWTs in both government and private sector hospitals, as is evident from the professional interviews in the two hospitals. The immediate response from the senior ENT registrar when asked about swallow assessment was, 'We do FEES' (Senior Registrar 1), clarified by ENT consultant who said 'We refer to speech therapists sometimes; they do manually and if they suggest we do FEES in the OR [operating room]. We use a fibre optic laryngoscope, keep it above the larynx and ask the patient to swallow. Since we have the screen, we can assess whether there is an aspiration or not through the camera. We use only milk, but if the speech therapists join they use yogurt, jelly and various things' (Gvt ENT Consultant 1). The SLP in the private sector explained that she works closely with the ENT consultant who performs FEES on patients. She said that they do not follow a protocol, and generally use milk for testing and other consistencies if required.

In most practices reported in the literature, FEES is done as an adjunct to bedside swallow evaluation, usually when bedside swallow assessments are inconclusive (Pryor et al., 2016). Fiberoptic endoscopic evaluation of swallowis done, based on established protocols, at patient's bedside using a flexible fibre optic rhinolaryngoscope, where patients are given food of various consistencies stained with green dye to differentiate aspiration of the food bolus from secretions (Bax, McFarlane, Green, & Miles, 2014). Practices in Sri Lanka do not appear to follow these protocols and are not backed by scientific evidence, and thus they may result in inaccurate swallow assessments, which could have far-reaching consequences on patient outcomes.

Theme III:Diet modification and enteral feeding used to manage swallowing-difficulties

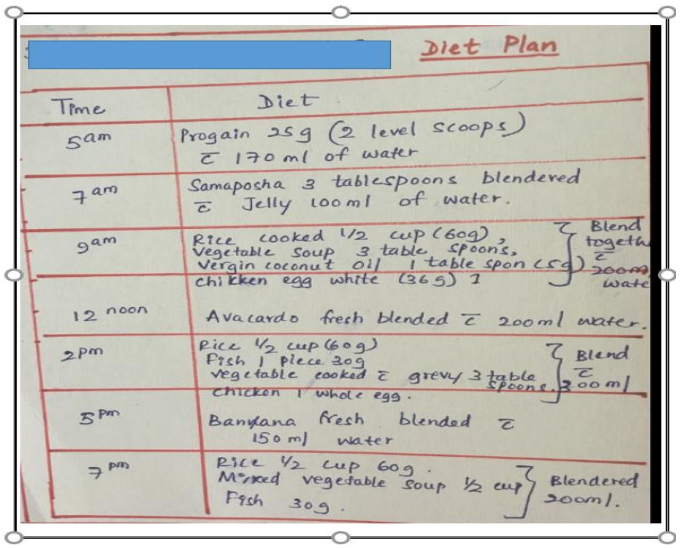
The goal of swallow interventions in PWTs is to maintain adequate nutritional intake and to maximise airway protection. Intervention to improve swallow function in PWTs includes both direct strategies (using food) and indirect approaches, which involve exercises without food (Rodrigues et al., 2015). Therapy techniques have been reported to include compensatory manoeuvres designed to minimise the signs and symptoms of dysphagia; the manoeuvres include changes in posture, improvement of oral sensitivityand modification of diet (volume, viscosity, temperature and taste modification). In patients who are unable to swallow safely, enteral feeds through nasogastric and PEG (Percutaneous endoscopic gastrostomy) tubes are recommended to achieve adequate nutrition (Stroud, Duncan,& Nightingale, 2003). Use of speaking valves to improve airflow into the upper airway, thereby improving sensation and secretion management, has also been reported (Carrau, Murry,& Howell, 2016).

In Sri Lanka, enteral feeding and diet texture modification are the most commonly used intervention methods in managingswallowing-difficulties among PWTs. Although the PWTs

(Gvt PWTs 1,2, and 3) and UNCGs (Gvt UNCGs 1,2,5 and Pvt UNCG 2) reported that PWTs were oral feeding with the tracheostomy, professionals from both sectors report that in their experience most PWTs are enterally fed (Gvt Anaesthetist 1; Gvt and Pvt.Dieticians and Pvt.Medical Officer 1).

Sub-theme: Enteral feeds prepared by mixing kitchen feeds

The dietitian in the private sector described enteral feeding practices:'In six years of working in hospitals I have seen a maximum of 10 PWTs on oral feeding.Pre-prepared scientific formulas are now given continuously in ICUs, but in wards, kitchen feeds and juices are given via the enteral tubes' (Pvt. Dietician).A documented diet plan was found in a patient's file, handwritten as seen Figure 5.1, indicating NGT (nasogastric tube) feeds prepared at the bedside by mixing kitchen feeds with water to be given to the PWT every 2 h. Ready-to-use scientific formulas that are commercially available are more accurate and less contaminated than handmade formulas and enteral feeds prepared by mixing kitchen feeds (Sullivan et al., 2001). Despite this advantage, many majority world countries continue to mix kitchen food to prepare enteral feeding, mainly for economic reasons (Baniardalan, Sabzghabaee, Jalali,& Badri, 2014), as is the case in Sri Lanka.



Diet Plan

Time	Diet
5am	Progain 25g (2 level scoops) c 170 ml of water
7am	Samaposha 3 tablespoons blendered c Jelly 100 ml of water.
9am	Rice cooked 1/2 cup (60g), Vegetable soup 3 table spoons, Vergin coconut oil 1 table spon (5g) } Blend togeth c 200m wate
	chikken egg white (36g) 1
12 noon	Avacardo fresh blended c 200ml water.
2pm	Rice 1/2 cup (60g) Fish 1 piece 30g vegetable cooked c grevy 3 table spoons } Blend c 300 ml
	chicken 1 whole egg.
5pm	Banyana fresh blended c 150 ml water
7pm	Rice 1/2 cup 60g. Mixed vegetable soup 1/2 cup } Blendered 200ml.
	Fish 30g.

Figure 5.1. Diet plan documented in patient chart

Sub-theme: Oral diets prepared in bulk

People with tracheostomies who are on oral feeds are provided with diets that are prepared in bulk in regular consistencies. The nurses are expected to modify the feed to the recommended consistency by adding products like cereal or adding more water (described above), as recommended by the dietician (Gvt Dietitian), or in some cases requesting the diet clerks in the kitchens to use corn flour to thicken the food (Pvt. Dietitian). Diet standardisation and ensuring uniformity in the consistencies provided to the PWTs is seriously compromised when food is prepared in this way, and the implications have already been described above.

Theme IV: Poor observation of aspiration precautions

Head positioning plays a vital role in the prevention of aspiration pneumonia (Keeley, 2007) and in minimising the risk of aspiration; PWTs should be given enteral feeding propped up at 30° or more and should be kept propped up for 30 min after feeding (Stroud et al., 2003).It was observed that PWTs were noted to have flat beds that do not have the ability to elevate the head or prop up PWTs at appropriate angles. Nurses were seen to administer enteral feeding via nasogastric tubes with the PWT lying in a supine position in the bed (Observation of Gvt PWT

5). The dietitian in the government sector described instances in which nurses do not invest adequate time in feeding PWTs appropriately and are unaware of the impact of feeding at the wrong angles have on the risk of aspiration (Gvt Dietitian; Pvt. Dietitian).

Speech language pathologists report that they do not get involved in the management of swallowing in PWTs, and the doctors and nurses generally decide whether a patient's conditionallows oral feeding (Senior Gvt SLP; Gvt Nurse 1). As observed, PWTs are on regular diets and thin liquids despite having thick productive secretions and coughing extensively during oral feeding. These PWTs are seen to drink water from a bottle with head titled back, followed by excessive coughing (Observation Gvt PWTs 1,3 and 4). Some patients report that since they realise it is difficult for them to swallow and due to their excessive coughing when eating or drinking, they on their own have altered their feeding habits to drink in smaller sips or soften their food (Gvt PWTs 1 and 4). The UNCGs reported that the PWTs have had several episodes of choking and clear instances of food particles and water coming out of the tracheostomy; but despite these problems no diet modifications were suggested by any of the professionals (Pvt.UNCGs 1 and 2). One UNCG reported searching the Internet and finding that commercial available thickeners can be used to thicken food,subsequently getting such a thickener from a friend living overseas (Pvt. UNCG 1). She used it to prepare her son's food hoping that would reduce chest infections.

From these findings, it is evident that a lack of resources (e.g. thickeners, hospital beds with head inclination, food pumps and prepared scientific formulas for enteral feeding) is confounded by a lack of specific roles and specialised knowledge and skill among professionals, leading to suboptimal practices affecting clinical outcomes.

Category 3: Processes involved in the management of communication

The presence of a tracheostomy alters the anatomy, such that inhalation and exhalation take place through the tracheostomy tube, with no air flow through the vocal folds and upper airway, disrupting the ability of a PWT to produce voice or speech. In PWTs with intact cognitive skills and absence of laryngeal pathology, determined by usually by a SLP assessment (Dawson. 2014), the goal for these patients is to restore verbal communication by means of cuff deflation or the use of a speaking valve or a fenestrated tracheostomy tube (Hess, 2005). In patients who are not candidates for any of these methods, alternative methods of communication,including the use of gestures, eye blinks, communication boards or in some instances high-tech devices such as the Dynavox eye gaze device maybe recommended to restore communication (Rose et al., 2015). Recently,researchers have drawn attention to newer techniques,among them above cuff vocalisation (ACV), which involves directing a retrograde flow of gas via a subglottic tube (McGrath, Lynch, Wilson, Nicholson,& Wallace, 2016).

Data from interviews, document reviews and observations indicate that communication impairments in PWTs are not clearly understood,so there is no definite process for assessing and managing these difficulties in this patient population studied within the Sri Lankan health sector.

Theme I: Poorly defined processes for assessment of people with tracheostomies

As described, the assessment of a people with tracheostomies (PWTs) for possible methods to restore communication is usually completed by an SLP and involves cuff deflation trials, speaking valve trials or assessment for an alternative and augmentative method to restore communication. None of the professionals interviewed described any of these processes in assessing PWTs, and during the observations of the PWTs or the document reviews, there was no evidence of formal assessments of PWTs' communication abilities.

Sub-theme: Misconceptions about communication impairments in people with tracheostomies

As discussed, statements like the ones below indicate misconceptions among professionals regarding communication impairment associated with people with tracheostomies (PWTs). A senior SLP described communication assessment as follows:‘Assessment of PWT starts with assessment of comprehension, severity of condition and then trachea’ (Senior Gvt SLP). Use of terms like ‘assess trachea’ and general terms like ‘assess severity of condition’ indicate poor knowledge among professionals regarding assessment of communication in PWTs.

Gul and Karadag’s (2010) Turkey-based studyfocussed on the quality of life of PWTs, but they also reported onlaryngectomy rehabilitation (oesophageal speech and voice prosthesis), indicating that these two patient populations were considered a single cohort. This grouping indicates that practices related to the management of PWTs are not clearly understood or defined in certain countries. Similar findings were evident in Sri Lanka, with the SLPs referring to laryngectomee rehabilitation and pre-operative counselling when discussing communication management among PWTs (Senior Gvt SLP 1).

The doctors report that,post-tracheostomy, it is the nurses who handle the PWTs,and the initially PWTs communicate in ‘whatever way they can’,while later the nurses ‘deflate the cuff and see if patient is alright’, then they leave it that way (Gvt ENT Surgeon 1; Gvt ENT Registrars 1 and 2). The medical officers in the private hospital reported that ‘We with the ENT doctor try the valve and see.’ These descriptions clearly indicate that communication assessments are not conducted in a consistent mannerand vary within and between settings in Sri Lanka.

Theme II: Unconventional methods to facilitate communication

The methods used in the hospitals studied in Sri Lanka to restore the ability to communicate or speak for PWTs differ from the processes described in literature.

Sub-theme: Finger occlusion instead of speaking valves

People with tracheostomies seem to communicate using finger occlusion (Gvt PWTs 1 and 2), a practice described in the literature but cautioned against because of the associated increase in risk of infection (Hauck 1999; Woodrow, 2002).Speaking valves, though available on the market (Pvt. Procurement Officer), are not commonly trialled (Gvt Anaesthetist; Pvt.UNCG 2), and if this option is considered, it is trialled on an *adhoc* basis by the medical doctors, mainly in the private context (Pvt. Medical Officers 1 and 2).

Sub-theme: Capping of tracheostomy done at the discretion of people with tracheostomies

People with tracheostomies (PWTs) are discharged on double lumen tracheostomy tubes and provided with a box that contains a tracheostomy cap. The patients are advised by professionals to try using the cap in the box, and if they can breathe without difficulty, then to continue using it as a method to facilitate speech (Gvt Registrar 2; Gvt PWT 4; Gvt Observation 4). Capping of the tracheostomy involves closing off the tube completely; resulting in the patient breathing regularly through the upper airway. Generally, this treatment requires the patient to be assessed by a multidisciplinary team of physicians, respiratory therapists (RTs) and an SLP, based on a set of predetermined criteria (Pandian et al., 2014). As is evident in Sri Lanka, however, the decision to try capping is left to the patient,which is not ideal practice, as it can lead compromised patient safety and poor clinical outcomes.

Sub-theme: Alternative modes of communication provided in adhoc *manner*

During the observation of PWTs, it was noted that family members try different means of communicating with PWTs and are often frustrated when communication breakdown occurs. Nursing staff on an *adhoc*, needs-driven basis provide PWTs with alternative means of communication, and there was no provision for a patient to request for help, as there was no call

bell available (Observation Gvt PWTs 3 and 5). These observations were supported by Gvt PWTs 3 and 5, who described the difficulty they had in explaining their needs and raised instances in which they would desperately wait for the nurses to look towards them to gain their attention. Similar frustrations with communication were also reported by the UNCGs (Pvt.UNCG 2). In the private sector, UNCGs were seen to seek expertise from overseas to improve the communication abilities of PWTs and secure high-tech devices (Pvt.UNCG1).

Category 4: Policies and guidelines for practices related to tracheostomy

Several countries have developed policies, protocols, position papers or hospital-specific guidelines to establish standardised processes related to swallowing and communication in PWTs and to ensure positive patient outcomes (Rolls et al., 2012; Speech Pathology Australia, 2005; The New Zealand Speech/language Therapists' Association, 2015).

Theme I: No specific guidelines for swallowing and communication management

The first tracheostomy-related guideline in Sri Lanka was developed and published by the Faculty of Critical Care in 2013. This guideline contained general instructions on oral feeding and speaking-valve use (Faculty of Critical Care, 2013). The anaesthetist who was part of the team that developed these guidelines said it is hard to establish a set protocol, however, due to variations in the resources available to different health care centres, but the aim of formulating the guidelines was to provide recommendations for good practice. She also mentioned that currently practices are never audited based on these guidelines. Other professionals in both government and the private sector were unaware of such a guideline, despite it being published online and freely accessible through the Internet. The professionals interviewed in both sectors said that no protocols specific to tracheostomy management were available in their hospitals, but agreed they would benefit from such protocol.(Pvt. Medical Officer 1; Pvt. Physician 1). In the

government sector,one professional (Gvt ENT 2) spoke of protocols being developed several years ago for ISO certification and was convinced that those protocols are still followed. He was, however, unsure of how or where to access these protocols.

Thus, it is evident that practices managing swallowing and communication in PWTs are not based on set protocols, and most processes occur on an *ad hoc* basis. This trend results in variations in practice and compromises patient outcomes (Ritchie, Spencer, & O'Connor, 2016). While variation in the availability of resources across various health care settings may be a concern for implementing protocols across those settings, it may not hinder hospital-specific protocols and guidelines that would improve consistency in practices and enable the efficient use of existing resources and better health outcomes (Colandrea & Eckardt, 2016).

Category 5: Outcomes of practices

Results related to the outcomes of the Sri Lankan health care practices that govern swallowing and communication management are reported as organisation-related outcomes, health-related outcomes and patient expectations, and satisfaction of the services they receive, as an outcome of the existing practices

Theme I: Organisation-related outcomes—most people with tracheostomies are managed in the ear, nose and throat wards

As described by the medical professionals, it is mainly the nurses in the ear, nose and throat (ENT) wards who are most familiar with tracheostomy management,so critically ill patients or people with tracheostomies (PWTs) with other comorbidities are transferred to the ENT ward prematurely or inappropriately (Gvt Senior Registrars 1 and 2). This practiceindicates that most wards are not well equipped with the resources, knowledge and skill to manage PWTs. In the private sector, the doctors report that tracheostomised patients are rare, and generally

managed only in the ICU. They further report that the nurses in the private sector generally learn to manage these patients on the job and are not formally trained during nursing education (Pvt. Physician,Pvt. Medical Officer 1 and Pvt. Head Nurse).

Theme II: Health-related outcomes—infrequent investigation of aspiration pneumonia

Document reviews did not reveal the diagnosis of aspiration pneumonia in any of the PWTs, despite patients reporting history of chest infections (Document Review for Gvt PWTs 1 and 3). It appears aspiration is not investigated as a probable cause for chest infections in PWTs. Many of the PWTs observed coughed thick whitish, yellow secretions out of the tracheostomy tube (Observation of Gvt PWTs 1, 3 and 4). The professionals confirmed that a diagnosis of aspiration pneumonia is uncommon in PWTs, describing PWTs who come with blocked tubes and excessive secretions which could be due to several causes, maybe even aspiration pneumonia; but this diagnosis is not investigated further (Gvt ENT Consultant 1; Senior Gvt Registrar 1).

Theme III: Patient expectations and outcomes—varying levels of satisfaction

In the government hospital, where services are offered free of cost, the patients and their caregivers expressed satisfaction in the services they receive, despite having health-related concerns (Gvt PWTs 1, 2 and 3). Similarly, the UNCGs of these PWTs also expressed trust in the professionals responsible for these patients and reported being happy with the services they receive (Gvt UNCGs 1,2, and 3). However, in the private sector, where people pay for the services they receive, UNCGs expressed low satisfaction and described instances in which they looked for treatment options overseas. The mother of a PWT said,‘No one explained the situation properly. It was emotionally very hard to accept the tracheostomy, and we didn’t know why it

was needed and for how long. I am not satisfied with the treatment. I would like to take him overseas but can't afford the treatment' (Pvt.UNCG 2).

These findings were consistent with studies done on patient satisfaction in Sri Lanka (Malik, 2013) and other majority world settings (Jalil, Zakar, Zakar,& Fischer, 2017), where people receiving free public health reported high satisfaction despite several unexplained health concerns, poor engagement in their care and other obvious challenges.

Practices in Sri Lanka, like other majority world countries, are confounded by lack of capital resources for swallowing- and communication-management (Garrubba et al., 2009; Hyland &Lee, 2003), and not only due to the fiscal burden these resources impose on hospital and government budgets, but also due to the lack of specialised knowledge among professionals.

Conclusion

To the knowledge of the authors, following an extensive review of the extant literature, this study is the first to describe the practices related to swallowing- and communication-management in PWTs in Sri Lanka, a majority world country.Data from this study highlight significant aspects of Sri Lankan health care that impacts swallowing- and communication-management among PWTs. These practices are characterised by inadequate capital resources, poor utilisation of existing resources, inconsistent processes and challenges with the inadequate knowledge and skills of professionals. Similar findings regarding health care practices in other patient populations have been reported in other majority world contexts (Robertson, Dehart, Tolle & Heckerman, 2009; Ritchie, et al., 2016).

Improvisation to cope with inadequate resources is reported in majority world contexts (Fournier, Mill & Walusimbi, 2007), and similarly in Sri Lanka, professionals are seen to

improvise to find methods to better manage swallowing- and communication-difficulties in PWTs amidst resource constraints.

In addition to these challenges of limited resources, knowledge and skill, the participants described the prevalence of a medical model approach to tracheostomy management, resulting in specialised allied health services like speech language pathology and dietetics that are underutilised although they are available in Sri Lanka. Similar findings have been reported in other contexts in relation to PWTs (Wang, Lu & Chang, 2014) and other clinical populations (Aveling, Kayonga, Nega,& Dixon-Woods, 2015). Thus, in Sri Lanka, the medical model inhibits a multidisciplinary approach to the management of PWTs and has considerable influence on current practice patterns, leading to *ad hoc* practices that eventually affect patient-related outcomes.

5.3. Summary of the chapter

Inthis chapter, which mainly consists of manuscript two, entitled ‘Management of Swallowing and Communication in PWTs: The Case of Sri Lanka’, I have described in detail all aspects of practices involved in the screening, assessment and intervention of swallowing and communication difficulties in PWTs within the Sri Lankan health sector. The findings indicate that these practices are characterised by inconsistent processes, a lack of resources (including trained professionals) and hierarchical professional dynamics that affect clinical outcomes.

What follows, in Chapter 6, is a critical appraisal of the practices in Sri Lanka in relation to practices reported in the literature from other parts of the world. This analysis is undertaken as a direct response to the third objective of my study, and the results of this critical appraisal lead me to think about the nature of professional relationships and the impact that power within these

relationships can have on the overall efficiency of healthcare practices. This is one of the main findings of my thesis, and in Chapter 7 I further explore and explain the influence of power dynamics on the health practices for managing swallowing and communication in PWTs in Sri Lanka, the last chapter contributing the results and discussion of my thesis (as collected in Chapter 8).

Chapter 6

Results and Discussion

Part Two:Critical Dialogue Between Practices in Sri Lanka and Published Research on Practices Around the World—ACase of Comparing Apples to Oranges?

6.1 Introduction

In this chapter, I present results related to the third objective of the study: to critically appraise the practices related to swallowing and communication management in people with tracheostomies (PWTs) in majority world contexts as compared to the minority world.This objective is represented in the conceptual framework as a double-headed arrow between Sri Lankan practices and global practices (see Figure 6.1). The components of this framework are described in detail in chapter 3.3.

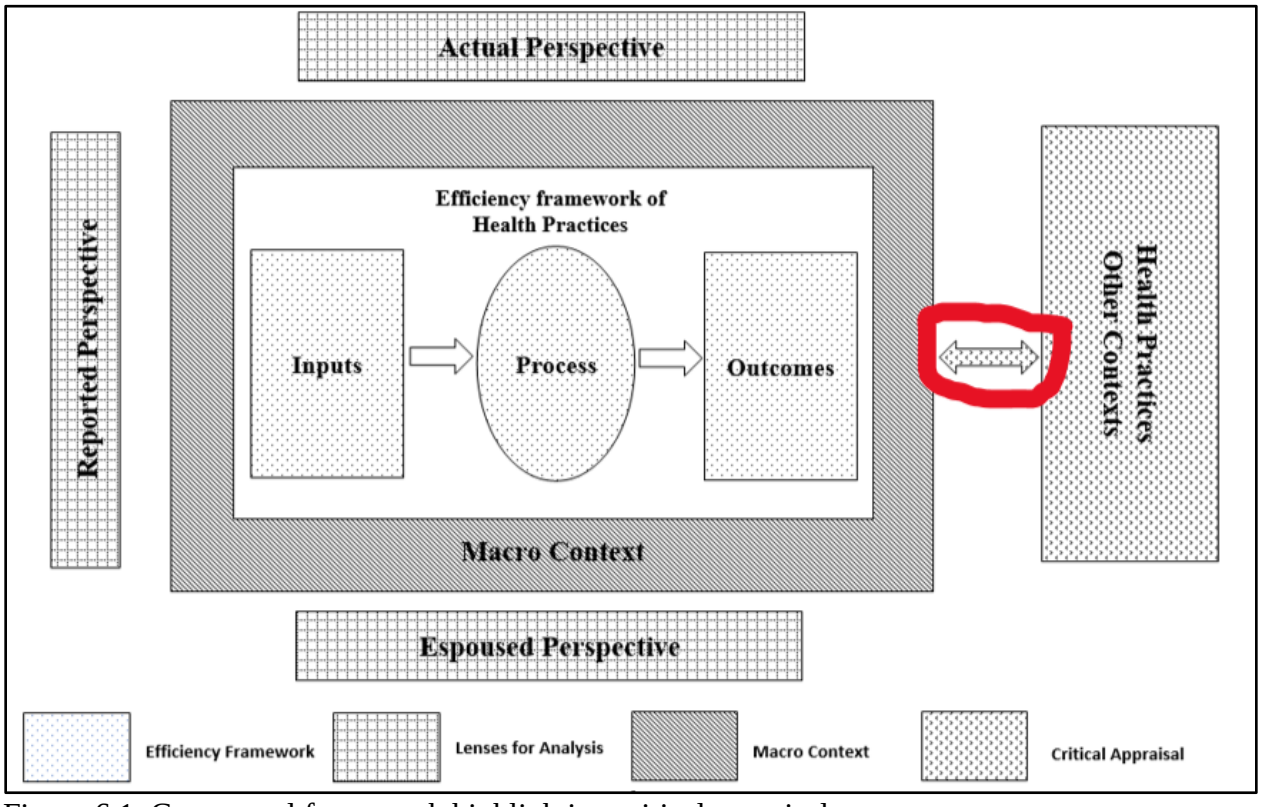


Figure 6.1. Conceptual framework highlighting critical appraisal

The first step in this study was to review all published literature on the subject, thereby presenting a global perspective, with descriptions of practices from countries across the world. During the review, it was evident that most of the published literature described practices in minority world settings; countries such as the United States, the United Kingdom and Australia, had the most publications describing practices that manage swallowing and communication in PWTs. Few studies from majority world settings like South Africa, India, Turkey and Taiwan described their practices, and as summarised in Chapter 2, these practices varied widely within and between settings.

The literature review was followed by an in-depth account of the practices in Sri Lanka, and this chapter serves offers critical dialogue between Sri Lankan practices and practices across the globe. Considering health care practices are highly-context dependent, one may argue that this is a superfluous step, just as it would be to compare apples to oranges, as the differences in practices will be too obvious. However, as will be evident in this section, this exercise will highlight the strengths and weaknesses of the present system and identify areas within the existing processes that could be modified through simple practical changes, thereby enhancing efficiency and improving outcomes.

As described in Chapter 4, I used the data sheet in Appendix 8 to analyse the findings related to swallowing- and communication-management in Sri Lanka (described in Chapter 5), in relation to practices reported in the literature from various contexts across the globe. In this chapter, I summarise the findings of this critical appraisal and discuss the following key findings:

1. processes involved in swallowing-management in PWTs,
2. processes involved in the management of communication in PWTs, and
3. other significant disparities in practice patterns.

I use the term ‘global practices’ to refer to practices published in various countries across the world. To make this comparison explicit, I have listed all the studies describing swallowing and communication management that have been reviewed as part of the literature review in Table 6.1 below. The subsequent tables in this chapter comparing global practices to practices in Sri Lanka will refer to Table 6.1 to link findings to the specific context in which the practice has been described.

6.2 Processes involved in swallowing-management in people with tracheostomies

Impaired swallowing or dysphagia is a disorder experienced by most people with tracheostomies (PWTs) (Joshi & Kacker, 2016), leading to increased risk of aspiration (Epstein, 2005), specifically an increased risk of silent aspiration (Elpern, Scorr, Petro,& Ries, 1994), which could result in aspiration pneumonia and thereby increase the risk of morbidity and mortality in PWTs (DeLegge, 2002). From the findings in Sri Lanka, it appears that the doctors do not investigate the possibility of PWTs having aspiration pneumonia, despite them presenting with typical signs of aspiration, like excessive coughing while eating, productive cough with thick secretions, difficulty breathing and so forth (Johnson & Hirsch, 2003; Marik, 2001).Considering the implications of aspiration pneumonia in PWTs, this condition could have staggering impacts on the outcomes of the practices related to swallowing-management in PWTs. The published research reveals that across the world, there are considerable variations in practices managing swallowing in PWTs (Garuti, et al., 2014), but certain practices for screening, assessment and intervention of dysphagia, in this patient population have been consistently reported across various contexts.

Table 6.1. Summary of studies reviewed

No:	Reference
Australia	
1.	Hemsley, B., Sigafoos, J., Balandin, S., Forbes, R., Taylor, C., Green, V. A., & Parmenter, T. (2001). Nursing the patient with severe communication impairment.*Journal of Advanced Nursing*,*35*(6), 827–835.
2.	Ward, E., Agius, E., Solley, M., Cornwell, P., & Jones, C. (2008). Preparation, clinical support, and confidence of speech-language pathologists managing clients with a tracheostomy in Australia.*American Journal of Speech-Language Pathology*,*17*(3), 265–276.
3.	MacBean, N., Ward, E., Murdoch, B., Cahill, L., Solley, M., Geraghty, T., & Hukins, C. (2009). Optimizing speech production in the ventilator- assisted individual following cervical spinal cord injury: a preliminary investigation.*International Journal of Language &Communication Disorders*,*44*(3), 382–393.
4.	Clayton, N., Kennedy, P., & Maitz, P. (2010). The severe burns patient with tracheostomy: implications for management of dysphagia, dysphonia and laryngotracheal pathology.*Burns*,*36*(6), 850–855.
5.	Freeman-Sanderson, A., Togher, L., Phipps, P., & Elkins, M. (2011). A clinical audit of the management of patients with a tracheostomy in an Australian tertiary hospital intensive care unit: Focus on speech-language pathology.*International Journal of Speech-Language Pathology*,*13*(6), 518–525.
6.	Sutt, A. L., Cornwell, P., Mullany, D., Kinneally, T., & Fraser, J. F. (2015). The use of tracheostomy speaking valves in mechanically ventilated patients results in improved communication and does not prolong ventilation time in cardiothoracic intensive care unit patients.*Journal of Critical Care*,*30*(3), 491–494.
7.	Pryor, L., Ward, E., Cornwell, P., O'Connor, S., & Chapman, M. (2016). Patterns of return to oral intake and decannulation post- tracheostomy across clinical populations in an acute inpatient setting.*International Journal of Language & Communication Disorders*,*51*(5), 556–567.
Belgium	
8.	Vandenbruaene, C., Dick, C., & Vauterin, T. (2008). Dysphagia management in tracheostomy patients: introduction of a protocol.*B-ENT*,*2008i*, 77–82.
Brazil	
9.	Zanata, I. D. L., Santos, R. S., & Hirata, G. C. (2014). Tracheal decannulation protocol in patients affected by traumatic brain injury.*International Archives of Otorhinolaryngology*,*18*(2), 108–114.
10.	Rodrigues, K. A., Machado, F. R., Chiari, B. M., Rosseti, H. B., Lorenzon, P., & Gonçalves, M. I. R. (2015). Swallowing rehabilitation of dysphagic tracheostomized patients under mechanical ventilation in intensive care units: a feasibility study.*Revista Brasileira de terapia intensiva*,*27*(1), 64–71.
Canada	

11.	De Mestral, C., Iqbal, S., Fong, N., LeBlanc, J., Fata, P., Razek, T., & Khwaja, K. (2011). Impact of a specialized multidisciplinary tracheostomy team on tracheostomy care in critically ill patients.*Canadian Journal of Surgery*,*54*(3), 167-172.
12.	Rose, L., Fowler, R. A., Fan, E., Fraser, I., Leasa, D., Mawdsley, C.,& Rubenfeld, G. (2015). Prolonged mechanical ventilation in Canadian intensive care units: a national survey.*Journal of Critical Care*,*30*(1), 25–31.
Germany	
13.	Warnecke, T., Suntrup, S., Teismann, I. K., Hamacher, C., Oelenberg, S., & Dziewas, R. (2013). Standardized endoscopic swallowing evaluation for tracheostomy decannulation in critically ill neurologic patients.*Critical care medicine*,*41*(7), 1728–1732.
Italy	
14.	Garuti, G., Reverberi, C., Briganti, A., Massobrio, M., Lombardi, F., & Lusuardi, M. (2014). Swallowing disorders in tracheostomised patients: a multidisciplinary/multiprofessional approach in decannulation protocols.*Multidisciplinary Respiratory Medicine*,*9*(36), 1-10.
15.	Ceriana, P., Carlucci, A., Schreiber, A., Fracchia, C., Cazzani, C., Dichiarante, M., ... Nava, S. (2015). Changes of swallowing function after tracheostomy: a videofluoroscopy study.*Minerva Anesthesiologic*,*81*(4), 389–397.
India	
16.	Vandana, V. P., & Suri, N. (2008). Speech and swallowing rehabilitation following burns injury: Role of Speech Pathologists in the multidisciplinary team.*Official publication of the National Academy of Burns-India*,*6*(7), 8.
Saudi Arabia	
17.	Alhashemi, H. H. (2010). Dysphagia in severe traumatic brain injury.*Neurosciences (Riyadh, Saudi Arabia)*,*15*(4), 231–236.
South Africa	
18.	Hoosen, A. (2012).*Bridging the gap: establishing the need for a dysphagia training programme for nurses and speech-language therapists working with tracheostomised patients in critical care in government hospitals in Gauteng* (Doctoral dissertation). Retrieved from: http://wiredspace.wits.ac.za/bitstream/handle/10539/11840/Azra%20Hoosen%20Final%20Submission%20post%20corrections%20June%202012.pdf?sequence=2
Spain	
19.	Alvo, A., & Olavarría, C. (2014). Decannulation and assessment of deglutition in the tracheostomized patient in non-neurocritical intensive care.*Acta Otorrinolaringologica (English Edition)*,*65*(2), 114–119.
Taiwan	
20.	Wang, Y. H., Lu, C. J., & Chang, K. H. (2014). Impact of Knowledge and Behavior of Medical Personnel Towards Speech Therapy for Tracheostomized Patients.*Journal of Experimental & Clinical Medicine*,*6*(6), 217–221.
Turkey	
21.	Gul, N., D., & Karadag, A. (2010). An evaluation of the quality of life in patients with tracheostomy.*Pakistan Journal of*

	Medical Sciences,*26*(2), 444–449.
United Kingdom	
22.	Woodrow, P. (2002). Managing patients with a tracheostomy in acute care.*Nursing Standard*,*16*(44), 39–46.
23.	Arora, A., Hettige, R., Ifeacho, S., & Narula, A. (2008). Driving standards in tracheostomy care: A preliminary communication of the St Mary's ENT- led multi-disciplinary team approach. *Clinical Otolaryngology*, *33*(6), 596-599.
24.	Batty, S. (2009). Communication, swallowing and feeding in the intensive care unit patient.*Nursing in critical care*,*14*(4), 175–179.
25.	Cetto, R., Arora, A., Hettige, R., Nel, M., Benjamin, L., Gomez, C. M. H., ... Narula, A. A. (2011). Improving tracheostomy care: a prospective study of the multidisciplinary approach.*Clinical Otolaryngology*,*36*(5), 482–488.
26.	Mullender, J.L., Wheatley E. C., &Nethercott D. R. (2014). Oral Feed for Patients with a Tracheostomy: Balancing Risks and Benefits.*Journal of the Intensive Care Society*, *15*(4), 336–339.
27.	Dawson, D. (2014). Essential principles: tracheostomy care in the adult patient.*Nursing in Critical Care*,*19*(2), 63–72.
28.	McGrath, B. A., & Wallace, S. (2014). The UK National Tracheostomy Safety Project and the role of speech and language therapists.*Current opinion in otolaryngology & head and neck surgery*,*22*(3), 181–187.
29.	McGrath, B., Lynch, J., Wilson, M., Nicholson, L., & Wallace, S. (2016). Above cuff vocalisation: A novel technique for communication in the ventilator-dependent tracheostomy patient.*Journal of the Intensive Care Society*,*17*(1), 19–26.
30.	McRae, J., Fox, R., & Morgan, S. (2015). Feeding patients with tracheostomies.*Journal of the Intensive Care Society*,*16*(2), 180-180.
31.	Ginnelly, A., & Greenwood, N. (2016). Screening adult patients with a tracheostomy tube for dysphagia: a mixed- methods study of practice in the UK.*International Journal of Language &Communication Disorders*,*51*(3), 285–295.
USA	
32.	Hauck, K. A. (1999). Communication and swallowing issues in tracheostomized/ventilator-dependent geriatric patients.*Topics in Geriatric Rehabilitation*,*15*(2), 56–70.
33.	Goldsmith, T. (2000). Evaluation and treatment of swallowing disorders following endotracheal intubation and tracheostomy.*International Anaesthesiology Clinics*,*38*(3), 219–242.
34.	Happ, M. (2001). Communicating with mechanically ventilated patients: State of the science. AACN Clinical Issues, 12, 247 – 258.
35.	Leder, S. B. (2002). Incidence and type of aspiration in acute care patients requiring mechanical ventilation via a new tracheotomy.*CHEST Journal*,*122*(5), 1721–1726.
36.	Davis, L. A., & Stanton, S. T. (2004). Characteristics of dysphagia in elderly patients requiring mechanical ventilation.*Dysphagia*,*19*(1), 7–14.
37.	Donzelli, J., Brady, S., Wesling, M., & Theisen, M. (2006). Secretions, occlusion status, and swallowing in patients with a tracheotomy tube: A descriptive study.*Ear, Nose &Throat Journal*,*85*(12), 831-834.

38.	Tanner, E. (2006). Lions and tigers and tracheostomies, oh my!!!.*Oncology Nursing Forum, 33*(2), 483
39.	Windhorst, C., Harth, R., & Wagoner, C. (2009). Patients requiring tracheostomy and mechanical ventilation: A model for interdisciplinary decision-making.*The ASHA Leader,14*(1), 10–13.
40.	Grossbach, I., Stranberg, S., & Chlan, L. (2010). Promoting effective communication for patients receiving mechanical ventilation.*Critical Care Nurse,31*(3), 46-60.
41.	Happ, M. B., Baumann, B. M., Sawicki, J., Tate, J. A., George, E. L., & Barnato, A. E. (2010). SPEACS-2: intensive care unit 'communication rounds' with speech language pathology.*Geriatric Nursing,31*(3), 170–177.
42.	O'Connor, H. H., & White, A. C. (2010). Tracheostomy decannulation.*Respiratory Care, 55*(8), 1076–1081.
43.	Seckel, M. A., & Schulenburg, K. (2011). Eating While Receiving Mechanical Ventilation.*Critical Care Nurse,31*(4), 95–97.
44.	Chaw, E., Shem, K., Castillo, K., Wong, S. L., & Chang, J. (2012). Dysphagia and associated respiratory considerations in cervical spinal cord injury.*Topics in Spinal Cord Injury Rehabilitation,18*(4), 291–299.
45.	Fisher, D. F., Kondili, D., Williams, J., Hess, D. R., Bittner, E. A., & Schmidt, U. H. (2013). Tracheostomy tube change before day 7 is associated with earlier use of speaking valve and earlier oral intake.*Respiratory care,58*(2), 257–263.
46.	Baumgartner, C. A., Bewyer, E., & Bruner, D. (2008). Management of Communication and Swallowing in Intensive Care The Role of the Speech Pathologist. *AACN Advanced Critical Care, 19*(4), 433–443.
47.	Lohmeier, H. L., & Hoit, J. D. (2003). Ventilator-supported communication: a survey of ventilator users.*Journal of Medical Speech-Language Pathology,11*(1), 61–73.

6.2.1 Processes related to swallow screening in people with tracheostomies

The use of the blue dye tests—namely the Evan's Blue Dye Test (EBDT)(Cameron, Reynolds,& Zuidema, 1973) for detecting aspiration of oral secretions and the Modified Evan's Blue Dye Test (MEBDT) (Thompson-Henry & Braddock, 1995) for detecting aspiration of food or liquids—is frequent practice among various health care practices across the globe.Practices in the US, the UK, Belgium, Brazil, Canada, Germany, Italy, Saudi Arabiaand South Africa all report the use of this method to screen people with tracheostomies (PWTs) for possible aspiration; the studies describing these practices are listed in Table 6.2.Even though the reliability of the blue dye tests in detecting aspiration has always been a concern (Brady, Hildner,& Hutchins,1999), it remains a practical and inexpensive bedside procedure for the screening of swallow functioning in PWTs (Belafsky, Blumenfeld, LePage,& Nahrstedt, 2013). In Sri Lanka, there is no evidence or reports of explicit screening procedures to detect aspiration, and considering that blue dye testsare inexpensive and requiring less skill than other methods for screening and resources to implement, there appears no reason why majority world countries like Sri Lanka do not incorporate blue dye tests into their practices in screening swallowing-difficulties in PWTs.

6.2.2 Processes related to assessment of swallowing

In Sri Lanka, as made evident in the previous chapter, the assessment of swallowing in PWTs is carried out in an *ad hoc* manner, with no straightforward evidence from the espoused, observed or reported data to indicate an organised approach to swallow assessments. Limited research describing these practices in other majority world contexts with countries like South Africahave reported practices to be inconsistent and varied in the assessment of swallow function in PWTs (Hoosen, 2012). In minority world contexts, however, studies describe organised and in

most casesprotocol-driven bedside or clinical swallow assessments, comprised of detailed case-history taking, oro-motor assessment with reflex testing or cranial nerve testing, or assessment of oral-nasal-pharyngeal secretions (followed by food trials if appropriate), and some practices described these processed to augmented by vital monitoring. In Table 6.2, the studies describing these practices are listed per country where the practice occurs. The interviewed speech language pathologists (SLPs) in Sri Lanka referred to bedside swallow assessments as manual assessments but failed to describe a standard procedure or the steps taken to assess swallowing in PWTs. The SLPs described the use of a stethoscope during the assessment of swallow, probably referring to cervical auscultation as a part of the swallow assessment in PWTs. Cervical auscultation is an assessment of the pharyngeal phase of swallowing, which involves listening to the sounds of swallowing with an amplifying instrument like a stethoscope in order to detect signs like gurgling or pooling of secretions (Borr, Hielscher-Fastabend, & Lücking, 2007). Interestingly, very few studies in other contexts have described the use of cervical auscultation to assess swallow function in PWTs. Furthermore, Garuti et al. (2014), in their review of swallowing disorders in tracheostomised populations, mention the use of cervical auscultation but specify that this technique is yet to be examined in terms of clinical trials.

Minority world contexts refer to instrumental assessments used conjunction with the clinical swallow evaluation in assessing swallowing in PWTs.Typically, the results of a bedside or clinical examination indicate whether further instrumental assessment is necessary and which instrumental assessment will be appropriate (Mathers-Schmidt & Kurlinski, 2003), and several minority world countries describe practices in which bedside clinical swallow evaluations are followed by instrumental assessments such as vidoeflouroscopy swallow studies (VFSSs) or fiberoptic endoscopic evaluation of swallow (FEES), or both. The studies describing the use of

these assessments are listed in Table 6.2. These instrumental assessments are considered gold standards for assessment of swallow function (Palmer & Drennan, 2000); however, considering they are resource intensive and require specialised training and skill, they are used prudently in most settings.

The most frequently used method to assess swallow function in PWTs described by the professionals in Sri Lanka is an instrumental assessment: either a fiberoptic laryngoscopy (FOL) or FEES. As evident from the findings of this study,these procedures are usually done by the ear, nose and throat (ENT) doctor in the operating room (OR) and not generally at bedside. Therefore, the resources utilised for swallow assessment are unwarranted, and considering Sri Lanka is a majority world context with resource constraints and financial burdens (O'Donnell, 2007), this practice can be deemed inefficient. Considering the available alternatives to resource-intensive instrumental assessments (e.g. bedside swallow assessment in conjunction with vital monitoring and cervical auscultation), the current practice can even be considered inefficient. Table 6.2 summarises the findings related to swallow screening and assessment in PWTs in Sri Lanka compared to practices in other global contexts.

Table 6.2. Global practices vs Sri Lankan practices related to swallow screening and assessment in People with Tracheostomies (PWTSs) (numbers correspond to the references in Table 6.1)

Process	Global	Sri Lankan
Screening	Blue dye tests widely used as a screening tool (Belgium, 8; Brazil, 10; Canada, 12; Germany, 13; Italy, 14; Saudi Arabia, 17; South Africa,18; UK, 24 & 26; and US, 33 & 43)	*Ad hoc* methods, no evidence or reports of the use of blue dye tests
Bedside assessment	Clinical swallow evaluation or bedside swallow evaluation described as standard procedures with an organised flow for the process;in some contexts, protocol-driven (Australia, 7; Brazil, 10; Canada, 12; Germany, 13; Italy, 14; Spain, 19; and US, 33, 36 & 44)	Referred to by speech therapists as manual assessment, but not described as a standard procedure
Cervical auscultation	Global literature does not explicitly describe this a method to detect aspiration in PWTs	SLPs describe use of a stethoscope to assess swallow function
Instrumental Assessment	VFSS and FEES described widely as golden tools for assessing swallow function in PWTs; however, these assessments are typically done only if indicated by a bedside assessment (Australia, 7; Belgium, 8; Brazil, 10; Germany, 13; Italy, 14; Saudi Arabia, 17; Spain, 19; UK, 26 & 30; US, 32,33,35,36,39 and 43).	FOL or FEES done in operating rooms more commonly than bedside swallow assessments

6.2.3 Intervention for swallowing disorders in people with tracheostomies

The primary goal in intervention for swallowing disorders is to determine optimal feeding methods to maximise swallow safety while minimising the risk of pulmonary complications and ensuring adequate nutrition and hydration. Intervention to alleviate swallowing-difficulties may include rehabilitative therapy (restoration of normal swallow function through techniques like swallow manoeuvres, thermal stimulation and oromotor therapy), compensatory strategies (like

diet modification and modifications in head positioning) or a combination of these two approaches (Speyer, Baijens, Heijnen,& Zwijnenberg, 2010). Practices in various countries across the world use these techniques with people with tracheostomies (PWTs) to remediate swallowing-difficulties in intensive care units (ICUs) (Rodrigues et al.,2015); wards (Alhashemi, 2010; Alva & Olavarria, 2014; Clayton et al., 2010; Seckel & Schulenburg, 2011; Vandana & Suri, 2008; Vandenbruaene et al., 2008) and rehabilitation settings (Ceriana et al.,2015; Hauck, 1999). In addition to these approaches,for certain settings theplacement of a one-way speaking valve has been described as a technique to improve swallow function and secretion management. Studies in many of these countries, especially the UK, described dual feeding protocols where patients on enteral feeds had intermittent oral feeding. Global practices related to the management of swallowing in PWTs as per the context in which the study is reported are listed and compared to Sri Lankan practices in Table 6.3.

Investigating the methods used for swallow intervention in PWTs, I could see that the most commonly reported and documented method was diet modification and the use of exclusive enteral feeds (not dual feeding). There was no reported or observed evidence of the use of other rehabilitative and compensatory strategies or the use of speaking valves in Sri Lanka,as in practices described in published literature in other contexts across the globe. While minority world countries reported the use of commercially available food thickeners (Bridget, 2014; Murray, Doeltgen, Miller,& Scholten 2014), developing countries like Sri Lanka do not have broad access to commercial food thickeners (Zargaraan, Rastmanesh, Fadavi, Zayeri,& Mohammadifar, 2013), and as described by the professionals in Sri Lanka, they find their own innovative means of thickening fluids (e.g. using cereals or changing the thickness of the rice porridge by adding water or simply overcooking it). While these methods may not be ideal in

terms of achieving the appropriate consistency in a consistent manner and ensuring adequate fluid intake for the patients, they represent is one way of managingswallowing-difficulties in PWTs and overcoming resource constrains in a majority world context.

The use of the other rehabilitative and compensatory strategies widely described in the literature to manage PWTs are not resource-intensive, however, and are generally carried out by SLPs who are trained in dysphagia intervention (Royal College of Speech and Language Therapists, 2014; Speech Pathology Australia, 2005). These methods to manage swallowing disorders in PWTs were neither reported nor observed in Sri Lanka, and the SLPs in Sri Lanka reported that they have limited involvement in the management of PWTs, as this patient population is predominately managed by the ENT doctors.Table 6.3 outlines and compares the Sri Lankan practices related to swallow intervention in PWTs with practices in other contexts, as reported in literature.

Table 6.3. Global practices vs Sri Lankan practices related to swallow intervention in People with Tracheostomies (PWTSs) (numbers correspond to the references in Table 6.1)

Practice pattern for managing swallowing disorders in PWTs	Global	Sri Lankan
Diet modification	Described widely in all settings. Use of commercial food thickener in minority world settings (Australia, 4; Belgium, 8; Italy, 14; India, 16 and US 32,36,37,44 & 45)	Reported in Sri Lanka No commercial food thickener Innovative methods to thicken liquids
Rehabilitative techniques	Use of techniques like swallow maneuverers, thermal stimulation and oro-motor therapy (Australia, 4; Belgium, 8; Brazil, 10; Italy, 15; India, 16; Spain, 19; and US, 32, 36 & 43)	Rehabilitative techniques not reported or observed in Sri Lanka
Use of speaking valve	Speaking valves used to improve swallow function in certain contexts (Belgium, 8; Brazil, 10; Italy, 15 and US 32, 39, 44 & 45)	No evidence of the use of speaking valve for swallow remediation
Enteral feeding	Dual feeding (enteral and oral feeding) considered for suitable candidates (UK, 22, 24 & 26; and US, 37 & 44).	Exclusive oral or exclusive enteral feeding No reports of dual feeding
SLPs role	SLPs identified as professionals are trained in dysphagia intervention Treatment of swallowing disorders in minority word settings carried out by SLPs (Australia, 5; Belgium, 8; UK, 28, 30, 31; and US,33, 36 & 44)	SLPs don't assume active role in swallow remediation in PWTs

6.3 Processes involved in management of communication difficulties in people with tracheostomies

A review of published literature in various contexts around the globe reveals that management of communication in people with tracheostomies (PWTs) has evolved over the years, and presently in many minority world settings there are well-defined processes in place for communication assessment and intervention. These studies have been mainly published in minority world settings, and the little research published in majority world settings does not describe the processes of communication management in PWTs in detail (India, Vandana,& Suri, 2008; Taiwan, Wang et al., 2014).

6.3.1 Assessment of communication needs in people with tracheostomies

The assessment of communication described in the literature involves communication screening followed by an assessment of secretions and cuff deflation trials. If cuff deflation is well tolerated, the PWT is trailed on a one-way speaking valve followed by articulation and voice assessments. For those patients who do not tolerate speaking valve trials, assessment for a suitable alterative and augmentative method to achieve communication is described. In most of these settings, SLPs work with a multidisciplinary team of respiratory therapists (RTs), physiotherapists and physicians to conduct cuff deflation, along with speaking valve and comprehensive alternative augmentative communication (AAC) trials. Studies describing these practices in various global contexts are listed in Table 6.4.

In the Sri Lankan hospitals chosen for this study, no formal or planned assessments of communication were observed or reported in people with tracheostomies (PWTs). The doctors describe cuff deflation to be done for all patients within 24 hrs, usually in 5 min intervals. In the

focus group, the professionals discussed decannulation and described cuff deflation as a part of this process, but did not refer to cuff deflation when discussing communication in PWTs.

‘And we deflate the cuff for five minutes hourly. Because there can be stenosis’ (Senior Gvt Registrar 1).

‘Usually patients are decuffed within 24 hours’ (Senior Gvt Registrar 2).

Upon discussing the assessment of communication in PWTs, the SLPs in Sri Lanka described assessment of comprehension and indirect protocols. They failed to provide a clear description of the processes involved in the assessment of communication in PWTs:

‘We assessed their comprehension first and severity of the condition and then the trachea’ (Senior Gvt SLP).

6.3.2 Communication intervention in people with tracheostomies

The presence of a cuffed tracheostomy tube affects verbal communication because the airflow from the lungs is inhaled and exhaled through the tube, preventing airflow through the vocal folds and upper airway. In order to restore speech, the patients should be able to manage their own secretions and tolerate cuff deflation and a speaking valve. In minority world contexts, published studies describe clear protocols for intervention of communication, including voice-restoration strategies using speaking valves such as the Passy Muir speaking valve for ventilated patients with fenestrated tracheostomy tubes (Hauck, 1999; MacBean et al., 2011; Rose et al., 2015), and they mention strategies like above-cuff vocalisations (McGrath et al., 2016).Practices also describe the SLP’s role in providing guidelines to the nurses to enhance communication and speaking valve use (Foster, 2010; Grossbach et al., 2010) with PWTs. For PWTs who are not candidates for speaking valve, the use of AAC with both low- and high-tech methods are

described. Speech language pathologists are again identified as integral contributors, responsible for providing these interventions and recommending the best approach to achieve communication in PWTs. In some cases, the most suitable AAC would be to use lip movements or mouthing and gestures, and in other cases, communication boards or high-tech device,such as electronic devices activated by eye movements, may be recommended (Hauck, 1999; Hemsley et al., 2001). The National Health Services (NHS) tracheostomy care guideline, from the UK, recommends simple strategies,for instance using a nurse-call buzzer, so that PWTs who have no voice can alert their caregivers (NHS, 2011).

Analysisof the Sri Lankan practices reveals that SLP involvement with this patient cohort was limited, and generally the nurses provide low-tech AACs such as a paper and pen for PWTs, on an *ad hoc* basis. Family members or unpaid caregivers (UNCGs)also try various logical means to elicit communication from PWTs who are unable to speak. In the private sector, it was noted that UNCGs sought professional help overseas to obtain high tech AAC devices for PWTs.

People with tracheostomies who tolerate cuff deflation (the process described in the previous section) are seen to communicate using finger occlusion of the tracheostomy tube. Practices in minority world contexts published in the late 1990s and early 2000s described the use of finger occlusion to enable voice production, but both these studies recognised the infection control issues and possibility of infection with this method (Hauck, 1999; Woodrow, 2002). The use of the speaking valve is not routine practice, and professionals retrospectively reported a few cases where speaking valves were provided for PWTs. Fenestrated tracheostomies are not widely available, however, owing to their cost, but the ENT doctors reported of instances where fenestrations were made manually.

Another unconventional process with regards to facilitating speech in PWTs reported and observed was the practice of providing a tracheostomy cap to the PWT and recommending the patients use it at their discretion to enable communication. This process was not accompanied by any formal guidelines or prior assessment by a professional. It was a rather astonishing finding that this unconventional practice (reported by the professionals and PWTs and observed by the researcher) is a routine process in Sri Lanka, while minority world countries place great emphasis on structured protocols leading to capping trials (Christopher, 2005).

The SLP participants in Sri Lanka described communication management in PWTs with terms and processes used in laryngectomee rehabilitation:for example, ‘We introduced total communication usually, for laryngectomies we go for electrolarynx. ….. ENTs put the speaking valve in the wards and send it to us; for some, the operation is successful, and for some they [ENTs] are replacing again. We often counsel regarding possible recurrence of cancer’ (Senior Gvt SLP 1). This commentindicates a confusion between the two cohorts of patients and inadequate knowledge regarding communication intervention for PWTs. Similar findings were noted in the published literature in Turkey, where a study aimed to describethe quality of life of PWTs but reviewed, described and discussed laryngectomies (Gul & Karadag, 2010).A summary of findings related to the management of communication in PWTs is presented in Table 6.4, where reported Sri Lankan practices are paralleled with practices in other countries, particularly in minority world contexts.

Table 6.4. Summary of practices managing communication in people with tracheostomies (PWTs) in Sri Lanka vs the minority world

Practices related to the management of communication in PWTs	Global	Sri Lankan
Assessment	Protocol-driven, well-defined processes in cuff deflation trials followed by speaking valve trials and speech assessments (Australia, 4 & 5 and US, 39)	No protocols, no evidence of planned or formal assessment process
Voice restoration	Speaking valves (Australia, 3,5 & 6; Canada, 11 & 12; UK, 27; US, 38, 39, 40, 42 & 46), fenestrated tubes (Canada, 12; UK, 22; and US, 32) and techniques like above cuff vocalisations (UK, 29)	Fenestrations made manually by the doctors Sporadic use of speaking valve
AAC	Low-tech and high-tech AAC devices recommended by SLP following assessment (Australia, 1 & 5; Canada, 12; UK, 22,24 & 27; and US, 32).	Low tech AAC provided by nurses and unpaid caregivers (UNCGs)on an *adhoc* basis Private patients acquire high-tech devices from overseas
SLP role	SLPs work in teams but have the primary role of assessing and managing communication for PWTs (Australia,5; UK, 28 & 29; and US, 34,45 & 27).	SLPs present with limited knowledge regarding communication options available for PWTs.

6.4 Other significant disparities in practice patterns

Apart from the disparities at the micro-level, as described above, some very significant findings relate to variations in practice patterns in Sri Lanka and the rest of the world. These differences are discussed in this section.

6.4.1 Policies, protocols and guidelines

Minority world countries like the US, UK and Australia have long since realised the importance of evidence-based practice in managing PWTs, and these countries have developed policies and guidelines specific to swallowing- and communication-management in this patient population. The American Speech and Hearing Association (ASHA) developed the first position statement and practice guidelines for communication intervention in PWTs in which tracheostomy management was considered a special skill for SLPs (American Speech-Language-Hearing Association, 1993a). In 2004, ASHA published the preferred practice patterns for SLPs, guiding professionals in managing PWTs and including guidelines for swallowing, speaking valves, AAC assessment and management.

Similarly, Australia has also published position papers and guidelines recognising the need for SLPs to have specialised knowledge to manage PWTs and providing standard evidence-based practice to professionals to base their practice on (Speech Pathology Australia, 2005& 2013).

The NHS in the UK published registered guidelines that were directed at all clinical nurses, describing the resources needed to manage communication difficulties and guidelines to which professionals can refer for further assessment (2011). Following this initial guide's release, the Royal College of Speech Language Therapy (2014) published a position paper providing guidelines for SLPs on swallowing and communication management in PWTs, providing structure and improving uniformity in practice patterns. In Scotland, the NHS has published and reviewed best practice statements since 2003 (NHS, 2007). And more recently, several other minority world countries like New Zealand (The New Zealand Speech/language

Therapists' Association, 2015) have also developed national documents to guide and ensure consistent best practices for PWTs.

Apart from these national guidelines, several studies describing practices in minority world settings have reported hospital-level practice guidelines and protocols, especially related to cuff deflation, decannulation (Ceriana etal., 2015; Frank et al., 2007) and swallowing-management (St. George's University Hospital, n.d.). Lewis and Oliver (2005) describe a special outreach program and the development of discharge guidelines passed from the critical care unit to the ward when the patient was transferred, the intention being to bring consistency and uniformity to the management of PWTs.

In Sri Lanka, the first tracheostomy-related guideline was published in 2013 by anaesthesiologists (Faculty of Critical Care, 2016), in which swallowing and communication management in PWTs is described briefly, with no indication of which professionals take the lead role in these practices. Hospital-level guidelines have been reported in neither the private nor government sector hospitals reviewed in this study.A search for published guidelines in other majority world countries was futile, indicating Sri Lankan practitioners in their own small way have taken a step in the right direction.

6.4.2 Team approach and professional roles

Tobin and Santamaria (2008) describe PWTs as special populations, stating that the efficient management of swallowing and communication in these patients requires well-equipped systems and skilled multidisciplinary teams (MDTs). A review of the research published in the minority world contexts reveals that the MDT approach (Freeman-Sanderson et al., 2011; Seckel & Schulenburg, 2011; Ward et al., 2008) in this patient population is well understood and integrated into the system. These practices continue to evolve, and the MDT approach is being

replaced by an interdisciplinary team (IDT) model of care (Clayton et al., 2010; De Mestral et al., 2011) for PWTs. Multidisciplinary care refers to practices by which different healthcare disciplines work on a patient, in parallel or sequentially, within disciplinary boundaries. Interdisciplinary care, on the other hand, refers to practices where professionals from different disciplines have reciprocal interactions and work on the patient simultaneously while interacting with each other, creating innovative knowledge and perspectives (Choi & Pak, 2006). These MDT and IDT approaches are recommended and are guided by state-level professional protocols,as described in Section 6.3.1.

Despite, Sri Lanka being well equipped with professionals from various disciplines essential to swallowing- and communication-management in tracheostomised populations, the finding reveal that the practices related to swallowing and communication are mainly managed by medical professionals,particularly physicians and nurses. The involvement of other allied health professionals,especially SLPs and dieticians, is done in an unsystematic way, with no clear criteria on when to refer to these specialties. The inpatient notes (called as bedside head ticket [BHT] in Sri Lanka) and the outpatient notes (a notebook in patients' possession in the government sector) reveal that doctors refer within medical disciplines through referral letters written out in the BHT or outpatient notebook. No such referrals to allied health fields were noted, indicating that not all PWTs are routinely referred to an SLP or dietician for management.

In the literature, it is evident that the professionals involved in managing swallowing and communication in PWTs vary within and between contexts. However, studies describing practices mainly in the minority world have identified professionals who play important roles: SLP's, nurses, otolaryngologists or ENTs, intensivists, dieticians, physiotherapists, RTs and other medical doctors. The role of the SLP within an MDT is clearly recognised and well-defined

in Australia, the USA, the UK, Saudi Arabia and Belgium, where position papers and guidelines have clearly defined their roles in swallowing- and communication-assessment and intervention in PWTs. However, as in Sri Lanka, practices in Canada and Italy (Garuti et al., 2014; Rose et al., 2015) have undefined roles for professionals working with PWTs, and a study describing practices in Taiwan (Wang et al., 2014) has indicated that PWTs are not referred to an SLP by medical doctors. In the majority world countries, including Sri Lanka, practices vary within and between contexts (Hoosen, 2012), and this is likely be due to a lack of national consensus and guidelines.

The published literature highlights the efforts being made in minority world contexts to increase collaboration between professionals to improve outcomes in PWTs. Cameron et al. (2009) have reported the introduction of the Tracheostomy Review and Management Services (TRAMS) in 2002 in Australia. A consultative team of respiratory and intensive care unit (ICU) doctors, clinical nurse consultants, physiotherapists and SLPs formed this IDT and coordinated all practices surrounding tracheostomy management while providing support and education to patients, caregivers, and staff. The TRAMS service delivery model was shared with other facilities and has produced positive outcomes, including reduced cannulation times, return to voicing and oral feeding, a significant reduction in hospital length of stay and significant cost savings (Ball et al., 2010; McGrath et al., 2016). Furthermore, apart from collaboration and uniformity of practice patterns at a national level, the minority world is also working towards unifying practices at a global level. The international tracheostomy quality improvement project called The Global Tracheostomy Collaborative (GTC) (Enamandram et al., 2014) is evidence of such efforts.

6.5 Summary and conclusion

From the above discussion, it is evident that swallowing and communication management in Sri Lanka is confounded by resource constraints, some of which are attributable to fiscal limits, but most of which may be due to lack of knowledge on the part of professionals, lack of specialised and specific roles, and lack of evidence-based protocols and guidelines on which to base practices. In a summary of the critical comparison and dialogue between the practices in Sri Lanka and practices reported in other contexts, especially the minority world, the evidence shows the following:

- The lack of capital resources in Sri Lanka compared to the minority world settings may not be purely due to a lack of finances, but probably arises from a lack of knowledge and skill among professionals.
- The Sri Lankan health sector is well equipped with professionals from medical and allied health fields required for swallowing- and communication-management in PWTs,such as the minority world countries.
- Despite the availability of specialised fields and professions, practices in Sri Lankaface challenges of poorly defined professional roles and a lack of team work in the management of PWTs, whereas the role and importance of a MDT approach to tracheostomy management is well recognised in minority world settings
- Practices in minority world countries areguided by national guidelines and guided by extensive literature published within these contexts, but in Sri Lanka and other majority world countries, research is limited, and there are no policies or guidelines to direct practice.
- While minority world countries are working towards global uniformity in practices (e.g. the GTC) and further improving evidence-based practices (e.g. the free water protocol),

the majority world has inconsistent and poorly defined practices, even within wards of the same hospital.

To conclude, compared to the minority world settings, Sri Lanka has the minimal requirements for managing swallowing and communication in PWTs, especially in terms of specialised professionals. If these professionals are equipped with the knowledge and skills and provided with opportunities to work in collaboration with other professionals, they could optimise the existing resources and advocate for other resources, working towards consistent and efficient evidence-based practices.

Disparities in healthcare across contexts, as influenced by socioeconomic factors, have been documented extensively (Betancourt et al., 2003; Jackson & Gracia, 2014). Based on thisdocumentation, one could argue that it is unjustifiable to compare practices in a minority world, high-income context with practices in a majority world, low-income context. However, the central argument of this chapter is that these gaps or disparities are not purely the result of variation in matters such as the availability of resources, professional skills or variations in available financing;they are deeper, rooted in social, cultural and historical ideologies (Anderson et al., 2009; Betancourt et al., 2003).

The critical appraisal of the practices managing swallowing and communication in Sri Lanka compared to health care practices in other contexts, as reported in literature, has thus highlighted some key findings. In sum, and at the root of these findings, is that the nature of professional relationships and the power dynamics among professionals within and between professional groups influences the overall efficiency of health care practices.

In the following chapter, I present more support for this argument and analyse and reflect further on these social, cultural and historical ideologies that influence Sri Lankan health care

practices. I highlight how professionals conceptualise and manage their power when interacting with their colleagues within the same discipline and in other disciplines, and I also reflect on how this power influences the relationships between patients and professionals within these contexts.

Chapter 7

Results and Discussion

Part Three: The Power Dynamics and Efficiency of Health Care Practices in Majority World settings:The Case of Swallowing- and Communication-Management in People withTracheostomies in Sri Lanka

7.1 Introduction

In Chapters 5 and 6, I described the management of swallowing and communication in Sri Lanka and analysed these practices in relation to context. The findings revealed several prominent features of practice in Sri Lanka, influenced by factors intrinsic to the Sri Lankan health sector. Through the critical appraisal of the practices and a comparison of Sri Lankan practices with those in the minority world, it became evident that resource constraints including financial, capital and human resources were not the primary reason for discrepancies in practice patterns and outcomes, but it is the lack of a multidisciplinary approach to management and the under-utilisation of existing resources that result in variations in practices in the Sri Lankan context.

One of the most influential findings is what I call the ‘Madam Culture’, and in this chapter, I analyse this concept further and discuss the influence it has on the overall efficiency Sri Lankan health practice. This analysis and discussion takes the form of the third manuscript for publication, entitled **‘**The Influence of Power Dynamics on the Efficiency of Healthcare Practices: AQualitative Exploratory Study of Tracheostomised Populations in Sri Lanka’.

7.2 Manuscript three of thesis

This manuscript is written for submission to the biomedicine journal *Health Research Policy and Systems*,according to that journal's requirements. For integration into the thesis, the pages are numbered continuously as part of the chapter and the title page and declaration have been removed. This article may be referenced as 'Ishak, F.N. & Pillay, M.P. (2017). The influence of power dynamics on the efficiency of healthcare practices: a qualitative exploratory study of tracheostomised populations in Sri Lanka, *Health Research Policy and Systems*, volume, pp.' The journal requires that authors follow theBioMed Central reference style, and thus the references in text are numbered consecutively in square brackets followed by a list of references at the end of the manuscript. In the manuscript, a background to the study followed by a brief account of the method and analysis to derive at the results is presented prior to presenting the findings related to the influence of power dynamics. The information in these sections may prove redundant to the reader of the thesis, owing to these aspects being described in detail previously, but for publication these sections need to be included in the manuscript.

The influence of power dynamics on the efficiency of healthcare practices: a qualitative exploratory study of tracheostomised populations in Sri Lanka

Abstract

Background: Efficient management of tracheostomised people is best provided by multidisciplinary teams (MDTs) working together. In several majority world contexts, the collaboration between professionals and patients is influenced by medical hierarchies. The aim of this article is to explore the influence of power dynamics on the efficiency of health practices in majority world contexts.

Methods: An exploratory study was conducted in urban Sri Lanka. Patients with tracheostomies, their unpaid caregivers (UNCGs) and professionals involved in their management were recruited from one government and one private hospital. Data was collected through focus group, semi-structured interviews, observations and document reviews. A thematic analysis approach was adopted to analyse the data using deductive and inductive coding.

Results: Three themes were identified in relation to power dynamics affecting the efficiency of the practice: (a) hierarchies within professional groups; (b) medical dominance in relationships of physicians and allied health professionals; and (c) power in relationships between patients and professionals.Medical dominance results in poor multidisciplinary collaboration, poorly defined professional boundaries, inefficient resource utilisation and poor reflection of patient-centred care.

Conclusion:Whilst minority world countries have recognised the importance of MDTs and patient-centred care in providing efficient health services, the medical model dominates practices in the majority world. Thus, prevalence of medical dominance negatively impacts the efficiency of heath care practices in these contexts.

Keywords: Efficiency of health care practices, Power dynamics, Majority world

Background

Traditionally, tracheostomies were confined to the emergency management of upper airway obstruction, and tracheostomised populations were managed in the intensive care unit (ICU) [1]. With the advent of percutaneous techniques and an increase in the number of tracheostomies being performed, people with tracheostomies (PWTs) are now managed out of the ICU in medical and surgical wards [2]. These patients present with special needs, including quality of life issues pertaining to communication and oral feeding [3], and they require complex care involving clinicians across healthcare specialties [2].

A review of the literature has revealed that most minority world (high income) countries have MDTs, and more recently interdisciplinary teams (IDTs) comprised of physicians, speech language pathologists (SLPs),respiratory therapists (RTs), dieticians and nurses,each with clearly defined roles in managing PWTs [4, 5, 6, 7]. Fewer studies describe practices in the majority world, also known as low- and middle-income countries, and while these contexts also identify the need for a multidisciplinary approach [8], the practices within each country exhibit considerable variation [9]. These inconsistencies are probably due to a lack of national consensus and guidelines, as in the minority world contexts.

The present study was aimsto investigate the efficiency of the management of PWTs in Sri Lanka, a majority world context, where there is dearth of research related to the subject. Efficiency in healthcare refers to the relationship between resource inputs and intermediate or final outcomes [10]. In most majority world settings, there is a significant lack of multidisciplinary rehabilitation [11] and concern regarding the efficiency of the practices [12, 13]. One reason for this shortfall could be that health care systems continue to be managed by

medical models with inherent medical hierarchies and power dynamics among health care professionals [14]. Even in minority world contexts the medical profession is known to have more autonomy, power and authority in most aspects of health service delivery,meaning that physicians have the privilege of being at the top of the hierarchy [15]. ‘Power dynamics refer to “the social processes results arising from power differences between people, communities, institutions, or nations based on relative levels and qualities of gender, class, race, ethnicity and/ or sexuality’ [16].The medical hierarchy has historical roots in the apprentice model, but unlike in the early twentieth century, the medical hierarchy has resulted in the exercise of power rather than a method to implement education and training [17]. This dynamic has resulted in inadequate communication and suboptimal patient outcomes [18].

The health-care system in Sri Lanka, too, has been reported to be strongly influenced by doctors [19]. Sri Lanka, a majority world low-to-middle income country [20], boasts of an impressive record for good health care provision, with quality of inpatient care comparable to health care in higher-income or minority world contexts [21].Sri Lanka was ranked 73rd in the *2016 Human Development Report*, with a relatively high human development index (HDI) (HDI = 0.766), compared with neighbouring South-East Asian countries (e.g. India: 131st, HDI = 0.624; Pakistan: 147th, HDI = 0.550) (HDRO, 2016) [20]. Despite this achievement, Sri Lanka has several inherent issues within its heath sector,including staff shortages, unequal distribution of resources and disproportionate focus on curative services [22]. Despite excelling in terms of health outcomes, particularly related to low infant mortality rates and relatively high life expectancy [23], and despite reportedly having equitable distribution of most health services [24], the services available for rehabilitation are still emerging, and there is a paucity of studies describing allied health services in the country [25].

Health care in Sri Lanka is provided by both the public and private sectors, with government facilities spread out across the country and private facilities largely concentrated in the western province,anddistributed thinly in other urban and suburban areas [26]. The government, utilising taxes, funds the services provided by the public sector, whereas out-of-pocket spending or private expenditure from households, including gratuities and in-kind payment for health, is the most common way of obtaining healthcare in the private sector in Sri Lanka [27]. Those with private health insurance cover only a small percentage of the population [26].

Methods

This study used a qualitative exploratory triangulation design [28] in which observations, document reviews, semi-structured and focus group interviews were utilised to provide a multi-perspective understanding of the practices involved in swallowing- and communication-management in tracheostomised populations in Sri Lanka.People with tracheotomies, their UNCGs and the professionals involved in their management participated in the study.

The study was approved by the Biomedical Research Ethics Committee of the University of Kwa-Zulu Natal, South Africa (BE 198/15) and the ethics committees of the hospitals in Sri Lanka where the study was carried out. All participants gave full and informed consent, except one professional who didn’t consent to be audio recorded. Her interview was recorded as fieldnotes made during the process. A detailed description of the hospitals, their ethical approvals and participants is not provided to prevent identification of the participants and the participating hospitals.

Study Setting

The study was carried out in one government and one private acute care hospital, in Colombo, the commercial capital of Sri Lanka, to ensure engagement of professionals and patients from both the private and government sectors, thereby providing richer data.

Participants

A purposive sampling strategy was used to identify three groups of participants from each site: PWTs, their UNCGs and professionals involved in the management of PWTs. The head nurses and medical officers in various wards in the hospitals were contacted to identify potential participants recruited for the study after obtaining informed consent in English or another locally used language. The PWTs selected for the study were 18 and older and had intact cognitive skills (level VII–VIII in the Rancho Los Amigos Scale, a cognitive function scale [29]). Five PWTs were interviewed in the government hospital, but no PWTs fitting the inclusion criteria were identified in the private sector hospital.The UNCGs selected, also 18 and older, were all family members who had close alliance to the PWTs. Five such caregivers were interviewed in the government sector and two caregivers were interviewed in the private sector. Professionals who participated in the study from both hospital sites included specialist physicians, general physicians, nurses and allied health professions such as dieticians and speech and language therapists who had a significant role in tracheostomy management. Also recruited for the study were other professionals identified by study participants and local informants as having a role in ordering and procuring capital resources (pharmacists and procurement officers) required for swallowing- and communication-management in PWTs. Table 7.1 summarises the profiles of the patients with tracheostomies,while Table 7.2 describes the UNCGs, and Table 7.3 summarises the details of the professional who participated in the study.

Table 7.1. Profiles of the Patients with Tracheostomies (PWTs)

Participant	Age / gender	Duration of tracheostomy	Level of education
PWT 1	66 years / Female	10 months	Less than high school
PWT 2	40 years / Male	6 years	Less than high school
PWT 3	49 years / Male	10 days	Less than high school
PWT 4	45 years / Male	1 year 6 months	High school
PWT 5	19 years / Male	10 days	High school

Table 7.2. Profiles of the Unpaid Caregivers (UNCGs)

Participant	Age/ gender	Relationship to PWT	Hospital
Gvt UNCG 1	27 years / male	Son of PWT	Government
Gvt UNCG 2	66 years / female	Mother of PWT	Government
Gvt UNCG 3	25 years / female	Daughter of PWT	Government
Gvt UNCG 4	30 years / male	Son of PWT	Government
Gvt UNCG 5	28 years / female	Daughter of PWT	Government
Pvt. UNCG 1	60 years / male	Husband of PWT	Private
Pvt. UNCG 2	44 years/ female	Mother of PWT	Private

Table 7.3. Summary of Participating Health Care Professionals

Professional	Number of participants	Type of interview
Government hospital		
Anaesthetist	1	Individual semi-structured
Earnose &throat (ENT) consultants	3	Focus group
Senior registrars	3	Focus group
Registrars	2	Focus group
Medical officers	3	Focus group
Senior speech therapist	1	Individual semi-structured Focus group
Speech language pathologists (SLP)	2	Focus group
Nurses	2	Focus group
Dietician	1	Individual semi-structured
Pharmacist / procurement officer	2	Individual semi-structured
Private hospital		
Physician	1	Focus group
Medical officers	4	Focus group
Senior nurse	1	Focus group
SLP	1	Individual semi-structured
Dietician	1	Individual semi-structured

Data collection

Multiple methods of data collection were used. Focus group interviews with a professional group were carried out in the two hospitals using a semi-structured interview schedule for professionals to guide the discussions. In the government hospital, the group was conducted in the auditorium of the ear, nose and throat (ENT) ward with ENT consultants, ENT registrars, house officers, nursing staff and speech therapists. In the private hospital, the focus group was carried out in the meeting room of the medical ICU with intensivists, medical officers and nursing staff.

Face-to-face interviews were conducted using a semi-structured interview guide with the professionals who could not take part in the focus group interviews, as detailed in Table 3.The PWTs and their UNCGs were also interviewed individually by me, using semi-structured interview guides. A research assistant aided in data collection by carrying out the interviews in Sinhala (the national language of Sri Lanka) for the PWTs and their UNCGs who were not fluent in English.

All interviews were digital-audio recorded (except for one, where consent was not given to record, in which case notes were taken instead), and fieldnotes regarding facial expressions and other non-verbal expressions were made by me and the research assistants. The PWT's who could not effectively communicate verbally were provided with alternative means of communication, which included writing and gestures which were interpreted audibly by the interviewer so that they could be transcribed.

The observation schedule defining the areas to be observed were used to observe the setting, interactions and practices associated with swallowing and communication in PWTs in various ward settings (medical, surgical ICUs, ENT and neurotrauma units) in the two chosen hospitals at various times in the day. The findings were documented, and reflective notes were made in the observation schedule (Appendix 6).

The charts of PWTs in both sites (five in the government and two in the private sector hospital) were reviewed, and relevant data was extracted using the data-abstraction form.

Data Analysis

Interviews were audio-recorded and later transcribed *verbatim* by a research assistant with extensive training in qualitative research methods and transcription. The transcribed interviews in Sinhala were transcribed and subsequently translated. Data from observation and documentation were summarised in sections with interpretative reflective notes. Following this initial data preparation, all data was systematically reviewed to develop and compare key themes or findings. NVivo 11 (QSR International, 2015), a qualitative software program, was used to assist in data management and analysis. Hybrid coding [30], a combination deductive coding (an *a priori* template of codes based on conceptual framework) and inductive coding (data-driven coding) was used to identify themes within the data.

Results

Even though the study did not seek to study directly the power dynamics between healthcare professionals, one of the incidental themes that emerged during inductive coding was professional relationships impacting the management of tracheostomised populations. The findings are presented under in following sub-themes:(a) hierarchies within professional groups; (b) medical dominance in therelationship between physicians and allied health professionals;and

(c) power in the relationships between patients and professionals. Extracts from fieldnotes, document reviews and quotations from the interview transcripts are used selectively to illustrate the findings and bring out the voice of the participants. Results are discussed to highlight the impact these power dynamics have on the efficiency of services provided to PWTs in Sri Lanka.

(a) Hierarchies within professional groups

With the Sri Lankan health system, the professional hierarchy is evident within each specialty. In the government hospital, the focus group had to be conducted in an auditorium (although this was not ideal, this was the only option for the venue). Though each person walked into the auditorium at various times, it was interesting to note how they seated themselves. The consultants occupied the first row, the senior doctors and senior registrars took sets behind them, and the registrars, medical officers, nurses and the speech therapist all seated themselves in the last two rows. The obvious nature of the hierarchical seating arrangement later cascaded into the focus group discussion, where the consultants and senior registrars were the most vocal and the participants seated at the back had to be prompted to join the conversation or chose not to engage in the discussion. The private hospital had a smaller group in a round table discussion, where the medical officers and the physician were active participants in the discussion. The senior nurse who took part in the focus group joined in the discussion when the conversation was directed at her.

The hierarchical nature of the relationships among the medical doctors ishighlighted in an extract from the focus group interview:

‘Madam [referring to consultant], yes, now the Anasthesesists have started doing tracheostomies.’(Senior Gvt Registrar 1)

The consultants are referred to as ‘madam’ and ‘sir’ by the senior registrars andother medical professionals. In Sri Lankan culture, madam and sir are terms used to refer to those in higher positions in various hierarchies (this is common practice in South Asian countries) and indicate a degree of authority and subordination in relationships, thereby signifying a status gap [31]. The use of these terms was documented in several instances during the focus group and in the fieldnotes made during the observation of PWTs in the ward settings.

This hierarchical culture, was also observed within allied health disciplines. The followingextract is taken from fieldnotes made during the individual interview with the speech therapist.

> Initially I met a junior SLP in the speech therapy unit.I explained that I would like to interview her for the study. She was reluctant and immediately referred me to Miss X, the senior SLP, as she is the senior and would prefer to take part in all such interviews and meetings.(Researcher field note).

In the private sector, these power dynamics were not as distinct as in the government sector. During the focus group interviews and in the fieldnotes, it was evident that doctors referred to each other with designation and name (e.g. ‘Dr. A’). Medical officers presented the recommendations from the consultant physicians, who made short visits to the patients. The medical officers instructed the nurses to carry out procedures like oral feeding or cuff deflations:

> Nurses inform the doctors regarding signs of aspiration, likecoughing they might see. Then we doctors, in the ward, assessthepatient. If significant we inform the consultants, who see

> thepatient and tell us what to do next. We then instruct nurses on, for example, what to feed the patient' (Pvt. Medical Officer 1)

Physicians within specialties seem to guard their professional roles passionately. In most global contexts,anaesthetists and or ENTs are part of a team that manage PWTs (32). However, in Sri Lanka, it appears that tracheostomy management has predominantly occurredwithin the ENT domain, and the anaesthetists have recently taken a more active role, following the advent of percutaneous tracheostomies [33]; they have even developed clinical guidelines for tracheostomy management [34]. The ENT team in the government hospital was explicit about their disapproval with this development:

> Anaesthetists have started doing percutaneous tracheostomies,and now we will have problems…. Why do they want to dopercutaneous tracheostomies? They are only training now, and I feel the patients are going to be in trouble because of this.(Gvt Consultant ENT Surgeon 1)

The senior registrars were quick to agree:

> Anaesthetists have started very recently, either one month or two months. Madam [looking towards the consultant],sometimes neurosurgeons are also doing now [inserting tracheostomies]. You know [speaking to me],tracheostomies are either done in our unit or neuro-surgical unit. And some of the surgical registrars in the accident services do as well. But they are very competent. (Senior Gvt Registrar 2)

During the individual interview with the anaesthetist, she agreed that ENT doctors were the professionals mainly involved in performing tracheostomies and managing PWTs, but that owing to an increased need, anaesthetists had recently started performing percutaneous tracheostomies:

> ‘In Sri Lanka, so far the practice has been for us to refer the ENT surgeons to do the tracheostomy.If I tell you basically, why anaesthetists got involved is because we go as the College of Anaesthesiologists and Intensivists and we do a lot of critical care. Ninety percent of our anaesthetists, including myself, not only do anaesthesia, we also do critical care, which means ICU management. We have so many patients on a ventilator for a long time, so we go for an early tracheostomy for intubated patients, when we know within a few days we can’t extubate. Because it helps in breathing process, oral hygiene and it comforts the patients.’ (Gvt Anaesthetist)

Another interesting finding was the professional attitude and relationships between locally trained professionals and those trained overseas. The SLP in the private sector who was trained outside Sri Lanka criticised the locally trained SLPs,suggesting those who work mainly in the government sector have poor basic knowledge; the locally trained SLP expressed similar sentiments regarding the SLPs trained overseas.

> ‘I have heard that some private sector speech therapists use physiotherapy methods to manage swallowing … and this is not acceptable.’(Gvt SLP 1)

(b) Medical dominance:Relationship of physicians and allied health professionals

The allied health professionals described the power imposed on them by the medical doctors, which they said affects their clinical practice, threatens their professional roles and disregards professional boundaries:

> When setting up speech therapy services in the hospital, the ENT doctors did not want to share the endoscope with the SLPs. They informed other consultants to refer dysphagic patients directly to them for FEES [i.e. fiberoptic endoscopic evaluation of swallow] …… It's like we are facing a medical mafia.Doctors don't like SLPs using stethoscopes; some SLPs say they have to hide it when conducting assessments, but as a senior SLP, I also blame the therapist who tends to put it around the neck and show off, which could put the doctors off. (Senior Gvt SLP)

She later continued to say:

> The doctors are a big barrier to us. We don't get many tracheostomised patients referred to us. The ENT doctors directly do a FEES assessment. They don't read our notes or recommendations. We are afraid they will take over our profession. Once I even jokingly told a doctor, as ENTs you have so much to do, why do you want to do dysphagia assessments? (Senior Gvt SLP)
>
> There is another problem now the medical officers also do the nutrition part. So, they now have started human nutrition at PGIM

> [i.e. the post-graduate institute of medicine], and they are also coming to the field. Today, I'm preparing diet plans for patients here, and they are also, in the other room, preparing diet plans for the patients…..The medical officers have so many medical fields they can choose from, but now this….I am one dietician in this large hospital. Many people are there in the country, trained in nutrition without proper jobs, they do some jobs because they are not getting the dietitians' job. Almost more than 200 people, but no opportunities. (Gvt Dietician)

In the private sector, there appears to be more open communication between allied health professionals and the medical doctors:

> At times, doctors write an order saying a patient needs*x* calories. But luckily the nurses inform us, and when we go and explain to the consultants, they don't oppose us. (Pvt Dietician)

In the private sector hospital, the dietician described the power struggles with nursing:

> The nurses do not provide feeds according to our regime, so those issues come up. It's more difficult with older nurses, they question our recommendations and make their own suggestions. (Pvt Dietician)

The speech therapists in the government hospital also expressed concern regarding their low status within the hospital hierarchy in the government sector.

> We have a poor grading in the system. The system from the ministry is a mess. In the private sector, we have better recognition. We can

> consult and see patients in outpatient departments. Not even a medical officer can do consultations. (Gvt SLP 1)

The medical doctors were oblivious to the qualms of the other professionals. During the interviews, they indicated that the current practices related to tracheostomy care bring about good outcomes.

> We do FOL [i.e. fiberoptic laryngoscopy] on every patient with a tracheostomy. Sometimes we find patients have silent aspiration when we FOL for other purposes. Then we ask them not to eat by mouth. (Senior Gvt Registrar 1)
>
> We give only milk during FOL.If they [pointing towards the SLP's in the room] are present, then they bring other types of food. (Gvt ENT Consultant 2)

During a discussion about decannulation the ENT consultant had this to say:

> We never refer to SLP during decannulation. It is completely our responsibility and we have never had problems with it.We do FOL's on all our patients. If the airway is not adequate, then there is no point of trying decannulation. If not, then we keep the tube closed day and night for two days, then we take out the tube and put on a plaster. (Gvt ENT consultant 1)

The medical doctors agreed that they have the authority to decide on the management of PWTs and are the referral source for these patients to other professionals, at their discretion.

> If the patient is in my care, I am responsible for everything. I can direct the patient wherever necessary,for the chest physician, chest physiotherapy, nutrition or whatever. (Gvt ENT Consultant 2)
>
> The consultants are responsible for everything. (Senior House Officer 2)
>
> Swallowing assessments – we do FEES' (Senior House office 1) [ENT consultant 1 interrupts]'No, no first we refer to them[pointing

> towards the speech therapists in the room]. They start their therapy, and when they think that we need to do FEES, we do. Sometimes when they are not available, especially if we get a patient on Saturdays, then we do FEES before them, or else we have to wait two days now.

The doctors confirmed that some of them are now trained to make diet orders:

> Some of our senior registrars had training on making dietrecommendations, and they make decisions on special diets and make the orders. (Registrar 1)

(c) Power in patient:Professional relationships

The power dynamics affect the relationship between patient and professional, and the 'madam' culture penetrates the patient–professional relationship:

> 'Not sure of who are the exact doctors who have seen me, but the nurses are always here. And daily 'big madam' (referring to the physician) comes to see me with other 'small madams and sirs'. (Gvt PWT 1)

Despite patients having several health-related concerns, they appreciate the professionals and do not actively voice out these concerns.

> Sheis upset and cries to her son about being unable to speak and expresses worry about the coughing and phlegm. During ward rounds, the patient did not mention her concerns to the doctors. (Fieldnotes: Observation of Gvt PWT 3)

During the interview, she says:

> ‘I am happy with how I am taken care of here in the hospital; the doctors and nurses do a very good job.’ (Gvt PWT 3)

The nurses and doctors appear to exercise power over patients and their caregivers:

> A doctor and two nurses told us that we can give only fluids to my father. They didn’t care much about us, since we first tried admitting him to a private hospital. They have a feeling that we come to these hospitals only after we went first to the private sector. (Gvt UNCG 4)

In the private sector, the caregivers of the patients interact more with the medical professionals.

> Mother of patient meets with consultant gastroenterologist and discusses her concerns with doctor. Explains to doctor that he may have an infection. She explains that she feeds him with a spoon, small amounts at a time. She refers to him as doctor and asks questions regarding his treatment (Fieldnote,Pvt. UNCG 2).

Discussion

This exploratory study in Sri Lanka, a majority world context examines how power dynamics affect both interprofessional and patient–professional relationships and thereby impact the health care practices involved in the management of PWTs. Three themes were identified in relation to power dynamics: (a) hierarchies within professional groups, (b) medical dominance in the relationshipsbetween physicians and allied health professionals and (c) power in patient–professional relationships. These power dynamics were far more evident in the government sector than the private sector, and appeared to deter interdisciplinary coordination between professionals. Barriers to interprofessional collaboration and communication, as reported, include hierarchy, differences in accountability, payment and rewards, varying levels of preparation, qualifications, status and personal values and expectations [35], all of which were seen to exist in professional relationships among healthcare workers in Sri Lanka. A common barrier to effective communication and collaboration in health care is hierarchies, and generally in a hierarchical culture, physicians sitting at the top feel there is collaboration, but the other professionals feel that communication remains ineffective [36]. Accordingly, in Sri Lanka the specialist consultants, followed closely by the senior registrars in their fields, sit at the top of the professional ladder, oblivious to the apprehension among other professionals and the impact their superiority has on the entire healthcare system, including the patients it serves.

Healthcare systems have traditionally been designed around hierarchical standpoints involving bureaucracy and control to ensure efficiency [36].However, research published in minority world countries over the years has highlighted the importance of MDTs and IDTs in efficient management of PWTs [4,5,6,7, 37, 38]. In Sri Lanka, like in many other majority world contexts [11, 39], there is lack of a multidisciplinary approach in the management of PWTs.

Allied health professionals seem intimidated and threatened by the medical doctors, who take on the roles of these professionals, disregarding professional boundaries and preventing the patients from taking advantage of their specialisation and expertise. This barrier results in poorly defined professional roles in specialised services such as tracheostomy management, as has been reported in several other majority world contexts [39,40].

In most minority world contexts, swallow evaluations for PWTs are routinely conducted by SLP's, first at the bedside, and then if required these patients undergo objective swallow evaluations [4, 41]. Objective swallow evaluations, like FEES, are known to be more resource-intensivethan bedside swallow assessments [42], especially when conducted in an operating room. Replacing the bedside assessment with this kind of procedure for every PWT can be considered an inefficient practice [43]. Practice patterns within the Sri Lankan health system give the medical doctors the role of making decisions on referring to other professionals, and they take it upon themselves to conduct swallow evaluations in PWTs using FOL, thereby underutilising the services of the SLPs. Similar findings have been reported in other countries like Taiwan, where over 50% of the medical personnel never referred any tracheostomised inpatients for speech therapy [39], thus affecting the efficiency of the service provided.

The government dietician reported that 200 fully trained dieticians exist without jobs, whilst the medical doctors are taking on the role of dieticians in government hospitals, following post-graduate studies in the field of nutrition. These 200 dieticians and the medical doctors, considering they are placed in the government sector,likely received their education in the government universities, utilising tax payments—as university education is funded by the government in Sri Lanka [44]. This lack of opportunity for dieticians clearly represents an inefficient use of valuable resources resulting in financial impacts on the entire system.

In Sri Lanka, the effect of power and medical dominance affects the relationship between the medical practitioners and the patient.Patient-centred care is barely noticeable in certain countries [45], where the biomedical model dominates, and poor communication defines interaction [46]. The participating patients in Sri Lanka considered doctors superior to them (referring to them as ‘madam’ or ‘sir’), and despite having health-related concerns, they did not discuss them with the doctors. Similar patient–doctor relationships have been reported in other majority world contexts with free health care, where researchers found high patient satisfaction despite feelings of vulnerability and reports of patients considering themselves inferior to the doctors [47].

Understanding the nature of these practices from a critical theory perspective, this article is premised on the notion that power negatively impacts patient care and efficiency of health care practices. However, it is important to note that there is a certain good in power within health care systems, when utilised appropriately. This benefit is present especially in situations where patients within the system recognise and trust the knowledge and ability of health care professionals to apply their skills to reduce complications and improve outcomes [48],thus accepting the decisions made by the professionals.It may also be present when power among professionals enables more efficient practices and empowers all health care professionals to function to their full potential, within their expertise.

At this point, it is also important to acknowledge that the findings from this study indicate that patients within the context of the Sri Lankan health care system are powerless or without agency. While it may be true that patients and their unpaid caregivers within the Sri Lankan health sector do not always serve as partners in clinical decision making, it may well be too stereotypical to say that none of these patients and caregivers have power.

Limitations and strengths

The fact that not all professionals could attend the focus groups and instead some had to be interviewed individually maybe considered one of the main limitations of this study. The attendance of professionals mainly from one medical specialty (ENT department in government centres and medical ICU in private centres) might meant that practice patterns among other professional groups such as neurosurgeons were not represented. The likelihood of bias resulting from social desirability in face-to-face interviews may also be a limitation. However, data triangulation and a multi-perspective view are the major methodological strengths of this study.

There is limited research that address the influence of power dynamics on health care efficiency, and there is limited critical theory to support the findings. However, one must acknowledge that there is plenty of theoretical groundwork and perspectives related to the nature of power dynamics in health care research. This article, however, is not a philosophical account related to power dynamics, but a practical description of how the nature of patient–professional relationships affects health practices in majority world contexts.

Conclusion

This study thus provides valuable insight into the power dynamics that exist at various levels of the Sri Lankan health system and the effect it has on the efficiency of health services.Hierarchical relationships exist within and across professional boundaries and penetrate the relationships between patients and their health care professionals. This influence deters collaboration between professionals, disregards professional boundaries, results in inefficient use of available resources and increases patient vulnerability in these contexts. These dynamics are more prominent in the Sri Lankan public sector, which provides free health care, compared to the private sector, which serves patients on the basis ofprivate pay.

The efficiency of the health practices in majority world contexts like Sri Lanka is affected by professional hierarchies and a lack of interdisciplinary coordination. Patient involvement in decision making is limited. Minority world contexts have long realised the importance of multidisciplinary [4] teams and are even working towards global collaboration [49, 50].It is time that majority world countries like Sri Lanka leave behind the traditional medical model and work towards building MDTs with well-defined roles, mutual trust and respect for professional boundaries. Sri Lanka and other majority world countries should also adopt the patient-centred model [51] and involve patients in making decisions regarding their management. This shift of focus would then enable all available resources to be used to their full potential, enhancing the efficiency of health practices within majority world contexts.

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7.3 Summary and conclusion

In this chapter, which is the last one addressing the results and discussion of the study, I have presented the findings concerning the nature of interprofessional and professional–patient relationships within the Sri Lankan health sector. I have discussed in detail the findings related to the influence of these power dynamics on the efficiency of health care practices managing swallowing- and communication-management in PWTs.

I set out to study the efficiency of health care practices related to swallowing and communication in PWTs in Sri Lanka, and the findings related to the influence of power dynamics on the efficiency of health care practices was an incidental finding, not been examined in much detail in literature so far (Nimmon & Stenfors-Hayes, 2016). Hence, there is limited critical theory to support or refute these findings, and this chapter forms a good basis for future research. I would like to at this point acknowledge that the findings in this study indicate that power in interprofessional and patient–professional relationships negatively impacts practice efficiency, but there may well be instances in which power can have a positive impact on health care practices, especially when it is used to enhance leadership and the organisation of practices (Lega, Prenestini, & Spurgeon, 2013) and to ensure that medical professionals can make sound judgements and decisions based on their expert knowledge and without having to face unreasonable demands from patients or their caregivers (Nimmon & Stenfors-Hayes, 2016).

In the next and final chapter of my thesis, I recapitulate the findings from the study, make my thesis statement and offer a look forward to the future.

Chapter 8

Synthesis and Critique

8.1 Introduction

In this chapter, I summarise the main findings of my study and present general conclusions based on these findings. My aim was to study the efficiency of the current practices available to manage swallowing and communication in people with tracheostomies (PWTs) in Sri Lanka, thereby understanding healthcare practices in an under-researched majority world context. Having extensively reviewed the global practices related to the clinical focus of the study (swallowing- and communication-management in PWTs), followed by a comprehensive investigation from multiple perspectives of practices in Sri Lanka, the distinctive features distinguishing practices in minority world contexts and those in majority world contexts became clear. Furthermore, in this chapter I acknowledge the strengths and limitations of this thesis and provide suggestions for further research. Following a comprehensive summary of all the findings and the implications of these findings, I suggest an alternative theory, which I believe offers a practical way forward to enhance the efficiency of practices currently in place in Sri Lanka. These suggestions may be relevant to other majority world contexts like Sri Lanka, and those readers who can identify their experiences in what has been described in the Sri Lankan context may well benefit from these ideas for transformation to enhance the efficiencies of their health care practices.

8.2 Chapter summaries

This thesis has been submitted as a ‘thesis by publication’ consisting of three manuscripts, written according to the requirements of selected journals. These manuscripts have

been embedded in Chapters 2, 5 and 7,and they are part of the literature review and results of this study.

In Chapter 1, I identified myself as a clinician, a researcher, a Sri Lankan and an in-betweener (McNess et al., 2015) to the Sri Lankan health system, after having studied overseas and currently working out of Sri Lanka. Also in this chapter, I introduced the problem of a lack of research on the efficiency of health care practices in majority world contexts (Zhu et al., 2014) and justified the choice of tracheostomised populations with both swallowing- and communication-difficulties (Dikeman & Kazandijan, 2004) as the clinical focus of the study. I also described the macro-context: the Sri Lankan health sector, where free healthcare is provided in the government sector and out-of-pocket funding pays for services in private healthcare.

A review of published literature related to swallowing- and communication-management in PWTs was presented in Chapter 2, and it provided a comprehensive idea of what global practices related to this area entail. The studies were analysed and classified by context and country. Due to the in-depth nature of the literature review and the extent of the results, findings related to the management of swallowing were presented in a manuscript to be published in the journal *Dysphagia*, while findings related to communication management were detailed as a subsection of Chapter 2.

Following the literature review, and after reviewing various frameworks published for the study of health care practices, I developed a conceptual framework to study the efficiency of health care practices from multiple perspectives. This framework I called ‘the multi-perspective efficiency of practice’ (MEP), presented in Chapter 3, and it conceptualises the efficiency of practices related to swallowing and communication in PWTs (informed by the literature review),

stresses the impact of the macro-context on health practices (Handler et al., 2001) and outlines methods of studying practices from multiple perspectives (Pillay, Kathard & Samuel, 1997).

Chapter 4presents the study's methodology, detailing the research design, data collection and data analysis procedures used to study the efficiency of health practices managing swallowing and communication among PWTs in Sri Lanka. In this chapter, I also linkedmy methodological choices to the theoretical fundaments and conceptual framework presented in Chapter 3.

Chapters 5, 6 and 7 are all part of the results and discussion of the study. In Chapter 5, a comprehensive multi-perspective description of swallowing and communication management of PWTs in Sri Lanka is described, from the viewpoints of those involved in the practice (PWTs, their unpaid caregivers [UNCGs] and professionals). These perspectives are supported by observed and documented data and presented in manuscript two of this thesis—'Management of Swallowing and Communication in PWTs: The Case of Sri Lanka', meant for publication in the *International Journal of Speech Language Pathology*.

Having seen how practices in various contexts across the globe manage swallowing and communication in PWTs and then understanding how the Sri Lankan practices manage these processes, in Chapter 6 I carried out a critical appraisal of the practices, drawing comparisons between the processes involved in Sri Lanka and those of other contexts across the globe. This discussion took the form of a rich dialogue between Sri Lanka and other contexts and highlighted significant disparities in patterns of practice between Sri Lanka and minority world contexts.Some interesting similarities in practices reported in other majority world contexts were also revealed. In Chapter 7, I chose to highlight and discuss one of the incidental findings of the study, the influence of power dynamics on the efficiency of the swallowing- and communication-

management in PWTs, presented as a manuscript for publication in the *Journal of Health Research and Policy Systems*.

8.3 Findings from the study

The following points summarise the steps I took to answer my research question: 'How efficiently are health services in Sri Lanka managing swallowing- and communication-difficulties in PWTs?'

i. First, I reviewed all relevant literature pertaining to swallowing- and communication-management in PWTs and analysed these findings as per the context in which they were reported.

ii. Using these findings, and other published frameworks intended to study health care, I developed a conceptual framework, devised a method and formulated data collection tools, which I used to investigate practices related to swallowing and communication management in PWTs in Sri Lanka. This groundwork provided me with a multi-faceted perspective on these practices, including accounts from those within the Sri Lankan health system.

iii. Having a comprehensive account of the Sri Lankan practices and a description of these practices in other countries across the globe, I then critically compared the practices in the two contexts.

iv. The findings revealed interesting trends in practice patterns, which significantly impacted the efficiency of the overall practice in focus. I will summarise and discuss these findings in this section.

The review of literature revealed that most published research described practices related to swallowing and communication in PWTs in minority world contexts. The resources used the processes commonly in place, and the outcomes of these practices were identified. Significant global trends in practices were evident in minority world contexts, including a multi-disciplinary,

and more recently interdisciplinary, approach to management of these difficulties in PWTs. It was also clear that practices in minority world countries were guided by well-established guidelines or national policies and protocols,securing more consistent practices across these contexts. The limited research published in majority world countries, on the other hand, revealed lack of protocol-driven practice, resulting in significant variations in practice within and between contexts, with poorly defined roles among health care professionals managing swallowing and communication in PWTs. It was evident that context influenced practices, and while minority world countries were moving towards global collaboration through the Tracheostomy Review and Management Services (TRAMS) (Garrubba et al., 2009) and initiatives like the Global Tracheostomy Collaborative (GTC) (Enamandram, et al., 2014), majority world countries struggled with coordination of practices even within their own work settings.

As an in-betweener, a Sri Lankan educated and working overseas, and someone who had explored literature revealing the significant impact of context on health practices, I entered Sri Lanka to research the efficiency of existing practices with preconceived notions. I had a premonition that I would find the obvious, and I believed that the efficiency of the health practices would be mainly affected by socioeconomic constraints resulting in a lack of resources or input, thereby reducing the efficiency of the service. However, what I found was that even though resource constraints existed in certain capital inputs required for swallowing and communication management, this was not always due to financial burdens, but more due to a lack of knowledge and awareness among professionals managing PWTs. It was also evident that available resources were underutilised for similar reasons.

As identified in previous research, management of swallowing and communication in PWTs requires well-equipped systems and skilled multidisciplinary teams (MDTs) (Norwood,

Spiers, Bailiss & Sayers), and practices across the world have often found this requirement a challenge,with inadequate knowledge and skills among professionals resulting in inconsistent practices and suboptimal care for patients (Mitchell et al., 2013;Shah et al., 2012; Zhu et al., 2012).Additionally, Sri Lanka faced another challenge: the prevalence of the medical model with deeply set professional hierarchies among health care professionals. The medical doctors were on top of the ladder and had more autonomy, power and authority in most aspects of health care practices, resulting in poor adherence to professional boundaries and a lack of collaboration with other professionals. This power possessed by the medical doctors penetrated the patient–professional relationship in such a way that the patients and their unpaid carers took the word of the doctor, with no questions asked, and were not involved in shared decision-making regarding their care. Despite facing evident health-related complications, patients often reported being satisfied with the health care practices, almost as though they were indebted, a feeling commonly reported among people receiving government-funded medical care in other majority world contexts (Jalil et al., 2017).

The minority world contexts, on the other hand have long since recognised the importance of role-sharing and worked towards developing MDTs and IDTs with well-defined roles and shared responsibilities for making clinical decisions (Dawson, 2014; Freeman-Sanderson et al., 2011; Grossbach et al., 2010; Happ et al., 2010; Tanner, 2006). Engagementof patients and their UNCGs in setting goals and making clinical decisions is widely practiced in health care services around the world (Sevin, Moore, Shepherd, Jacobs,& Hupke, 2009) and is known to bring about better health outcomes (Cooper et al., 2013; Oates, Weston,& Jordan, 2000) and improved patient satisfaction (Griffin et al., 2004), thereby improving the efficiency of the practice (Gausvik, Lautar, Miller, Pallerla,& Schlaudecker, 2015).

The practical implications of a collaborative approach to patient care are obvious, as this approach enables professionals from different disciplines to bring their specialised skills to the management of various difficulties encountered by a patient. Not a single profession possesses all the knowledge and skills required to provide holistic care to meet all needs of a patient. Different approaches to treatment and the participation of people from various professional disciplines are required to adequately address the needs of patients, especially PWTs (De Mestral et al., 2011; Hyland & Lee, 2003).For example, in a patient with a tracheostomy, a medical doctor might manage the underlying medical condition warranting a tracheostomy (e.g. like a chronic obstructive pulmonary disease [COPD]), through medication, while a dietician may optimise nutrition and ensure that patientsare provided their nutritional requirements, and an SLP may work on the same patients to restore swallowing and communication skills, thereby promoting safe oral feeding and improving quality of life. Involving the patients and their caregivers in these processes ensures that they understand their medical condition and treatment plans while being given appropriate training by the relevant professionals to continue safe practices upon discharge from the hospital. This instruction in turn reduces the readmission rates and improves the quality of life of the patients and their UNCGs, improving clinical outcomes and, eventually, organisation-related outcomes.

The question sought to answer was,‘How efficiently are health services in Sri Lanka managing swallowing- and communication-difficulties in PWTs?’Haycox and Noble (2009)have stated that efficiency of health care refers to how well resources are utilised to achieve desired outcomes. On this definition, the answer to my research question is that the efficiency of swallowing- and communication-management in PWTs in Sri Lanka is confounded by multiple factors,which vary depending on the perspective from which one views the practice. A

comparison of the practices in Sri Lanka with other contexts reveals that the overall efficiency of these practices maybe considered poor, because there are PWTs in Sri Lanka living with swallowing-difficulties and coughing excessively during oral feeding, with undiagnosed chest infections and with difficulty communicating their needs or calling for help. These difficulties seem to persist in this population, owing not only to a lack of resources, but also to the underutilisation of existing resources. Capital resources like speaking valves, for example, are available in the market, but none of the PWTs in this study were ever trialled on one. Similarly, specialised allied health professionals—specialising in communication and swallowing- and feeding-management,such as SLPs and dieticians—were part of the hospitals, butdid not regularly become involved in the management of PWTs. However, in exploring the espoused perspectives of those involved in the practice, it was evident that a majority of the PWTs, their UNCGs and the medical professionals involved in the practices reported satisfaction and considered the services efficient. This feedback may be due to the medical doctors, the main decision-makers embedded within the medical model, setting goals for these patients based on medical ideologies; for example, a doctor will focus on alleviating or reducing the impact of the underlying medical condition or the reason the patient may need a tracheostomy, for example COPD, vocal fold paralysis or airway obstruction.The focus is not on finding ways for the PWT to communicate or to swallow safely,but the underlying medical condition is being treated. The PWTs and their UNCGs, who are not informed or involved in understanding their medical condition or making decisions,do not question their management, and they accept and comply with the decisions made by the doctors.Thus, the prevalence of the medical model and the inherent power dynamics within the Sri Lankan health sector reduce the efficiency of healthcare practices.

8.4 The critique of the study: Strengths and limitations

I have chosen to critique the study theoretically and methodologically to highlight its contextual relevance and the methodological novelty while identifying its limitations.

8.4.1 Theoretical critique

The efficiency ofhealth care practices in majority world contexts has hardly been studied, and in this research,I have looked at healthcare efficiency from multiple perspectives in a majority world context,offering contextual and methodologicalnovelty.This study enables one to theoretically position the efficiency of health care within the macro-context, addressing not only the tangible factors (e.g. inputs, processes and immediate outcomes), but also the broader considerations (e.g. political, geographical and contextual influences)concerning health care practices. The theoretical basis and the conceptual framework of this study can be applied to investigate the health care efficiency of other health care practices in various contexts across the world and despite there being limited critical theory and previous studies to support the findings of this study, particularly within majority world contexts, the findings may well be applicable to other majority world countries,similar toSri Lanka.

8.4.2 Methodological critique

The strength of this study lies mainly in the rigorous method utilised for investigation of health practices in a previously under-researched majority world context. It is a unique and novel method in which triangulation is done at two levels: that of method (interviews, document reviews, observations) and that of data (interviews of professionals, PWTs and their UNCGs). The interviews of PWTs, their UNCGs and professionals involved in their management constituted a multi-perspective view of the practice from all those involved, and these perspectives were further supported by reviewing documentation pertaining to these practices

and actual observation of the practice as it happens. In effect, the triangulation of data and methods supported the credibility of the data and provided innovative ways of understanding healthcare practices. It revealed unique findings and provided a clear and deep understanding of the multiple factors affecting the efficiency of health care practices in majority world contexts.

Unlike quantitative research, qualitative research does not aim for the generalisability of the findings, but in this study, transferability of the findings to similar contexts where individuals in other majority world countries identify with the practices described in Sri Lanka is a definite possibility. My study was restricted to one government and one private hospital in the commercial capital of Sri Lanka, and I chose these sites to represent the best practices in the country, considering that Colombo is Sri Lanka's healthcare hub. However, some other government hospitals in Sri Lanka have a closer affiliation with universities housing allied health graduate programs, and thus may utilise the services of professions like SLPs more efficiently than the institutions in my study.

Focus groups are generally aimed at getting wide and diverse viewpoints by including participants from different fields. However, owing to the very nature of professional boundaries, I was unable to include medical professionals from various disciplines in the focus groups; for example, in the government hospital, the doctors in the focus group were all ear, nose and throat (ENT) specialists and ENT registrars, and in the private hospitals the doctors were all from the medical intensive care unit (MICU). An ideal focus group discussing the management of PWTs would have had participants from ENT, anaesthesiology, gastroenterology, intensive care, and nursing, along with allied health professionals such as SLPs and dieticians. However, since these professionals were unable to be gathered for a focus group,for practical reasons, I had to interview them individually, while acknowledging that the failure to include them in focus

groups reduced the chances of productive discussion between representatives of the different fields.

Despite its inherent limitations, this research has provided a unique method to study the efficiency of healthcare practices and has produced findings with widespread implications for healthcare in Sri Lanka and other majority world contexts.

8.5 Power-driven efficiency of practice model

In this section, I present my argument, reveal its outcome and explain the inferences I draw from the findings of my thesis. The efficiency of swallowing- and communication-management in PWTs in Sri Lanka can best be understood within a power dynamic model; where the nature of inter-professional and to some extent patient–professional relationships influence the overall efficiency of health care practices. Sri Lanka appears to have the basic resources to provide a service to PWTs and manage their swallowing- and communication-impairments, in a comparable manner to minority world contexts, but the efficient use of these resources is affected by the nature of power within the interpersonal relationships of those involved in the practice. I present the ‘Power driven efficiency of practice model’ in Figure 8.1 to represent the health care practices within majority world contexts like Sri Lanka.

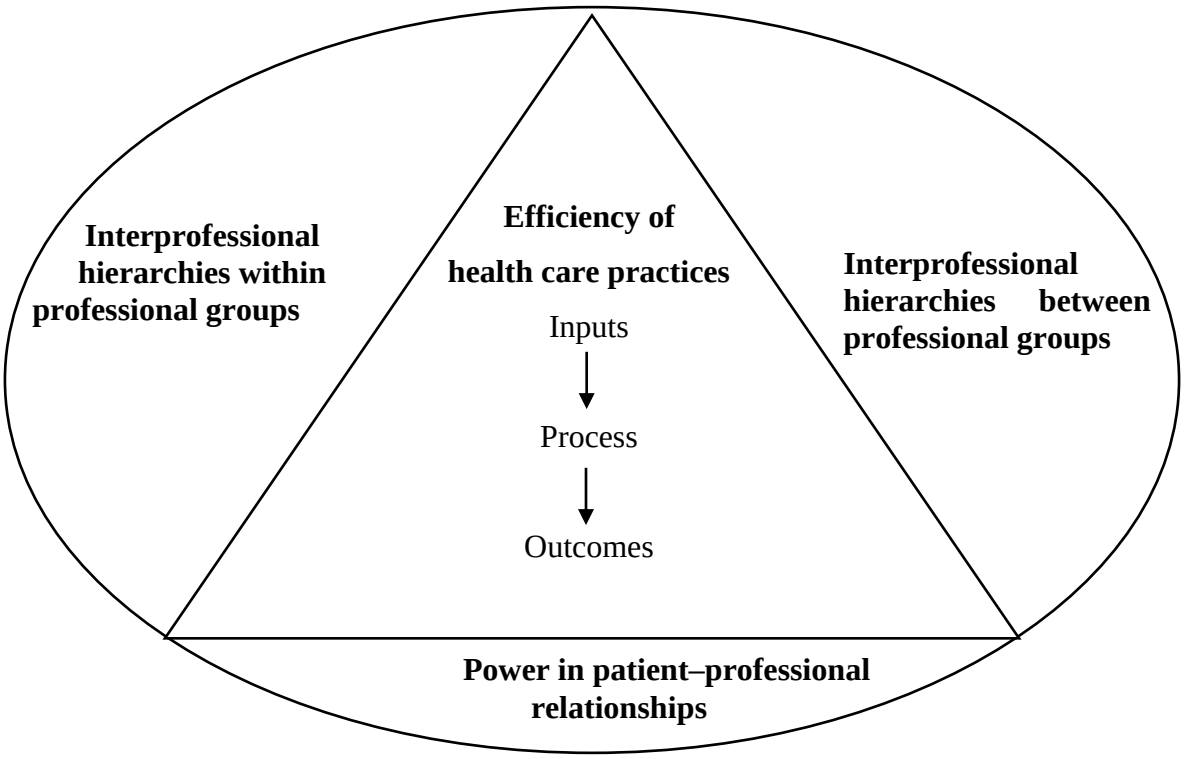

Figure 8.1.Power-driven efficiency of practice model

The influence of power dynamics on the efficiency of healthcare practices is evident within

the Sri Lankan health sector, and this influence can be explained with reference to three key elements of power: (a) hierarchies within professional groups; (b) medical dominance in the relationship between physicians and allied health professionals and (c) power in patient–professional relationships. The clinical focus of the study was practices related to swallowing and communication management in PWTs, but the above model (in Figure 8.1) can apply to other clinical practices in similar contexts.

- Hierarchies within professional groups are inherent among medical and allied health professionals and are based on level of education, seniority and background of where a professional was trained. These hierarchies result in clinical and organisational decisions being made mainly by the medical consultant or senior therapist, thereby impacting the inputs or resources utilised for the management of patients, the processes involved in assessment and intervention, and eventually the clinical and organisational outcomes. These inherent dynamics between professionals within disciplines result in poor communication among professionals (r, 2011), restricted autonomy and the deskilling of professionals (Broom, Adams,& Tovey, 2009), discrepancies in processes within and between hospitals, and impacts on how clinical decisions are made (Coombs, 2003; Steihaug, Johannessen, Ådnanes, Paulsen,& Mannion, 2016).
- Medical dominance affects the relationships of physicians and allied health professionals, and medical doctors appear to be above allied health workers like speech therapists and dietitians in the hierarchy. Often, the medical doctors disregard professional boundaries and take on the role ideally played by specific allied health professionals, and they only refer to these specialities on an *adhoc* basis. Similar findings have been reported in other majority world contexts (Wang et al., 2014); in the minority world, on the other hand, professionals have long been identifying the importance of multidisciplinary and interdisciplinary care to improve outcomes of health care practices (Atwal & Caldwel, 2005; Clayton et al., 2010; Ward et al., 2008). Profession-specific medical dominance presents a barrier to transforming health care in Sri Lanka from a medical model to a multidisciplinary model, despite having the human resources that can contribute towards creating a multidisciplinary team for managing PWTs and other clinical populations.

- Power in patient–professional relationships is evident within the Sri Lankan health sector, and this power affects mainly patient and UNCG satisfaction. As studies have reported in other majority world countries (Jalil et al., 2017), what this power dynamic produces blind trust from the patients and their UNCGs in the medical professionals, resulting in lower expectations and claims of satisfaction in the services offered to them, despite patients being faced with obvious health, financial and social burdens.

Considering these findings broadly, the questions that surface are as follows: How relevant is such a model in global contexts? Is power an inherent issue affecting health care efficiency in health care systems in other majority world contexts? Are power dynamics a concern in minority world contexts? Perhaps, the answer to these questions is 'yes':The nature of interpersonal relationships and the power dynamics among health care professionals and within patient–professional relationships is a key factor affecting health care practices in contexts across the globe.

The evidence for this proposition comes from the vast amount of published research addressing the nature of interprofessional relationships (Steihaug et al., 2016; Taran, 2011) and the nature of the patient–professional relationships (Bury, 2004) within various health sectors around the world. However, most of this research originates in minority world contexts, with very few recent descriptions of the nature of patient–professional relationships in majority world countries (Jalil et al., 2017). Studies done in health care systems in majority world contexts like South Africa, South Asia, and Latin America focus more on the availability of tangible resources and primary concerns like lack of access to health care (Peters et al., 2008), which are more evident in these contexts. There is a paucity of research aiming to explore the nature of relationship dynamics in health sectors in majority world contexts and a lack of research linking

power dynamics to practice efficiency,as I have done in this study. Considering that health care systems in most majority world countries face similar challenges, includinglimited clinical workforce, infrastructure challenges, and poor reporting systems (Robertson et al., 2009) and health care systemswhere medical professionals have inherent power within the health systems (Claramita, Van Dalen, & Van Der Vleuten, 2011),the model for power-driven efficiency I have proposed can be used to look at the efficiency of clinical practices in these contexts.

8.6 Implications and alternative realties: Where to go from here?

An understanding of the effect of power dynamics among health care professionals on the efficiency of the practices leaves one to face the deep, fundamental reality of the social relationships inherent within the Sri Lankan health system. The biggest problem is that such relationships in healthcare lead to practically conceived ideologies of how people view their lives: They believe that whatever is currently in place is the norm, and they have accepted it as their reality. The question is, if so, how does one bring about awareness of the deficiencies in current processes to those involved in the practice, when they believe there is nothing wrong? How does a healthcare system move from a model dominated by the medical profession to a more efficient practice that empowers other healthcare professionals to function in integrated teams, working not under but alongside medical doctors and the patients they serve?

It has been well reported in literature that MDTs and IDTs provide optimal care for PWTs (Alvo & Olavarría, 2013; Garuti et al., 2014; Mitchell et al., 2013; Speech Pathology Australia, 2005). Researchers have demonstrated that even in other clinical populations, team-based, collaborative care improves patient outcomes and provides more effective and efficient health care to the people it serves (Epstein, 2014). Researchers have also reported that apart from bringing about improved clinical outcomes, interdisciplinary collaboration also increases job

satisfaction, reduces turnover and decreases medical costs (Hughes & Fitzpatrick, 2010), while improving clinical process outcomes, patient satisfaction and adherence rates (Reeves, Perrier, Goldman, Freeth & Zwarenstein, 2013),and thus improving the efficiency of the services. There are, however, several daunting barriers to implementing such practices (McInnes, Peters, Bonney & Halcomb, 2015), and in Sri Lanka the biggest problem appears to be the inherent nature of the power possessed by the medical practitioners.

The good news is, most health care models in minority world contexts also at some point transformed their practice from a medical model to a social model where multidisciplinary and interdisciplinary approaches to patient care became an eventual reality (Arora et al., 2008; Hickman, et al., 2015; Körner, 2010). There are several proposed models published in the literature looking at ways to reorganise healthcare, transform practices and reengineer power within health care systems (Lukas et al., 2007; Orchard, Curran, & Kabene, 2005). As such, ample resources are available to improve efficiency and transform current health practices in Sri Lanka. There are several approaches to choose from:It could be a top-down approach where the changes are implemented from a macro-political level, where health ministries and government organisations implement standards calling for reorganisation of health care practices, or it could be a bottom-up approach where changes made at the level of clinical practice eventually leads to adoption of integrated approaches (Lee et al., 2015).

Personally, through my own experiences, I believe that the bottom-up approach in which power is reengineered by empowering allied health professionals to function to their maximum potential within their professional boundaries is the best step forward. As described in Chapter 1, when I moved out of Sri Lanka to the United Arab Emirates (UAE), I was in an unfamiliar environment, working in a hospital with a multinational workforce. Working in acute care for the

first time, I found the task of interacting with the medical professionals in various wards daunting; perhaps due to the ideologies I subconsciously brought with me from my youth in Sri Lanka. However, the seniors in the team I worked with provided me with the clinical training required and encouraged me to always fall back upon my basic foundations and evidenced-based practice to make clinical decisions. This was an art of clinical decision-making which I found emancipating, and it enabled me to convey my clinical decisions with confidence to the multidisciplinary team. In addition, I realised that the ability to clinically reason and communicate my recommendations to the patients and their families were also met with more success when this art of clinical decision-making became pervasive for me.The art of clinical decision-making which I have had the opportunity to experience is liberating, and as stated by Ratner (2006), required more than what clinicians learn in graduate school. Ratner (2006) explains that 'clinical skills grow with the application of currently available data, not simply personal, educational, and clinical experience'. The dynamic nature of practices in fields like speech language pathology requires clinicians to be updated regularly and to seek the latest information to improve clinical effectiveness. The art of such clinical decision-making practices when instilled in allied health professionals may prove emancipatory, increasing confidence and providing them with the ability to make strong clinical judgements and communicate these decisions more effectively to the medical doctors. This freedom may well be the first step in transforming health practices from power-ridden medical models towards more multidisciplinary and interdisciplinary approaches.

The next question is, 'What is the best way to provide these skills to the clinicians in Sri Lanka?' Previous studies have demonstrated the barriers and difficulties to implementing evidence-based practices and to the art of clinical decision-making among professionals,

especially in majority world contexts (Dans & Dans, 2013; Lai, Teng,& Lee, 2010). However, researchers and clinicians, especially in recent years, have suggested and trialled several ways of implementing and instilling allied health professionals with good decision-making skills and empowering them to optimally function in health care systems. Very recently, the National Health System (NHS) in the UK published a commissioning strategy, 'The Allied Health Professions into Action', a document directed at leaders and decision makers in health care to 'inform and inspire the system' concerning the role of allied professionals and to highlight the way these professionals can contribute to and support healthcare systems (NHS, 2017). This document defines the role of 12 allied health professional groups and proposes a framework to develop a plan of delivery. They propose that boards, academics and higher education institutions review health professionals' strategies against the framework, which calls for commitments on the part of allied health professionals to the people they serve. The framework also directs thinking towards methods to enable allied health professionals to move forward; these include the belief that allied health professionals can lead change, recognising that their professional skills can be further developed and encouraging them to evaluate and improve their contributions to health care, while ensuring methods to document and prove these contributions. The framework also proposes methods to utilise information technology to enhance knowledge, enabling consistency in practices within and across settings and providing continuous support to the people they serve. The framework further highlights the role of the leaders of healthcare in empowering allied health professionals to contribute to their fullest potential to enhance the efficiency of healthcare systems.

Considering that minority world contexts like the UK, who have had multidisciplinary and interdisciplinary practices inherent within their systems for many years (Atwal & Caldwel,

2005; Mullender et al., 2014; McRae et al., 2015),have only recently been looking to further empower their allied health professionals, it may be overly ambitious for me to suggest that Sri Lanka should develop such a framework and evaluate their practices against such criteria, when the present medical model still predominates. However, this can be an eventual reality, especially because improving rehabilitation services within the country is one of the strategic objectives of the Sri Lanka's Health Master Plan 2016–2025 (Ministry of Health Sri Lanka, 2016).As noted, one of the goals for rehabilitation services is 'to strengthen advocacy and multi-sectoral coordination at all levels' (Ministry of Health Sri Lanka, 2016).

There is a much groundwork that needs to be done to empower allied health professionals in Sri Lanka and work towards this transformation, and it may well begin with improving awareness among allied health workers of their own potential and scope, while upskilling them through focussed workshops on clinical decision making with patients they encounter in their daily practice (Bangera, 2014; Black, Balneaves, Garossino, Puyat,& Qian,2015). Practical steps like providing easy access to the Internet to allied health professionals at work to encourage and augment evidence-based clinical practice may be a good option to consider (Ortiz & Clancy,2003). Moreover, as suggested by Reeves et al. (2008), educating and promoting interactive learning among health professionals from various fields through national workshops, seminars and conferences with the explicit purpose of improving interprofesional team work and collaboration may prove an effective way to impact the thinking of professionals at all levels of the professional hierarchy within the Sir Lankan health care system.

8.7 Suggestions for future research

The possible areas for further research may involve adapting the methodology utilised in this study to investigate efficiency of other health care practices in Sri Lanka and practices in

other contexts and countries across the world. Specifically, for Sri Lanka, I believe it is important to move forward towards interprofesional collaboration in health care,so it may be a good start to investigate the expert opinions of professionals, policy makers, hospital management and the health ministry regarding which above- suggested strategies may work best in Sri Lanka. Implementation of the chosen methods to empower allied health professionals and promote interprofessional collaboration, followed up by studies to investigate the impact of these methods on health care efficiency, may be important to consider.

8.8 Final conclusions and recommendations

In this research, I have studied practices related to swallowing and communication in PWTs in Sri Lanka, and highlighted the confounding factors that impact the efficiency of health care in a majority world country compared to minority world contexts. The striking finding was that it is not the expected financial, capital and human resource constraints, common to the majority world, that most impact the efficiency of health care practices in Sri Lanka; rather, it is the inherent power dynamics among the health professionals which compromises the efficiency of these processes. I found that a primary mechanism hindering the achievement of good outcomes compared to those in minority world contexts stems from the rigid medical hierarchy nested within the system,arising from the prevalence of the medical model in Sri Lankan healthcare. This model causes poor utilisation of existing resources and results in the reduced efficiency of the health care practices currently in place. There was also significant evidence that the power exercised by the medical professionals also penetrates the patient–professional relationship, resulting in presumed satisfaction on the part of patients and their UNCGs, despite having several health-related concerns.

I suggest that the best way to improve the situation is to work towards transformation of health care from a medical model towards anIDT approach to patient care. From my own personal experience, and from trends in health practices in other parts of the world, it appears that the best way to achieve this transformation will be to empower allied health professionals to function to their full capacity,thus ensuring positive overall outcomes for the patients they serve.

8.9. Participants' Engagement & Research dissemination

Effective dissemination of research is the responsibility of the researcher ensures that the findings of the study reaches the people who can make use of them, to maximise the benefit of the research without delay (Chen, Diaz, Lucas & Rosenthal, 2010). In order for the findings of this study to have an impact on practice patterns in majority world contexts, requires changes in processes, policies most importantlyattitude among patients and professionals. Such changes take time but a good point to start maybe to make professionals aware of the impact power dynamics have on the efficiency of the health care practices they offer.

There are several proposed methods to achieve dissemination of research findings and the most widely used techniques is through presentations in national and international conferences and through scientific publications (Edward, 2015). Presenting my findings in local conferences in Sri Lanka and other majority world countries may raise awareness among professionals regarding the issue in hand. This thesis is written in a manuscript format and the manuscripts will eventually be published in peer reviewed journals and published online. In addition to these methods, a copy of the thesis will be provided to the participating hospitals so that the professionals participated the study have access to the findings.

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Appendices

Appendix 1. RANCHO LOS AMIGOS SCALE

AKA Level of Cognitive Functioning Scale (LCFS)

____ (1) **Level I** - No Response.

Patient does not respond to external stimuli and appears asleep.

____ (2) **Level II** - Generalised Response.

Patient reacts to external stimuli in nonspecific, inconsistent, and non-purposeful manner with stereotypic and limited responses.

____ (3) **Level III** - Localised Response.

Patient responds specifically and inconsistently with delays to stimuli, but may follow simple commands for motor action.

____ (4) **Level IV** - Confused, Agitated Response.

Patient exhibits bizarre, non-purposeful, incoherent or inappropriate behaviours, has no short- term recall, attention is short and nonselective.

____ (5) **Level V** - Confused, Inappropriate, Nonagitated Response.

Patient gives random, fragmented, and non-purposeful responses to complex or unstructured stimuli - Simple commands are followed consistently, memory and selective attention are impaired, and new information is not retained.

____ (6) **Level VI** - Confused, Appropriate Response.

Patient gives context appropriate, goal-directed responses, dependent upon external input for direction. There is carry-over for relearned, but not for new tasks, and recent memory problems persist.

____ (7) **Level VII** - Automatic, Appropriate Response.

Patient behaves appropriately in familiar settings, performs daily routines automatically, and shows carry-over for new learning at lower than normal rates. Patient initiates social interactions, but judgment remains impaired.

____ (8) **Level VIII** - Purposeful, Appropriate Response.

Patient oriented and responds to the environment but abstract reasoning abilities are decreased relative to premorbid levels.

Appendix 2. LITERATURE REVIEW DATA EXTRACTION FORM

Swallowing and Communication Management in PWTs

Organisational Details of Study

Author, Year:

Journal/Source Study ID NR /:

Country of origin:

Publication type (Full text / Abstract / Book chapter / internal progress report or other):

Other relevant publications in DE-form

Date: (Decision pending / Check references / Use for discussion/ Excluded without listing/ Excluded with listing / other)

Notes / Short description:

TYPE OF STUDY	COMMENTS
e.g. case Study, randomised control study, descriptive, cohort	
INPUTS	
HUMAN RESOURCES / PROFESSIONALS INVOLVED IN MANAGEMENT	COMMENTS
e.g. Nurses, Speech therapists etc.	
FISCAL	COMMENTS
e.g. Costs involves in the services like capital purchases	
CAPITAL	COMMENTS
e.g. Communication device	
PROCESS	
SCREENING METHODS/TOOLS FOR	COMMENTS

SWALLOWING	
e.g. Modified Blue Dye Test	
ASSESSMENT METHODS/TOOLS FOR SWALLOWING	COMMENTS
e.g. Modified Barium Swallow	
TREATMENT METHODS/TOOLS/EQIUIPMENT FOR SWALLOWING	COMMENTS
e.g. Diet Modification	
SCREENING METHODS/ TOOLS FOR COMMUNICATION	COMMENTS
e.g. Family interview	
ASSESSMENT METHODS/ TOOLS FOR COMMUNICATION	COMMENTS
e.g. Formal Assessments	
OUTCOMES / OUTPUTS	
e.g. Did the study specify outcomes	
e.g. Reports on Patient Satisfaction	
e.g. Reports on return to oral feeding	
e.g. Reports on use of AAC for communication	

Appendix 3. Interview Schedule for Professionals

Data Collection Conduct Sheet for Focus Group Interviews

Date: _____ Time: _____Venue:_____

Interviewee group type:	**Hospital**	**Document Code**
	Name:	

Participant Details

Participants' Initials	Profession/ Discipline	Participant's Assigned Code

SCRIPT FOR FOCUS GROUP: PROFESSIONALS

QUESTIONS	RATIONALE
Hello everyone. Thank you everyone for coming, we really appreciate that. So, as we have discussed prior to this meeting the reason we are gathered here today is to discuss the swallowing and communication management in people with tracheostomies within the Sri Lankan context. Before we move let's take a few minutes to introduce ourselves. I am Nuzha Ishak the primary researcher. I am a speech therapist by profession and my special interest lies in critical and long term care. My Research Assistant is Ms Uvini. She is a Speech Therapy and Audiology graduate from the University of Kelaniya. I will conduct the discussion and Uvini will observe and take notes. Your personal opinions, experiences and views are very important for us. There are no right or wrong answers. Please feel welcome to express yourself freely during the discussion. This conversation will be recorded on tape. This is only for purpose of the research, only Uvini and I will listen to the tape. No names or personal information will be used in the report. Some practical issues: the discussion will last for about one hour. We ask you to please switch off your mobile phones. Please give everyone the chance to express their opinion during the conversation. You can address each other when expressing your opinion, we are only here to assist in the discussion. The emergency exits are located …… and wash rooms are …… Is everything clear about the course of the focus group discussion?	Before starting the focus group discussion, all participants were informed about the purpose of the discussion, confidentiality and practical issues
Please share your name and your study subject?	For acquaintance with the participants and to break the ice
	(page 3/3)
How often do you see patients with tracheostomies in your practice	Prevalence of tracheostomies
If prevalence low & they say that they don't have many patients with tracheostomy: why do you think that tracheostomies are not very common here?	Prevalence of tracheostomies
An ICU patient is 5 – days post-surgical tracheostomy following head injury. The patient has been weaned off ventilator and has a GCS of 12. The patient and family	Vignette as an ice breaker and as a means of giving direction to the interview.

are concerned about his communication of needs and his nutrition	
Please describe the course of stay for a patient such as this in your hospital.? How long will such a patient be in the hospital?	Organisational
Who will be the professionals involved in the care of such a patient? Who makes the decisions regarding their mode of nutrition? Who aides them in communication?	Information regarding professionals involved and their roles
How do professionals make patient related decisions? Do you communicate with each other, if so can you give us an example of such an interaction?	
How are the needs of swallowing and communication assessed for such a patient?	Practices as espoused by the experts
How important do you think is the need to swallow safely and to be able to communicate their needs for these patients? Why do you think so?	Perception of the problem by the experts? Priority given to the feeding and communication needs of PWTs
What is your opinion on the knowledge among the professionals about managing the swallowing and communication needs of these patients?	Human resource characteristics
Do you think that you have constraints and challenges faced in managing swallowing and communication in PWTs, if so can you describe these challenges?	Perception of the challenges and barriers
Can u please discuss the budget allocated for critical care and the availability of the required resources for managing swallowing and communication in your patients?	Understanding the financial resources available
How is the cost of basic consumables required for tracheostomy care? How about other equipment like pulse oximeters/ cardiac monitors, stethoscopes, modified diets etc?	Understanding the financial and capital resources available
Describe the options available to you to provide nutrition for the patients with a trach tube? Please elaborate on the meal times and the precautions taken to prevent aspiration during feeding?	Understanding Capital Resources Espoused practices related to management.
How about the options available for these patients to communicate?	Espoused practices related to and communication management.
Can you describe the family involvement in these cases? Do you feel they follow your recommendations?	Understanding espoused Perspectives of Family
How often do you face family complaints and how are these handled?	Espoused perspective of Patient satisfaction
Are your practices related to swallowing and communication management governed by policy? If so describe these policies and how it is developed & implemented	Reported organisation of practices
What do you think is the incidence of aspiration	Understanding Clinical outcomes

pneumonia in PWT; s? What is the mortality rate among this patient population?	
How do you as professionals feel with working tracheostomised patients?	Understanding paid caregiver Satisfaction : outcome measure
Do you have any comments that you would like to make on the management of swallowing and communication in patients with tracheostomy in Sri Lanka?	At the end of the focus group discussion, the participants were given the opportunity to add remarks or suggestions

Interviewer Comments
E.g. Body Language and other observations

Appendix 4: Interview schedule for PWTs

Data Collection Conduct Sheet for In-depth Interviews of PWT

Date: _____ Time: _____ Venue: _____

Interviewee Hospital Document Code

Name: Name:

Designation: Area:

GENERAL INFORMATION

Sex	M F
Age	
Marital Status	Married/Common-law/partner Widowed Separated/Divorced Single/Never Married
Number of children	
Occupation	
Highest level of Education	Less than high school High school or equivalent (GED) Trade/Vocational/Comm. College College Beyond college
Number of years of education	
Religion	
Country of birth	
City/town of residence	
Language at home	
Language at work	

INTERVIEW QUESTIONS	RATIONALE
My name is Nuzha and this is Uvini. We are speech therapists visiting the hospital to research on the management of swallowing and communication in people who have tracheostomies.I'm really interested in hearing what you have to say about this issue and Thank you very much for agreeing to take part in the interview. This will help you and many others like you. I will conduct the discussion and Uvini will observe and take notes. Your personal opinions, experiences and views are very important for us. There are no right, or wrong answers and you can choose to express yourself via writing, pointing or gestures. Please feel welcome to express yourself freely during the discussion. This conversation will be recorded on tape. This is only for purpose of the research, only Uvini and I will listen to the tape. No names or personal information will be used in the report. To begin with, I was wondering if you could tell me something about yourself (probes: where you were born, where you grew up, work and family, who live with, involvement in community)?	Informing the participant about the purpose of the interview and discussing the confidentiality aspects
What is your typical day like?Take today, for instance, what did you do?	Ice breaker and also information about the activities the patient is involved in
How long have you had your tracheostomy?	Understand the impact and experience?
What do you understand about your condition? What do you think is the purpose of the tracheostomy? What is your main concern with regard to the presence of the tracheostomy tube?	Communication from medical team regarding the patient's condition to the patient & their understanding of the problem
What do you understand the outcome would be with regard to your ability to swallow and communicate now that you have a tracheostomy?	Communication from medical team regarding the patient's condition to the patient
How has your present condition impacted you financially?	Financial implications
Who pays for your medical needs?	Financial implications
Have you had a swallow assessment? / Communication assessment? Who did the assessment?	Human resource: Professionals involved in the care.
Can you describe how your swallowing ability was	Process and further details of

assessed?	human resource Capital equipment
What are the communication options that have been trialled with you?	Process and further details of human resource Capital Equipment
What do you think about the recommendations provided from your medical team with regard to your swallowing and communication?	Perception & Attitude of the patient
How concerned are you about your ability to communicate and eat / swallow safely?	Perception & Attitude of the patient
Describe the complications that you feel arise due to the presence of the tracheostomy	Health outcomes related to tracheostomy
Do you feel frustrated about the complications arising from the tracheostomy? If yes, please describe	Outcome: Impact
Are you satisfied with how your swallowing and communication needs have been managed? Why do you say so?	Outcome: satisfaction
Do you have any comments that you would like to make on how your swallowing and communication abilities have been managed?	At the end of the focus group discussion, the participants were given the opportunity to add remarks or suggestions

Interviewer Comments
E.g. Body Language and other observations

Appendix 5: Interview schedule for UNCGs

Data Collection Conduct Sheet for In-depth Interviews of PWT

Date: _____ Time: _____ Venue: _____

Interviewee	Hospital	Document Code
Name:	Name:	
Designation:	Area:	

GENERAL INFORMATION

Sex	M	F
Age		
Occupation		
Relationship to PWT		
Highest level of Education	Less than high school High school or equivalent (GED) Trade/Vocational/Comm. College College Beyond college	
Language at home		
Language at work		

Interview Structure & Script	RATIONALE	
Introductions First of all, let me introduce our team: I'm Nuzha Ishak and this is Uvini my research assistant. We're working on a project with the University of Kwa - Zulu – Natal SouthAfrica. The purpose of this interview is to get your opinion as a person who may have been closely associated with a person who has or has had a tracheostomy or breathing tube.	Before starting the focus group discussion, all participants will be informed about the purpose of the discussion, confidentiality and practical issues	

We value your opinions and want you to know that we hope to use the information to learn more about important health issues and needs associated with swallowing and communication in people with tracheostomies. This will enable us to look at the advantages and the challenges if any encountered in the present services. This conversation will be recorded on tape. This is only for purpose of the research and, only Uvini and I will listen to the tape. No names or personal information will be used in the report. Let me tell you about our recording process. As you can see, we have a tape recorder today. We want to record these interviews because we simply can't write fast enough to get it all down. We will not identify namesin the transcript, Do you agree for merecord the interview?		
How are you related to the person with the tracheostomy and what are some of the biggest frustrations you have faced since he was hospitalised?	Introduction / purpose of understanding the relationship of the stakeholder to PWT	
What do you understand about the patient's condition? What do you think is the purpose of the tracheostomy or breathing tube? What is your main concern with	Knowledge of tracheostomies, the need for the tracheostomy and the complications associated with it? How much of a background has been given to the	

regard to the tracheostomy tube?	family	
What do you understand about the outcome would be with regard his/ her ability to swallow and communicate now that he / she has a tracheostomy?	Communication of Plan of care	
What are the costs involved in caring for the person with tracheostomy?	Financial aspects	
Who pays for the medical needs of the PWT	Financial aspects	
Who in the medical team has explained to you and the PWT regarding the impact of the tracheostomy on swallowing and communication?	Human resource / role of the medical personnel as described by the stakeholder	
What are the options that have been given to you to restore his / her communication and swallowing skills? What advise have you been provided with regard to communicating with the individual with a tracheostomy?	Human resource / role of the medical personnel as described by the stakeholder	
How often do the various professionals attend to his / her communication and swallowing needs?	Human resource / role of the medical personnel as described by the stakeholder	
Have you been explained regarding the findings of a swallow / communication assessment? If so by whom?	Human resource / role of the medical personnel as described by the stakeholder	
Can you describe how the swallowing ability of the PWT was assessed?	Process and equipment/ materials used	
What are the communication options that have been trialled with your PWT?	Process and equipment/ materials used	
What do you think about the recommendations provided from your medical team	Perceptions & Attitudes of stakeholder	

with regard to your swallowing and communication?		
How concerned are you with the patient's ability to communicate with you and to be able to eat orally?	Perceptions & Attitudes of stakeholder	
Describe the health complications that you feel arise due to the presence of the tracheostomy	OUTCOME: Understanding of health impact and outcomes	
Are you satisfied with the way the hospital has managed the swallowing and communication needs of your family member? Why do you say so?	OUTCOME: Satisfaction	

	Interviewer Comments
	E.g. Body Language and other observations

Appendix 6: Observation Schedule

Checklist for equipment required for swallowing & communication management in wards			
Equipment	**Y/N**	**Comments /alternatives**	
Suction Apparatus			
Suction Catheters			
Sterile Gloves			
Sterile Distilled Water			
Oral Suction Catheter			
Syringes for cuff deflation			
Humidification Devices			
Pulse Oximeter/monitoring devices			
Gauze			
Speaking valves			
Pen /paper			
White board			
Nurse Call Bell			
Communication Board			
Other AAC devices			
Positioning aides (adjustable bed, pillows, modified seating)			
Modified diets			
Food thickener			
Stethoscopes			
Blue Dye for screening of swallow function			
Instrumental Swallow Assessments			

Enteral Feeding Options					
Professional	**Y/N**	**Nature of interaction** **(sa- swallow assessment, ca-communication assessment, e-education, ts-swallowing therapy tc -communication therapy, wr- ward round)**	**Describe interaction** **(recommendations provided: sg-swallow guidelines/ feeding strategies; efa- advice on enteral feeding; sv- speaking valve; cs-communication strategies)**	**Intervention**	
				Frequency	**Duration**
General Physician					
Intensivist					
ENT Surgeon					
Speech Therapist					
Physiotherapist					
Dietician/ Nutritionist					
Nursing (FTE)					
House officers					
Respiratory Therapists					
Other					

Meal time Observation

Criterion	Y/N	Description & comments
Oral Feeding		
Modifying diets		
Enteral Feeding		
Positioning		
Speaking valve trials		
AAC communication		
Signs of aspiration		
Aspiration Precautions		
Family Involvement		
Interaction on PWT with unpaid caregivers (UNCGs)		
Interaction of PWT & Professional		
Signs of frustration / depression		

Appendix 7. Document Review Data Extraction Form

Date			Hospital	
Initials of PWT			Ward	
Date of admission			Document type	

Brief History of Patient
What is current diagnosis and reason for being tracheostomised?
Level of alertness and general description of the patient? (noted restraints and Patient awake engaging / but with no one to engage)
How long has patient been tracheostomised?
How long has the patient been in hospital?
What type of tracheostomy tube has been inserted? un/cuffed? un/fenestrated?
Current Mode of Communication
Current Mode of Nutrition

Documentation – General description		
Criterion	Y/N	Description & comments
Documentation Shared with family		
Daily documentation		
Documentation of referrals & feedback		
Notes on swallowing & communication or decannulation (made by professional?)		
Evidence of ward rounds or other interdisciplinary communication		
Referrals between professionals		
Professionals involved		
Evidence of the trial of speaking valve, AACcommunication		
Documentation storage and retrieval		

Appendix 8: Profile of findings

Process	Global practices (country)	Sri Lankan practices
Processes involved in swallowing-management		
Screening of swallowing		
Assessment of swallowing		
Intervention of swallowing		
Processes involved in communication management		
Communication assessment		
Communication intervention		
Other significant findings in practice patterns		
Professionals involved		
Policies related to practice		
Other		

Appendix 9. Ethics Approval

Appendix 10. Ethical approval governmental hospital and gatekeeper permission

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

18 November 2015

Mrs FN Ishak (214585060)
Discipline of Speech Language Pathology
School of Health Sciences
nuzhak@yahoo.com

Protocol: Efficiency of the management of swallowing and communication tracheostomized populations in Sri Lanka.
Degree: PhD
BREC reference number: BE198/15

EXPEDITED APPLICATION

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application received on 16 April 2015.

The study was provisionally approved pending appropriate responses to queries raised. Your responses dated 17 October 2015 to queries raised on 13 May 2015 have been noted by a sub-committee of the Biomedical Research Ethics Committee. **The study is given full ethics approval on condition that an Amendment letter will be sent to BREC to add the co-supervisor based in Sri Lanka.**

This approval is valid for one year from **18 November 2015.** To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **RATIFIED** by a full Committee at its meeting taking place on **08 December 2015.**

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Professor J Tsoka-Gwegweni
Chair: Biomedical Research Ethics Committee

cc supervisor: pillaym1@ukzn.ac.za
cc postgrad: nenep1@ukzn.ac.za

Biomedical Research Ethics Committee
Professor J Tsoka-Gwegweni (Chair)
Westville Campus, Govan Mbeki Building
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Telephone: +27 (0) 31 260 2486 **Facsimile:** +27 (0) 31 260 4609 **Email:** brec@ukzn.ac.za
Website: http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx

sion

My No.AA(3)/ETH/COM/2015

[redacted]ri Lanka,
Colombo.

20.07.2015

Ms. Fathima Nuzha Ishak
Doctoral Student, (Student No.214585060)
University of KwaZulu-Natal,
South Africa.

REQUEST FOR A STUDY ON "EFFICIENCY OF PRACTICE PATTERNS INVOLVING COMMUNICATION / SWALLOWING MANAGEMENT IN TRACHEOSTOMIZED POPULATION IN SRI LANKA"

This refers to your letter dated 25th May, 2015 on the above subject.

I wish to inform you that the permission has been granted by the Ethical Committee of [redacted] Sri Lanka for your request.

Chairman
Ethical Review Committee

Deputy Director,
[redacted] Colombo.

Appendix 11. Gatekeeper permission Private Hospital

[redacted]

18th March 2016,

Ms Fathima Nuzha Ishak,
Doctoral Student, (Student No 214585060)
University of KwaZulu- Natal,
South Africa.

Request for permission to conduct Research

I wish to inform you that permission has been granted to do an observational research under my supervision.

Thank you,

Dr. Uthpala S. Malawara Arachchi
MBBS(SL), MSc. (Med Admin), Dip.Occ.H&S(Col)
SLMC Reg. 19197
Medical Superintendent,
[redacted]

Dr.Uthpala Malawara Arachchi,
Medical Superintendent.

Sri Lanka NATIONAL QUALITY AWARD WINNER 1998

Winner

Appendix 12. Informed consent forms

]

nformation Sheet / Consent Form for

Professionals

I, am Fathima Nuzha Ishak, a doctoral candidate at the University of KwaZulu-Natal in South Africa. I am a Speech Pathologist. You are invited to take part in my doctoral research study titled 'Efficiency of the Management of Swallowing & Communication in Tracheostomised Populations in Sri Lanka' which will be conducted at the Nawaloka Hospital, Sri Lanka.

1.Purpose of the study

The purpose of this research is to understand the efficiency of the current practice patterns in the management of swallowing and communication difficulties in tracheostomised patients in Sri Lanka, thereby providing a stepping stone towards improvement of these services.

2.Voluntary participation

Your participation in this study is voluntary. You are free to not participate. If you decide not to participate or withdraw from the study you may do so at any time.

3.Duration, procedures of the study and participant's responsibilities

The procedures to be carried out are interviews conducted by the investigator, which may be done in groups where other members participate or an individual basis. The study also includes observations within the clinical setting and review of documents/ patient charts.You will be required to take part in a group/individual interview, where you will part take in discussions with regard to tracheostomy management.

The interviews will last one to one and half hours and observations will be carried during one typical inpatient admission day. We require these interviews and observation sessions to be

audio and /or video recorded for analysis. We also require documented notes in patient charts to be reviewed.

4 Potential benefit

Participation in this study may benefit you/others by providing valuable information regarding the efficiency of the current practice in improving feeding and communication services to patients with a tracheostomy. It will provide suggestions on how decision makers can try to strengthen services pertaining to dysphagia and communication management in tracheostomised people in Sri Lanka.

5.Risks, hazards and discomforts

There are no potential risks or hazard associated with taking part in this study.

6.Confidentiality

Confidentiality of all records is guaranteed and no information by which you can be identified will be released or published. These data will never be used in such a way that you could not be identified in any way in any public presentation or publication without your express permission. The data collected will be stored away in locked cabinets and password protected folders that is accessible only to the researcher and supervisor of the study.

8.Termination of study participation

You may withdraw your consent to participate in this study at any time, with no penalty or effect on medical care or loss of benefits. Please notify the as soon as you decide to withdraw your consent.

9.Clarification

If you have questions about any of the procedures or information, please feel free to ask the investigator any time. The contact details are provided for you at the end of this document.

10.To be completed by the participant

The participant should complete the whole of this sheet himself/herself.

1.Have you read the information sheet? (Please keep a copy for yourself)

YES/NO

2.Have you had an opportunity to discuss this study and ask any questions?

YES/NO

3.Have you had satisfactory answers to all your questions?

YES/NO

4.Have you received enough information about the study?

YES/NO

5.Who explained the study to you?

……..

6.Do you understand that you are free to withdraw from the study at any time without having to give a reason and without affecting your future medical care? YES/NO

7.Sections of your medical notes, including those held by the investigators relating to your participation in this study may be examined by other research assistants. All personal details will be treated as STRICTLY CONFIDENTIAL. Do you give your permission for these individuals to have access to your records? YES/NO

8. Have you had sufficient time to come to your decision?
YES/NO

9. Do you agree to take part in this study?
YES/NO

Participant's signature……..……
Date…….
Name (BLOCK CAPITALS)……

By the investigator

I have explained the study to the above volunteer and he/ she has indicated her willingness to take part.

Signature of investigator……...……Date…….

Principle Investigator: FATHIMA NUZHA ISHAK
Contact Information: Mobile Number: 0094 -773565065 / 00971502869484
Email Id: nuzhak@yahoo.com

Information Sheet / Consent Form PWT and UNCG

I am Fathima Nuzha Ishak, a doctoral candidate at the University of KwaZulu-Natal in South Africa. I am a Speech Pathologist. You are invited to take part in my doctoral research study titled 'Efficiency of the Management of Swallowing & Communication in Tracheostomised Populations in Sri Lanka' which will be conducted at the National Hospital, Sri Lanka

1.Purpose of the study

The purpose of this research is to understand the efficiency of the current practice patterns in the management of swallowing and communication difficulties in tracheostomised patients in Sri Lanka, thereby providing a stepping stone towards improvement of these services.

2.Voluntary participation

Your participation in this study is voluntary. You are free to not participate. There will be no loss of medical care or any other available treatment for your illness or condition to which you are otherwise entitled. If you decide not to participate or withdraw from the study you may do so at any time.

3.Duration, procedures of the study and participant's responsibilities

The procedures to be carried out are interviews conducted by the investigator, on an individual basis. The study also includes observations within the clinical setting and review of documents/ patient charts.

The interviews will last one to one and half hours and observations will be carried during one typical inpatient admission day. We require these interviews and observation sessions to be audio for analysis. You will be required to take part in an interview to discuss the management of your/ your family members swallowing and communication needs.

4. Potential benefit

Participation in this study may benefit you/others by providing valuable information regarding the how communication and swallowing needs of patients like you are being managed in Sri Lanka. It will help improve services for you and others like you.

5.Risks, hazards and discomforts

There are no potential risks or hazard associated with taking part in this study.

6.Reimbursements

If you would need to travel to the hospital to take part in the study, your transport and other related costs will be reimbursed to you.

7.Confidentiality

Confidentiality of all records is guaranteed and no information by which you can be identified will be released or published. These data will never be used in such a way that you could be identified in any way in any public presentation or publication without your express permission. The data collected will be stored away in locked cabinets and password protected folders that is accessible only to the researcher and supervisor of the study.

8.Termination of study participation

You may withdraw your consent to participate in this study at any time, with no penalty or effect on medical care or loss of benefits. Please notify the as soon as you decide to withdraw your consent.

9.Clarification

If you have questions about any of the procedures or information, please feel free to ask any of the investigator any time. The contact details are provided for you at the end of this document.

10.To be completed by the participant

The participant should complete the whole of this sheet himself/herself.

1. Have you read the information sheet? (Please keep a copy for yourself)
   YES/NO
2. Have you had an opportunity to discuss this study and ask any questions?
   YES/NO
3. Do you agree to have your participation audio and / or video recorded during the study?
   YES/NO
4. Have you had satisfactory answers to all your questions?
   YES/NO
5. Have you received enough information about the study?
   YES/NO

6. Who explained the study to you?

……..

7.Do you understand that you are free to withdraw from the study at any time without having to give a reason and without affecting your future medical care?

YES/NO

8.Sections of your medical notes, including those held by the investigators relating to your participation in this study may be examined by other research assistants. All personal details will be treated as STRICTLY CONFIDENTIAL. Do you give your permission for these individuals to have access to your records?

YES/NO

9. Have you had sufficient time to come to your decision?

YES/NO

10. Do you agree to take part in this study?

YES /NO

Participant's signature……..……

Date…….

Name (BLOCK CAPITALS)

……

By the investigator

I have explained the study to the above volunteer and he/ she has indicated her willingness to take part.

Signature of investigator……...……Date…….

Principle Investigator:FATHIMA NUZHA ISHAK

Contact Information: Mobile Number:0094 -773565065 / 00971502869484

Email Id: nuzhak@yahoo.com

Information Sheet / Consent Form PWT and UNCG

Translated in Sinhala

තොරතුරුපත්‍රය/ පාර්ශවකරුවන්ගේඑකඟත්වපෝරමය

ෆාතිමානූසාඉෂාක්වනමම, අප්‍රිකාවේකවාසූලූ-නටාල්විශ්වවිද්‍යාලයේආචාර්යයඋපාධිඅපේක්ෂිකාවක්වෙමි. මමකථනවිකිත්සකවරියක්වෙමි. **“ශ්වාසනාලද්වාරණයසහිතශ්‍රීලංකාවේවෙසෙනප්‍රජාවගේගිලීමසහසන්නිවේදනයකළමණාකරණයකිරීමේකාර්යක්ෂමතාවය“**යනමාතෘකාවයටතේ ..... හි (අධ්‍යයනමධ්‍යස්ථානයේනමසඳහන්කරන්න)ලබනමගේආචාර්යයඋපාධිඅධ්‍යයනයටසහභාගීවනමෙන්ආරාධනාකරසිටිමි.

1.අධ්‍යයනයේඅරමුණ

මෙමපරීක්ෂණයේඅරමුණවන්නේශ්වාසනාලද්වාරණයසහිතශ්‍රීලංකාවේවෙසෙනප්‍රජාවගේගිලීමසහසන්නිවේදනයකළමණාකරණයකිරීමේවර්තමානභාවිතආකාරවලකාර්යක්ෂමතාවයතේරුම්ගැනීමසහඑමගින්මෙමසේවාවැඩිදියුණුකරවීමටඋපක්‍රමයෙදවීමයි.

2.ස්වේච්ඡාසහභාගීත්වය

මෙමඅධ්‍යයනයටඔබගේසහභාගීත්වයස්වේච්ඡාවෙන්සිදුවියයුතුය.
ඔබටසහභාගීවීමෙන්වැළකීමටහැකිය.
වෛද්‍යමයසාත්තුකිරීම්හෝඔබගේරෝගයටහෝතත්ත්වයටලබාදීමටඇතිවෙනත්යම්කිසිප්‍රතිකාරයක්එහිදීඅහිමිවීමක්සිදුනොවේ.
ඔබසහභාගීනොවීමටහෝඅධ්‍යයනයෙන්ඉවත්වීමටතීරණයකරයිනම්එයඔබටඅවශ්‍යඕනෑම්විටකසිදුකළහැකිය.

3.කාලසීමාව, අධ්‍යයනයේකාර්යයපටිපාටියසහසහභාගීවන්නාගේවගකීම්

වෙනත්සාමාජිකයින්සහභාගීවනකණ්ඩායම්වශයෙන්හෝතනිතනිවවිමර්ශකවිසින්හසුරුවනුලබනසම්මුඛසාකච්ඡා, කාර්යයපටිපාටියසිදුකරනආකාරයවේ.
අධ්‍යයනයසායනිකපද්ධතියේනිරීක්ෂණවලින්සහලේඛන/රෝගීවාර්තාවලසමාලෝචනවලින්සම්න්විතය.

සම්මුඛපරීක්ෂණපැයකහෝපැයඑකහමාරකකාලයක්සහනිරීක්ෂණසිදුකිරීමරෝගියාවරෝහලටසාමාන්‍යයෙන්ඇතුළත්කරනපළමුදිනයඅතරතුරසිදුකරයි.
විශ්ලේෂණයකිරීම්සඳහාමෙමසම්මුඛපරීක්ෂණසහනිරීක්ෂණසැසිශ්‍රව්‍ය/දෘෂ්‍යලෙසඅපටඅවශ්‍යයි.
ඔබගේගිලීමේසහසන්නිවේදනයේඅවශ්‍යතාකළමණාකරණයසම්බන්ධවසාකච්ඡාමයආකාරයෙන්පවත්වනුලබනකණ්ඩායම්සම්මුඛපරීක්ෂණයකටඔබසහභාගීවීමඅවශ්‍යවියහැකිය.

4.අනාගතප්‍රතිලාභ

මෙමඅධ්‍යයනයටසහභාගීත්වයමගින්ඔබවැනිශ්‍රීලංකාවේසිටිනරෝගීන්ගේගිලීමේසහසන්නිවේදනඅවශ්‍යතාකළමණාකරණයකළයුතුආකාරයසම්හන්ධවවටිනාතොරතුරුලබාදෙමින්ඔබට/වෙනත්අයටප්‍රතිලාභගෙනදියහැකිය.
එයඔබසහඔබවැනිඅනිකුත්අයසඳහාලැබෙනසේවයදැයුණුකිරීමටඋපකාරීවනුඇත.

5.අවදානම්, උවදුරුසහඅපහසුතා

මෙමඅධ්‍යයනයටසහභාගීවීමෙන්අනාගතඅවදානම්හෝඋවදුරුඇතිවීමක්සිදුනොවේ.

6.ප්‍රතිපූරණය

ඔබටමෙමඅධ්‍යයනයටසහභාගීවීමසඳහාරෝහලටයාමටඅවශ්‍යවේනම්,
ඔබගේප්‍රවාහනයසහඒසම්හන්ධඅනිකුත්ගාස්තුඔබටගෙවනුඇත.

7.රහස්‍යභාවය

සියලුමවාර්තාවලරහස්‍යභාවයසහතිකවනඅතරඔබවහදුනාගතහැකිකිසිදුතොරතුරක්මුදාහැරීමප්‍රකාශයටපත්කිරීමසිදුනොකරයි.මෙමදත්තකවරදිනකදීහෝඔබගේඅනුමැතියෙන්තොරවඔබවහදුනාගතහැකිආකාරයටප්‍රසිද්ධියේඉදිරිපත්කිරීමකටහෝප්‍රකාශයටපත්කිරීමකටහෝකිසිදුවිටකඑලෙසභාවිතවීමක්නොකරනුඇත.

එකතුකරනලදදත්තඅධ්‍යයනයේඅධීක්ෂකටසහපරීක්ෂකටපමණක්ප්‍රවේශවියහැකිවනසේඅගුලුද මනලදරහස්කාමරවලසහරහස්කේතවලින්ආරක්ෂිතෆෝල්ඩරවලආරක්ෂිතවගබඩාකරඇත.

8.අධ්‍යයනයටසහභාගීවීමඅවසන්කිරීම

දඩුවමකින්හෝවෛද්‍යමයසාත්තුවටබලපෑමකින්හෝප්‍රතිලාභඅහිමිවීමකින්තොරවඕනෑ මවේලාවකමෙමඅධ්‍යයනයටසහභාගීවීමටලබාදුන්ඔබගේඑකඅත්වයඔබටඉවත්කරගතහැකිය.

9.පැහැදිලිකිරීම

යම්කිසිකාර්යපටිපාටියක්හෝතොරතුරක්සම්බන්ධවඔබටගැටළුඇත්නම්, කරුණාකරඕනෑමවිමර්ශකයකුගෙන්ඕනෑමවේලාවකඇසීමටමැළිනොවන්න. ඔවුන්සම්බන්ධකරගැනීමේතොරතුරුමෙමලේඛනයඅවසානයේඔබටලබාදීඇත.

10.සහභාගීවන්නාවිසින්සම්පූර්ණකළයුතුය

සහභාගීවන්නාඔහු/ඇයවිසින්මමෙමසමස්තපත්‍රයසම්පූර්ණකළයුතුය.

1. ඔබතොරතුරුපත්‍රයකියවාඇත්ද? (කරුණාකරඔබවිසින්එහිපිටපත්ක්ලබාගන්න)

ඔව්/ නැහැ

2.අධ්‍යයනයපිළිබඳසාකච්ඡාකිරීමටසහප්‍රශ්නඇසීමටඔබටඅවස්ථාවක්ලැබුනේද?

ඔව්/ නැහැ

3.අධ්‍යයනයඅතරතුරශ්‍රව්‍යසහ/හෝදෘශ්‍යපටිගතකිරීමටඔබගේසහභාගීත්වයලබාදීමටඔ බඑකඟද?

ඔව්/ නැහැ

4. ඔබටඔබගේසියලුමප්‍රශ්නසඳහාතෘප්තිමත්වියහැකිපිළිතුරුලැබුනේද?

ඔව්/ නැහැ

5.ඔබටඅධ්‍යයනයපිළිබඳප්‍රමාණවත්තොරතුරුලැබුනිද?

ඔව්/ නැහැ

6.ඔබටඅධ්‍යයනයපිළිබඳවිස්තරකරදුන්නේකවුරුන්විසින්ද?

.....

7.

ඔබටඕනෑමඅවස්ථාවකදීහේතුදැක්වීමකින්තොරවසහඉදිරිවෛද්‍යමයසාත්තුකිරීම්වලටකිසිදුබල පෑමකින්තොරවඅධ්‍යයනයෙන්ඉවත්වියහැකිබවඔබතේරුම්ගත්තේද?

ඔව්/ නැහැ

8.

විමර්ශකයන්විසින්පැවැත්වූඔබගේවෛද්‍යසටහන්වලකොටස්ඇතුළත්වමෙමඅධ්‍යයනයටඔබගේ සහභාගීවීමඅදාළකරුණු, වෙනත්පර්යේෂණසහයකයන්විසින්පරීක්ෂාකිරීමටඉඩඇත. සියලුමපෞද්ගලිකතොරතුරුඅතිශයරහසිගතලෙසසලකනුලැබේ. එමපුද්ගලයින්ටඔබගේවාර්තාවලටප්‍රවේශවීමටඔබගේඅවසරයලබාදෙන්නෙහිද?

ඔව්/ නැහැ

9. ඔබගේතීරණයටඑළඹීමටප්‍රමාණවත්තරම්කාලවේලාවක්ඔබටලැබුනිද?

ඔව්/ නැහැ

10. ඔබමෙමඅධ්‍යයනයටසහභාගීවීමටඑකඟද?

ඔව්/ නැහැ

සහභාගීවන්නාගේඅත්සන .....

දිනය.....

නම(ඉංග්‍රීසිබ්ලොක්කැපිටල්අක්ෂරවලින්) :

.....

විමර්ශකවිසින්

මමඉහතස්වේච්ඡාවෙන්ඉදිරිපත්වන්නාටඅධ්‍යයනයපිළිබඳවිස්තරකරදුන්අතරඔහු/ඇයසහ භාගීවීමසඳහාඔහුගේ/ඇයගේකැමැත්තපෙන්වාඇත.

විමර්ශකගේඅත්සන .....
දිනය.....

ප්‍රාථමිකවිමර්ශක: ෆාතිමානූසාඉෂාක්
සම්බන්ධකරගැනීමේතොරතුරු: .....
ජංගමදුරකථනඅංක: 0094 -773565065 / 00971502869484
විද්‍යුත්ලිපිනය: nuzhak@yahoo.com

.....
පරිවර්තකයාගේඅත්සනදිනය
(අදාළස්ථානවල)