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Medical Officers' Awareness, Involvement and Training in Dysphagia Management
(Kesedaran, Penglibatan dan Latihan Pegawai Perubatan dalam Pengurusan Disfagia)

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ABSTRACT

Awareness, involvement and training in dysphagia management are essential to ensure that patients are appropriately assessed for dysphagia and provided with intervention. The study aimed to identify levels of awareness, involvement and training of medical officers in dysphagia management. A total of 51 medical officers from the family medicine, medical, otorhinolaryngology, surgery, and neurosurgery departments in Hospital Universiti Sains Malaysia participated in the study. Levels of awareness, involvement and training of medical officers in dysphagia management were reported using descriptive analysis. Results indicate that medical officers lacked awareness and training in dysphagia management. Referral rates to speech-language pathologists for dysphagia management were low with 58.4% of medical officers having had seldom or never referred patients. The results provide valuable information for addressing dysphagia management in the hospital.

Keywords: Dysphagia; awareness; training; involvement; speech-language pathologists

ABSTRAK

Kesedaran, penglibatan dan latihan dalam pengurusan disfagia adalah penting demi memastikan pesakit diperiksa dan diberikan rawatan disfagia yang tepat. Kajian ini bertujuan untuk mengenal pasti tahap kesedaran, penglibatan dan latihan pegawai perubatan dalam pengurusan disfagia. Seramai 51 pegawai perubatan dari jabatan perubatan keluarga, jabatan perubatan, jabatan otorinolaringologi, jabatan surgeri, dan jabatan neurosurgeri di Hospital Universiti Sains Malaysia telah menyertai kajian ini. Tahap kesedaran, penglibatan dan latihan pegawai perubatan dalam pengurusan disfagia dilaporkan menerusi analisis deskriptif. Dapatan kajian menunjukkan bahawa pegawai perubatan kurang kesedaran dan latihan dalam pengurusan disfagia. Kadar rujukan kepada patologis pertuturan-bahasa untuk pengurusan disfagia adalah rendah dengan 58.4% daripada pegawai perubatan melaporkan jarang ataupun tidak pernah merujuk pesakit. Keputusan penyelidikan ini menyumbang maklumat bernilai bagi menangani pengurusan disfagia di hospital.

Kata kunci: Disfagia; kesedaran; latihan; penglibatan; patologis pertuturan-bahasa

INTRODUCTION

Dysphagia, also known as swallowing disorders refer to problems in transferring liquid or food from the mouth to the stomach (Smithard, Smeeton & Wolfe 2007). It is a symptom of various pathological conditions which causes changes of the swallowing mechanism (Murry & Carrau 2001). Speech-Language Pathologists (SLPs) are recognized as the primary professionals in assessing, diagnosing, providing intervention and managing individuals with dysphagia (Royal College of Speech & Language Therapists 2006). However, a multidisciplinary team approach is used to manage dysphagia in hospitals, and this team often includes services from doctors, physiotherapists, nurses and dieticians (Huckabee & Pelletier 1999). Hence, the term *dysphagia management* is used to refer to assessment and intervention of the disorder by SLPs and other health professionals.

Studies conducted in Australia and the United Kingdom reported that dysphagia affects up to 50% of stroke patients and up to 60% of patients under acute care (Smithard et al. 2007). In Asia, a study conducted in South Korea reported that dysphagia prevalence rates among nursing home residents were 52.7% (Park et al. 2013). According to a study by Lin et al. (2002), the prevalence rate for impaired swallowing in long term care facilities in Taiwan was estimated at 51.0% for tube-fed and non-tube-fed participants. Furthermore, the prevalence of dysphagia for paste food was determined to be 41% in a study group amongst post-stroke patients in Japan (Momosaki, Abo, Kakuda & Kobayashi 2013). The prevalence of dysphagia in Malaysia is 65.9% in patients with acute ischemic stroke (Hamidon et al. 2006). This prevalence rate reinforces the importance of efficient dysphagia management in Malaysia. However, data reported by the study conducted by Mustaffa Kamal, Ward, and Cornwell (2013) implied that few individuals suffering from dysphagia in Malaysia actually receive speech and language pathology services. This finding reflected study results by Sharma, Harun, Kamal, and Noerdin (2006) which indicated that 50% of

SLPs in Malaysia have not managed dysphagia cases. A total of 41% of SLPs reported that this was due to the lack of referrals from other professionals. Also, among those clinicians who managed patients with dysphagia, it was reported that the dysphagic population represented less than 3% of their caseload.

In Malaysia, one reason for a lack of referrals to SLPs is the prescription of the nasogastric (NG) tube and percutaneous endoscopic gastronomy (PEG) tube by doctors as the common mode of dysphagia management (Sharma et al. 2006). This mode of nutrition is termed enteral nutrition and is usually administered on patients who present with incompetent oral food intake (Loser, Wolters & Folsch 1998). However, the shortfall of this form of management is seen in the reduced opportunity to utilize swallowing processes that may encourage the rehabilitation of normal feeding abilities (Gresham 1990). Sharma and colleagues (2006) reported that there was poor understanding of which professionals were involved in dysphagia management, the scope of the roles and the role of SLPs in managing the patient with dysphagia in the whole of Malaysia. This finding was further emphasized by Mustaffa Kamal et al. (2013) who reported a lack of cooperation and support from other hospital staff with regard to dysphagia management, reduced acknowledgement of speech and language pathology roles amid other professionals and inappropriate services provided by other professionals in Malaysia. In actual fact, standard practice upon potential swallowing problem identification as outlined by Duval et al. (2009) emphasized prompt referral to SLPs for a thorough swallowing assessment to establish a diagnosis. Referrals for dysphagia management received by SLPs in Malaysia were found to be predominantly from medical officers (Mustaffa Kamal et al. 2013).

In relation with speech-language pathology professions, in the USA, SLPs are also known as swallowing therapists. This is as most dysphagia cases are managed by SLPs who are recognized as the main professionals in dysphagia management (Logemann 1998). However, in Malaysia, there is a large service deficit which resulted in an unclear picture of which professionals within the clinical setting manage patients with dysphagia (Mustaffa Kamal, Ward & Cornwell 2012). Understanding this predicament, further investigation is needed to shed light on the clinicians' role in the management of patients with dysphagia, and reasons explaining the lack of SLPs involvement within the clinical setting in comparison to their international counterparts. Furthermore, although Mustaffa Kamal and colleagues (2012) reported that referrals to SLPs regarding dysphagia management were primarily from medical officers, few individuals with dysphagia actually received management from SLPs. This suggests a gap in knowledge as to who is involved in providing dysphagia services and reasons for the lack of referrals from medical officers to SLPs. Generally, assessment in dysphagia management includes a detailed case history, clinical observations, a relevant physical examination and oral trials of fluid and food as outlined in professional guidelines for SLPs by the American Speech-Language-Hearing Association (2003) and College of Audiologists and Speech-Language Pathologists of Ontario (2007). The assessment results are then used to establish a professional diagnosis, identify the need for intervention, determine the focus of treatment, identify the frequency and length of treatment, and aid referral to other professionals (Shipley & McAfee 1998). Other areas of dysphagia management undertaken by SLPs include educating and making appropriate referrals to other relevant professionals, counseling patients and caregivers, and conducting research activities to increase knowledge (Mustaffa Kamal et al. 2012). The management of dysphagia is vital as patients with dysphagia often present with an increased risk of developing other medical conditions or complications related to aspiration pneumonia. Dysphagia can also lead to malnutrition, dehydration, respiratory infections, and death (Ekberg et al. 2002).

The current study aims to gather information regarding medical officers' levels of awareness, involvement and training pertaining to dysphagia management. The term *dysphagia management* in this study refers to how the medical officers manage dysphagia cases. A similar study was initially carried out by Mustaffa Kamal et al. (2013) among medical, nursing and allied health professionals working in government hospitals in Malaysia to examine their levels of awareness, current involvement and training in dysphagia management as compared to those of similar cohorts of health professionals working in Queensland, Australia in which the multidisciplinary team approach is being practiced. The study found that most Malaysian professionals lacked awareness regarding the signs and symptoms of dysphagia and the role of SLPs in dysphagia management as compared to the health professionals in Queensland. To be specific, the current study focused on Hospital Universiti Sains Malaysia (Hospital USM) which is a teaching hospital that emphasizes medical education and serves as a training ground for medical specialists. Hospital USM is also a tertiary referral center for north-eastern peninsular Malaysia (Norsa'adah, Zainab & Knight 2013). In Hospital USM, speech and language pathology services are provided by the Audiology and Speech Pathology Unit that was established on the 1st of December 2010, located in the Otorhinolaryngology department. To this date, a limited number of studies (e.g., Mustaffa Kamal et al. 2012; 2013) have been conducted in Malaysia regarding dysphagia management, and none have specifically focused on determining the awareness, involvement and training of medical officers from frontline departments which manage dysphagia in a teaching hospital. Investigation into the awareness, training and involvement of medical officers in dysphagia management is required in order to comprehend the lack of referrals to SLPs. The frontline departments that manage non-acute dysphagia related cases in Hospital USM have been identified as the family medicine, medical, otorhinolaryngology, surgery, and neurosurgery departments.

Awareness in dysphagia management refers to the knowledge in identifying the presenting signs and symptoms of dysphagia which may encompass information regarding acute or chronic signs of aspiration. This is vital as awareness of dysphagia signs influences actions taken and referral to other health professionals. In addition, each party must possess awareness and value the contributions and perspectives of other professionals in inter-professional collaboration (Walsh, Brabeck & Howard 1999). In these terms, awareness is referred to as an understanding of the activities of others, which provides a context for one's own activity and serves as a measure of the medical officers' existential knowledge about dysphagia. As for *training*, the process begins at a prevocational level for most professionals. Having adequate levels of training is vital to the execution of clinical responsibilities and provision of quality services by healthcare providers (Yolsal et al. 2004). Further enhancement of skills in the workplace is recognized to be an important process that supports clinical learning and skill development. Multiple options are accessible for healthcare providers to learn new skills or strengthen professional competence including but not limited to the following: undertaking professional mentoring or supervision; reading current literature; and attending workshops, seminars and conferences (Golding & Gray 2006). A lack of training in any area has been shown to negatively impact treatment outcomes.

Involvement can be defined as direct participation in achieving a goal and meeting objectives by applying ideas, expertise and efforts towards problem solving and decision making. Health professionals such as nurses, dieticians, SLPs, and medical doctors may also exhibit involvement by participating in a dysphagia multidisciplinary team in the hospital setting (Rofes et al. 2010). Obviously, this multidisciplinary team is important in developing consistent assessment protocols, shared goals, and appropriate intervention for the patient with dysphagia. Another form of involvement can be seen in referral which outlines at least one visit to another specialist (Foster, Tilse & Fleming 2004). Referrals concern the management of a certain problem and reflect the most common form of partnership (McDaniel 1995).

MATERIALS AND METHODS

A survey-based design was used to construct a quantitative description of awareness, training, and involvement of medical officers in dysphagia management. Participants (51 medical officers) came from the family medicine, medical, otorhinolaryngology, neurosurgery, and surgery departments as they were identified as the frontline departments in Hospital USM that managed dysphagia cases. Simple random sampling was carried out to ensure that the sample well represented the medical officers in frontline departments. The random samples were generated using the SPSS 20.0 (PASW® Statistics) statistical package. Participants whose assigned numbers matched the numbers generated by the software were included in the sample. The researcher took an approximately equal sample from those five departments. The research study utilized an instrument from Mustaffa Kamal et al. (2013) "Levels of Awareness, Involvement and Training in Dysphagia Management among Other Health Professionals in Malaysia." In the present study, the questionnaire consisted of two parts: demographic data (Part A) and Training, awareness and involvement in dysphagia management (Part B). Firstly, in Part B, the aim was to identify medical officers' training in dysphagia management as calculated in hours. Secondly, awareness was measured based on participants' knowledge in identifying symptoms of dysphagia and their awareness of the role of SLPs in dysphagia management. Thirdly, the involvement of medical officers' in dysphagia management was ascertained by the roles participants affiliated themselves with and their dysphagia referral practises with regard to SLPs. Referral frequency was determined using a 5 point Likert scale and barriers to referral ascertained only if the participant had answered 'never' or 'seldom' in relation to making past referrals to SLPs. Overall, Part B consisted of 7 items. This set of questionnaire took approximately 10 minutes to complete.

The analysis and reporting of data was carried out with descriptive statistics by percentage measurement. Patterns of consistency within different groups of medical officers were also examined. A clinical practice rating system developed by Mathers-Schmidt and Kurlinski (2003) was used in the analysis of data. Items that were ascertained by more than 75% of participants as relevant to the question were marked as a 'highly consistent' response, those identified by 50% to 75% considered 'moderately consistent,' and where less than 50% marked the item as relevant, a 'no consistent' pattern was concluded (Mathers-Schmidt & Kurlinski 2003). The percentages were calculated by dividing the number of correct responses with the total number of participants per department.

RESULTS

The distribution of participants was rather fair among departments; 13 medical officers from family medicine department, 12 medical officers from medical department, 10 medical officers from otorhinolaryngology department, 9 medical officers from surgery department, and 7 medical officers from neurosurgery department. All the participants in the study were Malaysians. The participants across departments were mainly (62.7%) in the 31 to 35 years old age range, and consisted of 54.9% males and 45.1% females. In addition, the participants predominantly (74.5%) obtained their MBBS or equivalent from Malaysia, while the other (25.5%) obtained their MBBS from the United Kingdom, Russia, and India. With regard to housemanship, majority (96.1%) of the medical officers

trained in Malaysia, while the remaining 3.9% performed their housemanship in the United Kingdom. Besides that, approximately half (54.9%) of the medical officers have only served in their current department since being appointed as a medical officer while 45.1% indicated they had previously served in other departments. Data also showed that 51.1% of participants had more than 6 years of practice as a medical officer. The remaining participants had rather evenly distributed practice of less than one year to six years.

Data from the participant's current caseload revealed that majority (80.4%) handled multiple diagnostic populations (i.e. neurological, surgical, trauma, and metabolic cases) while only 19.6% managed single diagnostic populations. Neurological cases were the most (70.6%) commonly managed by the medical officers, followed by metabolic cases (60.8%) and surgical cases (52.9%). Overall, 70.6% of medical officers had dysphagia caseloads of less than or equal to 20%, followed by 21.6% having dysphagia caseloads of 21% to 40%, while 7.8% of the participants presented with caseloads of 41% to 60%. Majority of the medical officers from the medical (58.3%), otorhinolaryngology (60%), and surgery (88.9%) departments, and all the medical officers in the family medicine department indicate that dysphagia represented 20% or less of their caseload. On the whole, the data of these demographic variables is presented in Table 1.

AWARENESS IN DYSPHAGIA MANAGEMENT

Awareness in dysphagia management among medical officers was ascertained by *identification of dysphagia symptoms* and the *recognition of the SLPs role in managing dysphagia*. Descriptive data of *identifying symptoms as indicative of dysphagia* is presented in Table 2. The dysphagia symptoms were anterior leakage, oral residue, coughing or choking before, during or after the swallow, drastic weight loss, pneumonia, multiple swallows, increased duration of mealtimes, and others as identified by the participants. The symptoms categorized under others included the presence of oropharynx mass, foreign body sensation, recurrent pneumonia, collapsed lung, inability to eat or drink, and pain on swallowing. The data showed a wide variation of agreement among medical officers with the highest consistency across all departments being 90.6% for presence of coughing or choking before, during or after the swallow as indicative of dysphagia and the lowest consistency being 18.9% for multiple swallows.

TABLE 1. Demographic comparison among medical officers between departments (family medicine, medical, otorhinolaryngology, surgery, and neurosurgery)

Demographics	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
Age						
25-30 years	4 (30.8)	6 (50)	1 (10)	-	2(28.6)	13 (25.5)
31-35 years	8 (61.5)	6 (50)	7 (70)	7 (77.8)	4 (57.1)	32 (62.7)
36-40 years	1 (7.7)	-	2 (20)	2 (22.2)	1 (14.3)	6 (11.8)
Sex						
Male	-	5 (41.7)	7 (70)	9 (100)	7 (100)	28 (54.9)
Female	13 (100)	7 (58.3)	3 (30)	-	-	23 (45.1)
Country Obtained MBBS						
Malaysia	12 (92.3)	8 (66.7)	8 (80)	6 (66.7)	4 (57.1)	38 (74.5)
Other	1 (7.7)	4 (33.3)	2 (20)	3 (33.3)	3 (42.9)	13 (25.5)
Country of Housemanship						
Malaysia	13 (100)	11 (91.7)	10 (100)	8 (88.9)	7 (100)	49 (96.1)
Other	-	1 (8.3)	-	1 (11.1)	-	2 (3.9)
Previous Departments served In						
None	5 (35.8)	9 (75)	5 (50)	7 (77.8)	2 (28.6)	28 (54.9)
One	6 (46.2)	3 (25)	3 (30)	2 (22.2)	3 (42.9)	17 (33.3)
Two	1 (7.7)	-	-	-	1 (14.3)	2 (3.9)
Three	1 (7.7)	-	1 (10)	-	-	2 (3.9)
Four	-	-	1 (10)	-	-	1 (2.0)
Five	-	-	-	-	1 (14.3)	1 (2.0)
Work Experience(s)						
≤ 1 year	2 (15.4)	-	-	-	-	2 (3.9)
1;1-2 years	-	2 (16.7)	-	-	-	2 (3.9)
2;1-2 years	-	2 (16.7)	-	1 (11.1)	1 (14.3)	4 (7.8)
3;1-4 years	1 (7.7)	2 (16.7)	1 (10)	1 (11.1)	2 (28.6)	7 (13.7)
4;1-5 years	2 (15.4)	2 (16.7)	1 (10)	-	-	5 (9.8)
5;1-6 years	3 (23.1)	-	-	1 (11.1)	1 (14.3)	5 (9.8)
> 6 years	5 (38.5)	4 (33.3)	8 (80)	6 (66.7)	3 (42.9)	26 (51.1)

Continued

TABLE 1. *Continue*

Demographics	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
Current Patient Caseload						
Single Caseload	-	2 (16.7)	2 (20)	5 (55.6)	1 (14.3)	10 (19.6)
Multiple Caseloads	13 (100)	10 (83.3)	8 (80)	4 (44.4)	6 (85.7)	41 (80.4)
Neurological	12 (92.3)	10 (83.3)	6 (60)	1 (11.1)	7 (100)	36 (70.6)
Surgical	5 (38.5)	-	10 (100)	7 (77.8)	5 (71.4)	27 (52.9)
Trauma	3 (23.1)	-	7 (70)	4 (44.4)	5 (71.4)	19 (37.3)
Metabolic	13 (100)	10 (83.3)	4 (40)	3 (33.3)	1 (14.3)	31 (60.8)
Oncology	6 (46.2)	2 (16.7)	7 (70)	4 (44.4)	2 (28.6)	21 (41.2)
Others	11 (84.7)	1 (8.3)	1 (10)	3 (33.3)	-	16 (31.4)
Dysphagia Caseloads						
1-20%	13 (100)	7 (58.3)	6 (60)	8 (88.9)	2 (28.6)	36 (70.6)
21-40%	-	4 (33.3)	4 (40)	-	3 (42.9)	11 (21.6)
41-60%	-	1 (8.3)	-	1 (11.1)	2 (28.6)	4 (7.8)

TABLE 2. Consistency in identifying symptoms as indicative of dysphagia among medical officers between departments (family medicine, medical, otorhinolaryngology, surgery, and neurosurgery

Dysphagia symptoms	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
Anterior leakage	53.8*	91.7#	90#	18.2	85.7#	66*
Oral residue	38.5	41.7	50*	18.2	85.7#	43.4
Cough/Choke	84.6#	91.7#	100#	81.8#	100#	90.6#
Drastic weight loss	69.2*	41.7	30	72.7*	14.3	49.1
Pneumonia	38.5	58.3*	60*	36.4	85.7#	52.8*
Multiple swallows	30.8	8.3	30	18.2	0	18.9
Increased eating time	38.5	16.7	50*	27.3*	57.1*	35.8

#: high consistency (more than 75% agreement), *: moderate consistency (50% to75% agreement)
ORL: Otorhinolaryngology

Moderate consistency was exhibited across departments in ascertaining anterior leakage (66%) and pneumonia (52.8%) as indicators of dysphagia. Other symptoms (oropharynx mass, foreign body sensation, recurrent pneumonia, collapsed lung, stuck food, inability to eat or drink, and pain on swallowing) as identified by the medical officers were not included in the table. This is due to only 4 (2.2%) medical officers from the family medicine, otorhinolaryngology and surgery departments providing responses other than that were listed in the questionnaire.

Among the five departments, the medical officers in the neurosurgery department had the highest consistency in recognizing dysphagia symptoms with a total of 4 items (anterior leakage, oral residue, pneumonia, and coughing or choking before, during or after the swallow) falling in the more than 75% agreement category, and 1 item (increased meal time duration) falling in the 50% to 75% agreement category. The medical officers from the family medicine, medical, and otorhinolaryngology departments exhibited fair consistency in identifying dysphagia symptoms. Meanwhile, the medical officers from the surgery department had the lowest consistency in establishing symptoms indicative of dysphagia with only 1 item (coughing or choking before, during or after the swallow) in the more than 75% agreement category, and 1 item (drastic weight loss) in the 50% to 75% agreement category.

Awareness in dysphagia management was also measured by *recognition of the SLPs role*. The result is displayed in Table 3. Descriptive analysis revealed that the role most (86.8%) recognized by medical officers as affiliated to SLPs was educating the patient, caregiver, and other health professions regarding specific techniques for safe oral intake. Moderate consistency was exhibited among medical officers across all five departments in identifying the SLPs role as performing thorough clinical swallowing management (66.0%), analyzing swallowing function from instrumental assessment (62.3%), and planning for intervention and providing treatment for patient (52.8%). Least (43.4%) acknowledged by the medical officers was the SLPs role in diagnosing dysphagia.

TABLE 3. Consistency in identifying the SLPs role in dysphagia management among medical officers between departments (family medicine, medical, otorhinolaryngology, surgery, and neurosurgery)

Role of SLPs in dysphagia management	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
Perform thorough clinical swallowing management	46.2	75*	70*	54.5*	100#	66*
Analyze swallowing function from instrumental assessment	61.5*	66.7*	60*	45.5	85.7#	62.3*
Diagnose dysphagia	38.5	33.3	40	36.4	85.7#	43.4
Plan for intervention and provide treatment	30.8	75*	40	36.4	100#	52.8*
Consult other professionals as appropriate	53.8*	41.7	50*	45.5	57.1*	49.1
Educate others regarding specific techniques for safe oral intake	84.6#	100#	90#	63.6*	100#	86.8#

#: high consistency (more than 75% agreement), *: moderate consistency (50% to75% agreement).
ORL: Otorhinolaryngology

The medical officers from the neurosurgery department had the highest consistency of awareness regarding the SLPs role in dysphagia management exhibited by all five items (perform thorough clinical swallowing examination, analyze swallowing function from instrumental assessment, diagnose dysphagia, plan for intervention and provide treatment, and educate patient, caregiver, and health professionals regarding specific techniques for safe oral intake) having more than 75% agreement, and one item (consult other health professionals as appropriate) in the 50% to75% agreement category. Conversely, the surgery department medical officers had the lowest overall consistency as only two items (analyze swallowing function from instrumental assessment and educate patient, caregiver, and health professionals regarding specific techniques for safe oral intake) were ascertained as the role of SLPs with moderate consistency (50% to 75% agreement).

INVOLVEMENT IN DYSPHAGIA MANAGEMENT

Involvement in dysphagia management was identified by the presence of participation of the medical officer in team management of dysphagia, the role of the medical officer in dysphagia management, and the referral frequency of dysphagic patients to SLPs. The highest percentage (88.9%) of involvement was from medical officers in the otorhinolaryngology department, followed by medical officers from the surgery department (45.5%). The medical officers in the neurosurgery and medical departments had dysphagia team management percentages of 42.9% and 41.7% respectively. None of the family medicine department medical officers were involved in team management of dysphagia.

Further analysis was performed to identify the role of the medical officer in dysphagia management. The results are presented in Table 4. Three roles were identified with moderate consistency (50% to 75%) by participants from all five departments. They were to: (i) refer patient with suspected swallowing problem to a speech-language pathologist (52.8%); (ii) refer patient with suspected swallowing problem to health professional(s) other than a speech-language pathologist (52.8%); and (iii) screen swallowing functions of a patient (52.8%). None of the roles were identified with high consistency between medical officers of all five departments. Other roles (3.8%) of a medical officer in dysphagia management as identified by the participants were: (a) to administer oral trials; and (b) to investigate the cause of dysphagia (e.g. by a computerized tomography scan). However, the data on the other roles of medical officers were not included in the table due to its small percentage of contribution in the interpretation of the data.

Nevertheless, at least one role was identified with high consistency (more than 75% agreement) by medical officers in four departments (family medicine, medical, otorhinolaryngology, and neurosurgery) with all (100%) the neurosurgery department medical officers identifying referral of patient to SLPs as their responsibility, and all (100%) the family medicine department medical officers acknowledging referral to other health professionals as their role.

TRAINING IN DYSPHAGIA MANAGEMENT

The data of medical officers' training in dysphagia management through courses or workshops is shown in Table 5. Majority (90.2%) of the participants had no previous training in dysphagia management. Among the medical officers, 22.2% from surgery department, 14.3% from neurosurgery department and 7.7% from family medicine department reported having undergone

TABLE 4. Consistency in involvement in swallowing management among medical officers between departments (family medicine, medical, otorhinolaryngology, surgery, and neurosurgery)

Role of medical officer in dysphagia management	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
Refer patient to SLPs	23.1	75*	80#	9.1	100#	52.8*
Refer patient to other health professional	100#	66.7*	40	18.2	14.3	52.8*
Screen swallowing functions	30.8	83.3#	60*	27.3	71.4*	52.8*
Administer clinical swallowing examination	23.1	41.7	40	54.5*	14.3	35.8
Administer instrumental swallowing evaluation	0	0	50*	9.1	0	11.3

#: high consistency (more than 75% agreement), *: moderate consistency (50% to75% agreement).
ORL: Otorhinolaryngology

TABLE 5. Training in dysphagia management among medical officers in the family medicine, medical, otorhinolaryngology, surgeryand neurosurgery departments

Training in dysphagia management	Departments					
	Family Medicine/% *n* = 13	Medical/% *n* = 12	ORL/% *n* = 10	Surgery/% *n* = 9	Neurosurgery/% *n* = 7	Total/% *n* = 51
None	92.3	100	90	77.8	85.7	90.2
1-5 hours	7.7	-	10	22.2	14.3	9.8

some training in the form of courses or workshops for 1 to 5 hours. Meanwhile, all the medical officers from the medical department reported not having undergone any form of training.

DISCUSSION

A high consistency of *awareness* of medical officers in Hospital USM for presence of coughing and choking during, prior to or after meals supports review by Matsuo and Palmer (2008) which asserted that coughing or choking are among the most regular problems in dysphagia. As reported by McHorney et al. (2002) and Leopold and Kagel (1996), patients with dysphagia commonly present with coughing and choking on liquids and food in oropharyngeal swallowing with high prevalence. However, the high consistency of awareness only identified for this symptom of dysphagia is of concern as the likelihood of patients with dysphagia going unrecognized by majority of the medical officers in Hospital USM is high, coupled by the possibility of silent aspiration. The deficit of dysphagia sign and symptom awareness is most probably due to the lack of training with regards to dysphagia and its management as portrayed by the study results.

The awareness of the SLPs' role in dysphagia management varied significantly among the medical officers. In brief, the SLPs role incorporates conducting clinical and instrumental swallowing examinations with relevant professionals, planning for swallowing management and treatment, referral to relevant professionals, counseling of patients and their caregivers, educating other professionals, working as a team member, and participating in research activities (Mustaffa Kamal et al. 2012). Yet among the medical officers in the present study, especially in the family medicine and surgery department, low awareness of the SLPs role in dysphagia management was exhibited. The result suggests that many other roles of SLPs in dysphagia (such as educating of others regarding techniques for safe oral intake) are not acknowledged by the medical officers in Hospital USM. This may be due to a lack of awareness regarding speech-language pathology in general or lack of confidence in dysphagia management by SLPs as speech-language pathology is still considered an emerging field in Malaysia. It is important to note that the field of speech-language pathology in Malaysia is a developing profession that will take years to mature and grow (Koasta 2005) which may be the limiting factor to the medical officers' awareness about SLPs role in dysphagia management. According to Mustaffa Kamal and colleagues (2012), there were only 43 SLPs employed in 27 government hospitals in Malaysia to manage cases of adults and children with communication and swallowing problems. Therefore, it is crucial to acknowledge the small number of SLPs in Malaysia. As the workload of SLPs may spread across many areas, they deal with problems of minimal time for active involvement with patients with dysphagia. These matters may result in reduced awareness and knowledge among other health professionals about SLPs role in dysphagia management. The lack of awareness of SLPs role in

dysphagia management is also a key factor influencing the low numbers of referrals received by SLPs in Malaysia. In brief, the findings of the present study reflect that of studies conducted by Sharma et al. (2006) and Mustaffa Kamal et al. (2013) which indicated low awareness of professionals involved in dysphagia management and the role of SLPs in managing the dysphagic patient in Malaysia.

It is also very important to note that role definition is generally harder for newer professionals such as SLPs if there is insufficient knowledge regarding their role. This lack of role definition will affect the further establishment of the profession in the context of a team setting (Byrne & Pettigrew 2010). Hence, while the relatively brief history of speech and language therapy in Malaysia cannot be altered, measures to promote the role of SLPs can be undertaken to address this issue. This could be done by involving fully trained SLPs as keynote speakers in conferences related to dysphagia as well as by seizing the opportunity to be presenters in continuous medical education sessions in the department which will help introduce the role of SLPs in dysphagia management.

The data in the present study suggest that participants underwent similar training as majority of the medical officers obtained their MBBS from universities in Malaysia along with having carried out their housemanship training in Malaysia. Their training may have influenced their amount of exposure to the field of dysphagia, which advocates the need to include this particular field in medical school and houseman training in Malaysia. At this point, the authors emphasize the importance of facilitating medical students to obtain further knowledge of the specialties of other professionals they will encounter in their future career. This will ensure that stereotypes are avoided as students become professionals in their respective fields. Moreover, the finding that majority of these medical officers had no previous dysphagia training corroborates the results of a study by Mustaffa Kamal et al. (2013) which presented with 86.7% of medical professionals not having any experience in dysphagia training. With regard to training, Logemann et al. (2000) suggested that 4 to 5 hours of training in dysphagia related courses can produce significant improvement. Senarath, Fernando, and Rodrigo (2007) also asserted that ongoing workforce training aids in increasing knowledge and expertise. Hence, basic training in dysphagia screening should be provided to medical officers from the family medicine, medical, otorhinolaryngology, surgery, and neurosurgery departments to increase the quality of service delivery. The elements that can be included in dysphagia training include lectures, case studies, presentations, and group dialogues (Scholten 2001).

Team management of dysphagia is vital as it helps to reduce the frequency of hospital visits for patients with health complications and offers a thorough and simultaneous assessment of dysphagia. It also benefits the patient as each health professional provides their expertise and this increases the efficacy of the whole process (Duval et al. 2009). In brief, SLPs are core members of the dysphagia multidisciplinary team which usually include the otolaryngologist, neurologist, pulmonologist, and gastroenterologist and play an important role in assessing, diagnosing, and managing dysphagia (Logemann 1994). As Dombeck (1997) reiterated the importance of professional identity as a basis for successful collaboration in inter professional relationships, it is postulated that increased awareness of the SLPs role in dysphagia management will lead to better team member responsibility definition and eventually more consistent multidisciplinary practice patterns. In addition, it is the responsibility of all professionals involved to show commitment in developing rapport which is instrumental in eliminating stereotypes that exist between professional groups. McCallin (2003) asserts that by managing professional role and team function issues, clinicians can then concentrate on patient care provision. These highlighted factors should guide the establishing of team management of dysphagia in Hospital USM as it was found that only the medical officers in the neurosurgery and medical departments had dysphagia team management involvement whereas the medical officers in the family medicine department were not involved.

The uncertainty of the SLPs role in dysphagia management may be attributed to medical officers' lack of understanding of other health professionals as a whole. Concern regarding a lack of teaching of the roles and responsibilities of allied health care professionals in medical school has been backed up by studies conducted by McPherson and Sachs (1982) and Pringle et al. (2000) which suggest that interdisciplinary education is weak or totally absent in the curricula. Moreover, as discussed earlier in this paper, uncertainty of the SLPs role in dysphagia management, conditions to warrant referral, and speech-language pathology benefit to the patient could be due to the speech-language pathology field being relatively young in Malaysia. The speech-language pathology referral procedure for patients with dysphagia could be unknown to some medical officers due to a lack of experience in referring patients to SLPs altogether. This scenario could also be due to the medical officer having no experience with SLPs in general, hence the lack of knowledge regarding services provided by SLPs. Therefore, it is necessary to utilize strategies such as distributing pamphlets regarding signs/symptoms of dysphagia and dysphagia management by SLPs to other professionals, holding dysphagia related sessions in induction programs, and having discussions about dysphagia with other professionals to increase awareness of dysphagia signs and symptoms along with the SLPs role in dysphagia management.

CONCLUSION

This study helps to bring to light the current levels of awareness of medical officers in different departments about the signs and symptoms of dysphagia as well as the role

of SLPs in dysphagia management. In brief, the awareness and training of medical officers in managing dysphagia was found to be lacking. Barriers in the study were identified as the lack of awareness of dysphagia signs and symptoms along with the SLPs role in dysphagia management and the low referral rate to SLPs. Emphasis on troubleshooting issues underlying the lack of dysphagia management in hospitals will encourage increased multidisciplinary efforts and more effective patient care for an increased quality of life. This will in turn benefit the fields of medicine, speech-language pathology and medical education in Malaysia especially in the management of dysphagia cases. It is crucial that professional partnerships are not simply relied on but explored and reviewed to promote better service delivery for patients with dysphagia.

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