

Levels of Awareness, Involvement and Training in Dysphagia Management among Other Health Professionals in Malaysia

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ABSTRACT

Background: Whilst multidisciplinary team (MDT) management of patients with dysphagia occurs in most established dysphagia services, achieving a MDT approach in countries with emerging dysphagia services, such as Malaysia, can be challenging.

Objective: To survey a range of medical, nursing and allied health professionals working in Malaysian government hospitals to examine their levels of awareness of dysphagia and the speech-language pathologist's (SLP) role in managing the disorder, their current involvement in dysphagia management, and the extent of any dysphagia specific training/education received. Malaysian data was compared to survey findings from similar cohorts of health professionals working in settings in Queensland, Australia where the MDT approach to dysphagia management is practiced.

Methods: A total of 176 professionals across the three professional groups from both countries (Malaysia n=96, Queensland n=80) completed a purpose built questionnaire which consisted of a total of 12 questions regarding participant's demographic characteristics, levels of awareness of dysphagia and the SLP's role, involvement in dysphagia management, and training received in the area.

Results: Data revealed that most Malaysian professionals lacked awareness regarding the clinical indicators of dysphagia and the role of the SLP in managing the disorder as compared to Queensland health professionals. Within the Malaysian respondents, medical staff obtained the highest score in identifying symptoms of dysphagia, allied health professionals were most aware of the SLP's role, and Malaysian nurses spent the most time in dysphagia-related training.

Conclusion: The present study highlights the presence of a number of barriers which need to be addressed in order to facilitate greater MDT collaboration with SLPs in the management of dysphagia in Malaysia. There is the potential that these or similar issues may be faced elsewhere where co-ordinated clinical services for dysphagia are in their initial stages of development.

Key words: dysphagia management, multidisciplinary approach, team management, health professionals, speech-language pathologist

INTRODUCTION

Dysphagia (a swallowing disorder) is recognized as a potentially life threatening condition (Doggett, et al., 2001) associated with a multitude of medical consequences which can lead to reduced quality of life (Doggett, et al., 2001; American Speech-Language-Hearing Association (ASHA), 2002b; Gillespie, et al., 2004; Bennett and Steele, 2005;), poor health care outcomes (Finestone, Greene-Finestone, Wilson and Teasell, 1996; Doggett, et al., 2001), and increased health care costs (Feagan, et al., 2000). Ensuring appropriate management of dysphagia requires input from a range of multidisciplinary team (MDT) members (ASHA, 2002a; Speech Pathology Australia, 2004; Royal College of Speech and Language Therapists (RCSLT), 2005; College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO), 2007). This can include services from speech-language pathology, medicine, occupational therapy, physiotherapy, nursing, nutrition, dietetics and social work in order to address the physiological abnormality, and the complex psychosocial, nutritional and medical needs of the patient (Huckabee and Pelletier, 1999).

The purpose of a MDT in any health care setting is to deal with the increasing complexity of care, manage and respond effectively to client needs, keep abreast of new technology, network with other support services, and to deliver care across settings (Hall and Weaver, 2001; Institute of Medicine, 2001). As such, the importance of a MDT approach to dysphagia management has been noted by many authors (e.g., Ravich, et al., 1985; Huckabee and Pelletier, 1999; Heritage, 2001). Research into the benefits of adopting a MDT approach for the management of dysphagia has shown that a MDT approach ensures appropriate management is provided to patients (Ellul and Barer, 1994; Collaborative Dysphagia Audit (CODA) Collaborators, 1997) and effective treatment outcomes are achieved (Martens, Cameron and Simonsen, 1990; Singh, Brockbank, Frost and Tyler, 1995). Singh and colleagues (1995) reported that 73% (n=100) of patients who received MDT management showed either complete recovery, resolution of symptoms, or did not require further treatment for dysphagia. In addition, Martens, Cameron and Simonsen (1990) concluded that a MDT approach to dysphagia management resulted in improvement of patient weight and caloric intake.

A well-coordinated team needs to be established in order to achieve effective MDT management of dysphagia (Winchester, 2003). In order to shape a dynamic team, goals need to be clearly defined, each team member should be capable of playing their roles as expected by others in the team, leadership and mechanisms for decision-making need to be identified and agreed upon, effective communication must be established, and certain

norms/rules should be followed (Rubin and Beckhard, 1972; Yule, Flin, Maran and Paterson-Brown, 2006). Rubin and Beckhard (1972) viewed these non-technical skill components as related to each other, thus all aspects must be addressed to facilitate effective team work. Meanwhile, other studies have further stressed effective communication as the most crucial part of a MDT approach (Winchester, Ralston and Culverhouse, 2000; Winchester, 2003; Mills, Neily and Dunn, 2008). Winchester, Ralston and Culverhouse (2000) followed up multiple admissions of one patient into the same nursing facility following hospitalizations and found that there were multiple inconsistencies with regards to recommendations for dysphagia management. The study highlighted the importance of ensuring there is good communication and sharing of information between team members.

Early work in the United States revealed that team management can evolve and be enhanced over time (Groher, 1997). Less than 10% of 172 Department of Veterans Affairs medical settings in the United States were reported to have a MDT approach in dysphagia management in 1986, yet this number had increased to 56% four years later (Groher, 1997). In Malaysia, where the SLP's role in dysphagia management is relatively new (Sharma, Harun, Mustaffa Kamal and Noerdin, 2006; Mustaffa Kamal, Ward and Cornwell, 2012), a MDT approach to dysphagia management is only just emerging. Early research examining dysphagia management in the country confirmed some level of MDT interaction exists, with Malaysian SLPs reported to receive referrals of patients with dysphagia from other health professionals (Sharma, Harun, Mustaffa Kamal and Noerdin, 2006). The SLPs also noted they referred patients to other professionals for management (Sharma, Harun, Mustaffa Kamal and Noerdin, 2006). However, in a more recent study which explored practice patterns for dysphagia management in Malaysia in more detail, less than half of the SLPs surveyed managed dysphagia as part of a MDT in their work place (Mustaffa Kamal, Ward and Cornwell, 2012).

Hence to better comply with international dysphagia practice recommendations, it is important that the current issues impacting on MDT involvement in dysphagia management in Malaysia are identified so that strategies to overcome these barriers can be implemented. Therefore it was the aim of the current study to identify (a) the levels of awareness of other health professional groups regarding dysphagia and the SLP's role in its management, (b) their involvement in managing the disorder, and (c) the extent of training/education received relevant to dysphagia management. By contrasting this data with the responses from health professional groups working within a health service with established dysphagia services and MDT involvement, it is the intent to identify if, and where barriers exist, and inform how they may be addressed.

METHODS

A cohort comparison design was used to explore the awareness and roles of other health professionals in dysphagia management practices in Malaysia as compared to professional groups working in a MDT within Queensland public hospital settings.

Participants

Health professionals working in either Malaysian or Queensland government hospitals that employed SLPs were invited to participate in the current study. Participants were recruited from three specific professional groups (a) medical (i.e., medical officers and specialists), (b) other allied health (i.e., occupational therapists, physiotherapists and dietitians), and (c) nursing. These health professional groups were selected on the basis that they are recognized as core members of the MDT involved in dysphagia management (Huckabee and Pelletier, 1999; Speech Pathology Australia, 2004). In Malaysia, distribution of survey forms to the health professionals was made through the Directors of 27 participating government hospitals which employed a full time SLP. Recruitment continued until either (a) at least 30 participants from each professional group had responded or (b) no further responses were received after a three month data collection period during which two follow-up reminders had been sent to encourage participation. For participants in Queensland government hospital settings, recruitment of the health professionals was facilitated by SLP staff across five clinical settings. Consent to distribute survey packs to other health professionals was initially sought from the SLPs who participated in another part of the study in identifying current dysphagia management practices in the country (Mustaffa Kamal, Ward and Cornwell, 2012). Those SLPs who agreed to be involved in the recruitment of other health professionals were contacted and provided with the survey packs to be distributed to other professionals at their work place. The survey pack for other health professionals contained a copy of the information sheet, consent form, questionnaire and a replied paid envelope. Recruitment of the health professionals continued until at least 30 respondents from each professional group were recruited. Ethical approval was granted by the Medical Research Ethics Committee, Ministry of Health, Malaysia, and Behavioural and Social Sciences Ethical Review Committee of The University of Queensland.

Questionnaire

A questionnaire (Appendix) was developed specifically for the purposes of the current study to gain information regarding the levels of awareness, involvement, and training in dysphagia management from the targeted health professional groups. Development of the questionnaire was based on the structured interview questions utilized in a related study by Meriweather (2006) and the dysphagia guidelines published by Speech Pathology Australia (2004). Considering the multidisciplinary audience who would be using the surveys, the terms 'swallowing problem' and 'swallowing issues' were used in the questionnaire instead of 'dysphagia' to avoid any confusion. The questionnaire was specifically designed to be as simple and brief as possible to encourage participation, yet enable some examination of potential factors influencing MDT involvement. It is however, acknowledged that the resulting brevity of the questionnaire items potentially limited the detail of information collected. The questionnaire consisted of two parts (Part A and B) with a total of 12 questions. Part A contained five questions on demographic characteristics with the purpose to identify a participant's work experience and caseload. There were a further seven questions included in Part B of the questionnaire which focused on a participant's levels of awareness, involvement, and training in dysphagia management. The format of the questionnaire was such that it provided forced choice answers for each question, and took approximately 5-10 minutes to complete.

Data Analysis

Data were analyzed through descriptive statistical analysis by measuring the percentages, means, and standard deviations. Responses made by members within each professional group were also examined for patterns of consistency within each group as per Mathers-Schmidt and Kurlinski (2003). Items that were identified by 75% or more of respondents as relevant to the question were considered a 'highly consistent' response within the group, with between 50 to 75% considered 'moderately consistent', and where less than 50% marked the item as applicable there was 'no consistent' pattern of group response (Mathers-Schmidt and Kurlinski, 2003). Chi-square tests were used to compare data between each health professionals group across the two cohorts. A conservative alpha of $p=0.01$ was adopted in order to minimize the potential for Type II error due to multiple comparisons (Shearer, 1982). Where values fell between 0.01 and 0.05 these were interpreted as trends.

RESULTS

Demographic Characteristics

Table 1 shows the distribution of participants according to professional group. Within the allied health professionals group, the cohorts consisted of responses from physiotherapists (Malaysia n=9; Queensland n=13), occupational therapists (Malaysia n=8; Queensland n=7), and dietitians (Malaysia n=16; Queensland n=11). On average, the years of work experience of respondents in each professional group in both cohorts ranged from six to 10 years with the exception of the Queensland Health (QHealth) doctors (>10 years). The majority of respondents obtained their highest degree from their own country of practice (Table 1). Most professionals managed a mixed caseload except for Queensland doctors and Malaysian nurses (Table 1). A range of diagnostic populations were managed by the health professional groups in both countries, with neurological patient groups most common (Table 1). The majority of health professionals in both cohorts indicated that dysphagia represented 40% or less of their caseload.

[insert Table 1 here]

Awareness

Regarding awareness of clinical indicators of dysphagia, the combined responses of the three Malaysian groups ($M=3.60$, $SD=1.92$) when compared to the three Queensland groups ($M=5.50$, $SD=1.84$) revealed significant differences in response patterns ($\chi^2=42.16$, $p<0.001$) with the Queensland cohort identifying more clinical signs as possible indicators of dysphagia. Descriptive analysis of the data (Table 2) revealed moderate to high consistency among the doctors, allied health professionals and nurses in the Queensland cohort for recognizing six or all seven of the seven signs provided as being indicative of dysphagia (Table 2). In comparison, Malaysian doctors only identified five signs with moderate to high clinical consistency, Malaysian nurses identified four, and Malaysian allied health professionals only identified two suggesting that numerous features may go unnoticed as a sign of dysphagia by these professional groups. The clinical indicator with the highest association with dysphagia across all cohorts was coughing/choking before, during or after swallow (Table 2).

[insert Table 2 here]

A significant difference ($\chi^2=75.21$, $p<0.001$) was also found between the Malaysian and Queensland professionals regarding recognition of the roles performed by an SLP. On average Malaysian clinicians identified only three to four ($M=3.57$, $SD=1.93$) of the six tasks as being the role of an SLP while in Queensland the large majority recognized all six described roles ($M=5.80$, $SD=0.60$) as being performed by an SLP in dysphagia management. Descriptive analysis (Table 3) revealed all QHealth professionals showed a very high level of consistency (>86% agreement) in identifying roles performed by the SLP. In the Malaysian groups, allied health professionals had moderate to high consistency in recognizing all six roles performed by an SLP. Although most Malaysian doctors felt the role involved education of patients in safe swallowing techniques, very few Malaysian doctors or nurses recognized that SLPs had a role in assessing swallowing using instrumental assessments or being involved in diagnosing dysphagia (Table 3).

[insert Table 3 here]

Involvement in Dysphagia Management

Significant differences ($\chi^2=20.57$, $p=0.004$) were also found between the roles of the Queensland ($M=2.08$, $SD=1.08$) and Malaysian ($M=2.55$, $SD=1.76$) health professionals in dysphagia management. In Queensland, there was moderate to high consistency that role of the doctors was primarily to refer patients with swallowing issues to an SLP or to other health professionals and very few felt they were involved in any of the other roles described. In contrast for the Malaysian medical professionals, only 50% (moderate consistency) referred patients to other professionals for management. It was logical then that half of the medical practitioners indicated they were involved in both screening and making safe food/fluid recommendations (Table 4). For the allied health professionals, in the Queensland data 100% of these professionals saw their role as only to refer patients to SLP for management, with no role in any of the other aspects. In Malaysia, to some degree (<50%) allied health professionals indicated were involved in many of the roles relating to dysphagia management. Within the nursing staff, the Queensland cohort had moderate to high consistency in recognizing that their roles involve referral, screening and monitoring mealtimes. This similar pattern was noted in the Malaysian nursing responses, but at lower rates. Fifty eight percent of the Malaysian nurses indicated their role also involved recommending safe food and fluid consistencies (Table 4).

[insert Table 4 here]

Involvement in team management of dysphagia among health professionals was significantly ($\chi^2=51.57$, $p<0.001$) lower in the Malaysian (doctor $n=13$, 43.3%; allied health professionals $n=9$, 27.3%; nurse $n=12$, 36.4%) than the Queensland cohort (doctor $n=18$, 85.7%; allied health professionals $n=29$, 93.6%; nurse $n=24$, 85.7%). Not limited to that, while the majority of health professionals in Queensland (doctor $n=15$, 71.4%; allied health professionals $n=19$, 61.3%; nurse $n=24$, 85.7%) usually/always refer patients with swallowing issues to SLP, most of the Malaysian cohort (doctor $n=12$, 40.0%; allied health professionals $n=22$, 66.7%; nurse $n=19$, 57.6%; $\chi^2=92.47$, $p<0.001$) have never made a referral to an SLP. Among the reasons given by Malaysian doctors for never or seldom making referrals to an SLP included 'there is no SLP at my hospital' ($n=8$, 34.8%) and 'not sure SLP's role in dysphagia management' ($n=9$, 39.1%). Whereas Malaysian allied health ($n=14$, 50%) and nursing staff ($n=11$, 42.3%) indicated that they were not qualified to make referrals. The nursing staff also noted that they were not sure of the SLP's role in managing the disorder ($n=8$, 30.8%).

Training in Dysphagia Management

Statistical analysis revealed no significant differences between Malaysian and Queensland cohorts in terms of attendance ($\chi^2=0.88$, $p=0.347$) and time spent ($\chi^2=5.16$, $p=0.076$) in workshops relevant to dysphagia management. The majority of health professionals in Malaysia (medical $n=26$, 86.7%; allied health $n=20$, 60.6%; nursing $n=25$, 75.8%) and Queensland (medical $n=17$, 81%; allied health $n=23$, 74.2%) had not attended courses/workshops relevant to dysphagia management, with the exception being Queensland nurses where half had received some training. Where participants had attended training, the majority (50 - 92.9%) had attended between one to five hours.

DISCUSSION

The current data highlights a number of differences between the professional cohorts studied with respect to both knowledge and practice patterns for managing patients with dysphagia. Overall the data revealed that health professionals in Malaysia had reduced awareness of clinical indicators of dysphagia, reduced awareness of the SLP's role in

managing the disorder, they lacked of involvement in a MDT for dysphagia management, and never/seldom referred patients with suspected dysphagia to SLPs. Each of these issues needs to be addressed in order to assist in the establishment of the SLP's role in dysphagia management in Malaysia and to encourage a MDT approach to the management of this condition.

It is acknowledged that the presence of other symptoms, namely oral residue, pneumonia, multiple swallows, and increased mealtime duration may suggest the presence of swallowing difficulty or dysphagia (Cole-Arvin, Notich and Underhill, 1994; Palmer, Drennan and Baba, 2000). Yet within the Malaysian cohort there was reduced awareness of these symptoms, with high consistency of awareness only identified for the extremely overt sign of coughing/choking (Silver and Nostrand, 1994; Logemann, Veis and Colangelo, 1999). This is an important finding, as it is quite likely then that many patients with dysphagia could go unrecognized by the majority of professionals involved in their care in Malaysia. This lack of awareness of dysphagia signs/symptoms is likely to relate to the fact that the majority of Malaysian health professionals had not received adequate training regarding dysphagia and its management. However, although few Malaysian professionals indicated they had received any specific training in dysphagia or its management, equally, few Queensland professionals had either. Hence it is possible that the enhanced levels of awareness of the Queensland professionals may have been influenced by their involvement in MDT management of the disorder and their exposure to information provided by the SLPs in their team.

Awareness of the SLP's role in dysphagia management among Malaysian health professionals was not comparable to the patterns observed in the Queensland data. Within Queensland, medical, allied health and nursing staff demonstrated a clear awareness of the SLP's role in dysphagia management. In contrast, Malaysian professionals demonstrated a lack of awareness of the SLP's role. It is quite possible that as the profession of speech pathology is relatively new within Malaysia (Santiago and Stansfield, 1998; Mustaffa Kamal, Ward and Cornwell, 2012) this may be a primary contributing factor to this lack of awareness. Clear role definition of each team member is one of the crucial elements in forming a dynamic team (Rubin and Beckhard, 1972; Yule, Flin, Maran and Paterson-Brown, 2006; Byrne and Pettigrew, 2010). Hence there is an obvious need for Malaysian SLPs to actively market their profession in order to improve awareness of their roles and responsibilities (ASHA, 2002a; Speech Pathology Australia, 2004; RCSLT, 2005). Easterling and Daniels (2002) suggest strategies such as distributing brochures to other professionals, providing in-services, having discussions about dysphagia with other professionals, and

public presentations as possible ways to increase awareness. This promotion of the profession and its role in dysphagia management will be a critical first step toward encouraging increased involvement of SLPs in the management of patients with dysphagia and the future development of a MDT approach to their care. Despite the critical need to promote the profession particularly for dysphagia management, there are barriers that need to be addressed to ensure the service is ready to be provided effectively to the patients. These include a need to increase the number of SLPs in the country, increase the levels of competency amongst them, and have access to guidelines/policy to use as reference.

Differences were also observed in the roles each professional group had in dysphagia management between each country. Overall the patterns observed in the Queensland data are consistent with a service that embraces a MDT model in which SLPs have a defined role within the team, are referred patients by other professionals, and lead the care of the patient with dysphagia with support from nursing staff. In comparison in the Malaysian responses it was clear there was little understanding of the services SLPs can provide, and hence a low rate of referrals to SLPs and a blending of professional roles with doctors and nurses providing services typically performed by an SLP in other countries. There are a number of factors which could be contributing to the low rate of referrals to SLP services. Firstly, as evidenced by the data discussed previously, Malaysian professionals appear to lack an awareness of the SLP's role in dysphagia management. There was also evidence that there was a limited awareness of the availability of speech pathology services in some settings. Despite all respondents working in settings which employed SLPs who managed patients with dysphagia, some indicated they had no awareness of these staff. These two findings provide further support for the need for better local promotion and education regarding speech pathology services and the SLP role in dysphagia management.

It was also clear from the responses received, that dysphagia management within Malaysia is still largely managed by medical and nursing staff. While this is not necessarily a negative issue, there is evidence that shows patient care by specialists is better than generalists in term of overall quality (MacLean, et al., 2000) and cost of care (Greineder, Loane and Parks, 1999). Hence the specialist skills of SLPs and the specialist training they receive in this field means that ultimately SLPs are the professional group who should be leading the management of patients with dysphagia (ASHA, 2002a; Speech Pathology Australia, 2004; CASLPO, 2007). Continued involvement by medical and nursing alongside the SLP though remains central to achieving good MDT management. It is well recognized that screening of swallowing function conducted by other health professionals who are trained in the clinical assessment of patients can greatly assist with the initial identification

and referral of patient to speech pathology services (Huhmann, et al., 2004; Cichero, Heaton and Bassett, 2009; Turner-Lawrence, et al., 2009). In the current study, the roles identified by the Queensland nurses reflect the involvement of this professional group in identifying patients with suspected dysphagia, making referrals to SLP services, and supporting mealtime assistance for patients with dysphagia, while the medical team members saw their role primarily as identification and referral. In contrast, the patterns of practice of the Malaysian medical and nursing staff covered many of the roles which most international practice guidelines would consider should be fulfilled by the SLP (ASHA, 2002b; Speech Pathology Australia, 2004; RCSLT, 2005; CASLPO, 2007). It is quite possible that with increased awareness of the role of the SLP in dysphagia management and as the profile of the SLP within Malaysian medical setting develops, there will be better role definition for each team member. Ultimately then, roles within the MDT team will become more consistent with international practice patterns.

The current study has highlighted a number of issues which may be contributing to the limited involvement of SLPs in the management of the patient with dysphagia within Malaysian health settings and possibly preventing the adoption of a true MDT approach for these patients. However it is acknowledged that the sample size of professionals surveyed in this study is only small and it is possible that the patterns observed are not fully representative of health professionals practice in either country. Equally the questions asked of the participants were limited in their scope and detail due to the initial exploratory nature of this investigation. Hence the current findings should be considered as initial exploratory data and a base from which a more comprehensive study of the barriers and challenges to implementing a MDT approach to dysphagia management in Malaysia can be undertaken.

While the current study provided knowledge and awareness of potential barriers to the establishment of MDT management for dysphagia, particularly in Malaysia, it is possible that similar issues may be faced in other countries where co-ordinated clinical services for dysphagia are in their initial stages of development. Thus, findings and recommendations from this study may be beneficial for other international clinical services to aid in the development of training programs and service models for the management of people with dysphagia. In addition, it needs to be highlighted that our own understanding of the nature of services and specific barriers faced by the service providers within a specific country or setting is crucial in order to change practice and improve services. The current findings should be considered as initial exploratory data and a base from which a more comprehensive study of the barriers and challenges to implementing a MDT approach to dysphagia management can be a model for evaluating MDT services in other countries.

CONCLUSION

The issues raised by the current data regarding reduced awareness of the signs of dysphagia and the roles SLPs can perform, the lack of referral practices and the minimal training opportunities highlight a number of barriers to developing a MDT model of dysphagia management in Malaysia. Acknowledging the relative infancy of the SLP profession in Malaysia; it will only be through increased levels of training, awareness and SLP involvement in this clinical area that the SLP role in dysphagia services will be recognized and they will become an integral member of the team managing the patient with dysphagia.

ACKNOWLEDGEMENT

The authors acknowledge financial assistance from the University of Queensland and the National University of Malaysia. We thank all Malaysian and Queensland health professionals who have participated in the current study, and SLPs who have directly or indirectly assisted in the recruitment processes.

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APPENDIX

**QUESTIONNAIRE
HEALTH PROFESSIONALS AND SWALLOWING MANAGEMENT**

Date : _____

In which country do you work?: Malaysia Australia

This questionnaire aims to identify your involvement, skill and training in the management of patient with swallowing problem. There is no right or wrong answer. Please go through each question carefully and tick (✓) in the appropriate box(es).

PART A: DEMOGRAPHIC DATA

1. What is your professional group at the hospital?
Medical Officer
Ear, Nose and Throat (ENT) Specialist
Neurologist
Radiologist
Dietitian
Occupational Therapist
Physiotherapist
Nurse
Other
(specify): _____
2. How long have you been practising as a health professional?
< 6 years
6 – 10 years
> 10 years
3. Where did you obtain highest degree in the area that you are practising?
Country of practice
Overseas (specify): _____
4. In your caseload, what type of patients have you been working with?
(Please tick (✓) all relevant options)
Neurological (e.g: cerebrovascular disease, cerebral palsy)
Surgical (e.g: head and neck surgery)
Trauma (e.g: intubation injury, inhalation burns)
Metabolic (e.g: diabetes, thyroid dysfunction)
Oncology
Others (specify): _____
5. Approximately how many patients currently under your care have swallowing issues?
1 – 20%
21 – 40%
41 – 60%
61 – 80%
81 – 100%

PART B: TRAINING, AWARENESS AND INVOLVEMENT

1. (i) Have you ever attended any course or workshop relevant to management of swallowing disorders?

Yes

No (if no, go to Question 2)

(ii) If yes, approximately how many hours of training have you received through seminars / workshops?

1 – 5 hours

6 – 10 hours

> 10 hours

2. What is/are your role(s) as a health professional in swallowing management?

(Please tick (✓) all relevant options)

- a) Refer patient with suspected swallowing problem to speech-language pathologist
- b) Refer patient with suspected swallowing problem to health professional(s) other than a speech-language pathologist
- c) Screen swallowing functions of patient
- d) Administer thorough clinical swallowing examination on patients
- e) Administer instrumental swallowing evaluation on patients (e.g.: FEES, VFSS, etc.)
- f) Recommend safe food and fluid consistencies for patients
- g) Monitor patients with swallowing issues during meal times
- h) Others (specify): _____

3. Have you been involved in the team management of patients with a swallowing disorder?

Yes

No

4. What is/are the symptom(s) that you would identify as indicative of a swallowing problem?

(Please tick (✓) all relevant options)

- a) Anterior leakage (drooling)
- b) Oral residue (food left in mouth)
- c) Coughing / choking before, during or after swallow
- d) Drastic weight loss
- e) Pneumonia
- f) Multiple swallows
- g) Increased duration of meal time
- h) Others (specify): _____

5. As far as you know, what is/are the role(s) of the speech-language pathologist in swallowing management?

(Please tick (✓) all relevant options)

- a) Perform thorough clinical swallowing examination
- b) Analyse swallowing function from instrumental assessment
- c) Diagnose swallowing problem
- d) Plan for intervention and provide treatment

- e) Consult other health professionals as appropriate
- f) Educate patient, carer and health professionals regarding specific techniques for safe oral intake

6. How often do you refer patients with swallowing issues to a speech-language pathologist?
- Never
 - Seldom
 - Half the time
 - Usually
 - Always

7. If seldom or never, what is/are the reason(s) of not referring patient to the speech-language pathologist?
(Please tick (✓) all relevant options)
- a) Do not know how to refer
 - b) No speech-language pathologist at my work place
 - c) Not sure role of speech-language pathologist in swallowing management
 - d) Speech-language pathologists in my work place do not see patients with swallowing problem
 - e) I am not qualified to make referrals to speech-language pathologist
 - f) Others (specify): _____

Table 1*Demographic comparison between Malaysian and QHealth professionals*

Demographic	Doctor		Allied Health Professionals		Nurse	
	Malaysia n=30 (%)	QHealth n=21 (%)	Malaysia n=33 (%)	QHealth n=31 (%)	Malaysia n=33 (%)	QHealth n=28 (%)
Work experience						
< 6 years	46.6	33.3	36.4	41.9	45.5	46.4
6 – 10 years	16.7	14.3	30.3	19.4	30.3	14.3
> 10 years	36.7	52.4	33.3	38.7	24.2	39.3
Country obtained highest degree						
Country of practice	73.3	85.7	90.9	87.1	100	85.7
Other countries	26.7	14.3	9.1	12.9	0	14.3
Caseload						
Single	30.0	66.7	24.2	29.0	54.5	39.3
Multiple	70.0	33.3	75.8	71.0	45.5	60.7
<i>Neurological</i>	50.0	61.9	90.9	67.7	30.3	75.0
<i>Surgical</i>	73.3	28.6	69.7	54.8	51.5	39.3
<i>Trauma</i>	56.7	23.8	51.5	35.5	21.	39.3
<i>Metabolic</i>	40.0	14.3	69.7	22.6	42.4	39.3
<i>Oncology</i>	50.0	28.6	42.4	58.1	15.2	28.6
<i>Others</i>	6.7	9.5	15.2	29.0	27.3	17.9
Current patient caseload with dysphagia						
1 – 20%	84.2	45.0	95.8	50.0	82.4	28.6
21 – 40%	5.3	30.0	4.2	23.3	17.6	35.7
41 – 60%	5.3	20.0	0	16.7	0	25.0
61 – 80%	0	5.0	0	6.7	0	10.7
81 – 100%	5.3	0	0	3.3	0	0

Table 2

Consistency among health professionals in Malaysia and QHealth in identifying symptoms as indicative of dysphagia

Dysphagia Symptom	Doctor		Allied Health Professionals		Nursing Staff	
	Malaysia	QHealth	Malaysia	QHealth	Malaysia	QHealth
	(%) n=30	(%) n=21	(%) n=33	(%) n=31	(%) n=33	(%) n=28
Anterior leakage	66.7*	57.1*	75.8#	87.1#	60.6*	89.3#
Oral residue	46.7	71.4*	45.5	87.1#	63.6*	92.9#
Coughing/choking	93.3#	100#	81.8#	100#	81.8#	100#
Drastic weight loss	63.3*	66.7*	24.2	61.3*	48.5	57.1*
Pneumonia	60.0*	95.2#	30.3	74.2*	30.3	78.6#
Multiple swallows	50.0*	61.9*	18.2	74.2*	51.5*	78.6#
Increased meal time	33.3	47.6	21.2	71.0*	36.4	64.3*

*Note: # = high consistency ($\geq 75\%$ agreement), * = moderate consistency (50-75% agreement).*

Table 3

Consistency among health professionals in Malaysia and QHealth in identifying roles of SLP in dysphagia management

Role of SLP	Doctor		Allied Health Professionals		Nursing Staff	
	Malaysia	QHealth	Malaysia	QHealth	Malaysia	QHealth
	(%) n=30	(%) n=21	(%) n=33	(%) n=31	(%) n=33	(%) n=28
Perform thorough oromotor examination	53.3*	100#	72.7*	100#	66.7*	96.4#
Analyse swallowing function from instrumental assessment	40.0	95.2#	78.8#	93.5#	42.4	92.9#
Diagnose dysphagia	40.0	95.2#	63.6*	93.5#	39.4	96.4#
Plan for intervention and provide treatment	63.3*	95.2#	81.8#	100#	57.6*	100#
Consult others as appropriate	63.3*	100#	51.5*	100#	51.5*	85.7#
Educate others regarding specific techniques for safe oral intake	86.7#	95.2#	63.6*	100#	54.5*	100#

*Note: # = high consistency ($\geq 75\%$ agreement), * = moderate consistency (50-75% agreement).*

Table 4

Comparison between Malaysian and QHealth professionals regarding their role in dysphagia management

Role of Health Professional	Doctor		Allied Health Professionals		Nursing Staff	
	Malaysia	QHealth	Malaysia	QHealth	Malaysia	QHealth
	(%) n=30	(%) n=21	(%) n=33	(%) n=31	(%) n=33	(%) n=28
Refer patient to SLP	50.0*	95.2#	42.4	100#	66.7*	100#
Refer to other health professional	43.3	52.4*	18.2	3.2	36.4	32.1
Screen swallowing functions	63.3*	14.3	15.2	6.5	60.6*	53.6*
Administer thorough clinical swallowing examination	33.3	4.8	3.0	0	39.4	0
Administer instrumental swallowing evaluation	13.3	0	0	0	24.2	0
Recommend safe food/fluid consistency	53.3*	19.1	42.4	9.7	57.6*	21.4
Monitor patient during meal times	13.3	4.8	30.3	19.4	60.6*	89.3#

*Note: # = high consistency ($\geq 75\%$ agreement), * = moderate consistency (50-75% agreement)*