Provision of dysphagia services in a developing nation: Infrastructural challenges

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Abstract

Purpose: The purpose of the current study was to explore infrastructure issues that may be barriers to the establishment and improvement of dysphagia services in Malaysia compared to settings with established dysphagia management services (i.e. Queensland, Australia).

Method: A mixed method design incorporating quantitative and qualitative data was used to increase credibility, validity and comprehensiveness of the results. Thirty-eight hospitals (Malaysia = 21, Queensland = 17) participated in Phase 1 (quantitative component) of the study involving completion of an infrastructure checklist by a speech-language pathologist from each hospital regarding availability of networking and communication, staffing and financial support, facilities and documentation of guidelines for dysphagia management. Subsequently, eight sub-samples from each cohort were then involved in Phase 2 (qualitative component) of the study involving a semi-structured interview on issues related to the impact of infrastructure availability or constraints on service provision.

Result: The current study reveals that multiple challenges exist with regard to dysphagia services in Malaysian government hospitals compared to Queensland public hospitals.

Conclusion: Overall, it was identified that service improvement in Malaysia requires change at a systems and structures level, but also, more importantly, at the individual/personal level, particularly focusing on the culture, behaviour and attitudes among the staff regarding dysphagia services.

Keywords: Infrastructure, dysphagia management, speech-language pathologist, service provision, developing nation

Introduction

Malaysia is a multi-ethnic, multi-cultural Southeast Asian country with an area size of 329,750 square kilometres. It is a newly industrialized market economy and a country with rapid population growth which results from ongoing improvements in health and medical facilities. While access to healthcare facilities has improved, it is widely acknowledged that infrastructure plays a significant role in the development, establishment and ongoing improvements in any organization, including healthcare settings (American Dietetic Association, 1993; Pronovost, Rosenstein, Paine, Miller, Haller, Davis, et al., 2008). As such, the issue of having sufficient infrastructure to support new clinical services is especially important in a developing nation such as Malaysia where allied healthcare services are still being established. Several organizations have sought to provide greater clarity about the specific elements within systems, strategies and structures that need to be considered when addressing issues related to infrastructure (American Dietetic Association, 1993; Michigan Nonprofit Association, 2008). Terminology differs to some degree, but essentially there are five core elements which should be reviewed when exploring infrastructure. These include; networking and communication, staffing support, financial support, facility and documentation (American Dietetic Association, 1993; Michigan Nonprofit Association, 2008). A recent World Health Organization (WHO, 2008) guideline outlined the infrastructure consideration for health centres and similar principles including provision of facilities, documentation and communication were highlighted.

Networking and communication are vital elements of the infrastructure of a healthcare setting, with communication systems, structures and strategies both within and across clinical teams and between clinical...
and management staff recognized as integral to the success of the service. There is some evidence of networking and communication issues between Malaysian speech-language pathologists (SLPs) and other health professionals, particularly with regard to dysphagia management. In a study conducted by Mustaffa Kamal, Ward, and Cornwell (2012), less than half of the 30 surveyed Malaysian SLPs reported the ability to work as part of a multidisciplinary team (MDT) to manage dysphagia. There was also reduced consistency in referral patterns for patients with dysphagia to other health professionals compared to settings with established dysphagia management (Mustaffa Kamal et al., 2012). There is, however, no clear evidence of the causal factors leading to these limitations.

In relation to staffing support, literature has highlighted issues with the size of the available workforce within Malaysian healthcare settings. Studies have revealed that the numbers of SLPs within Malaysian government hospitals increased from only one known clinician in 1974 (American Speech-Language-Hearing Association (ASHA), 1976) to ~ 20 SLPs in 2003 (Van Dort, 2005). Although this growth has continued and at the time of the current study the numbers of clinicians working in Malaysian government settings had reached 43 (Mustaffa Kamal et al., 2012) it is still a small workforce to provide services to a population of 28.3 million (Department of Statistics Malaysia, 2011). In comparison, within the state of Queensland, Australia where all SLPs had to be registered to practice at the time the current study, there were over 1400 registered SLPs (Speech Pathologists Board of Queensland, 2010), for a population of 4.6 million (Australian Bureau of Statistics, 2011), of which 40% were employed within hospital services (Speech Pathologists Board of Queensland, 2009).

The small available workforce has been identified as a challenge to implementing SLP services within Malaysia. In a study of Malaysian SLPs, the workforce issue has been linked to a restricted ability to implement best practice management standards in the assessment of communication skills in children with developmental disabilities (Joginder Singh, Iacono, & Gray, 2011). Other Malaysian authors have also raised issues regarding the impact of shortage of SLPs towards services in the country (Lian & Abdullah, 2001; Santiago & Stansfield, 1998; Van Dort, 2005). Santiago and Stansfield (1998) highlighted the need for service prioritization in Malaysia due to the insufficient size of the workforce to provide services to all populations with speech-language disorders. Hence, it is quite possible that the current size of the available workforce is a factor impacting on quality dysphagia management in the country.

This needs further exploration to enable future considerations and actions to address the issues.

Ideally, in addition to funding for staffing and services, allocation of budget for research and ongoing professional development purposes should also be available within organizations to encourage application of current best clinical practice standards within the service. In Australia, for example, funding to support ongoing professional development and other initiatives available to encourage research activities are offered by the State Government of Queensland (Queensland Industrial Relations Commission, 2011). Speech Pathology Australia (2012), the national body for SLPs in the country, also provides various grants for its members to conduct research in the areas of speech-language pathology. The availability of financial support and/or its constraints and their influence on speech-language pathology services within Malaysia is yet to be explored.

There are a number of facility requirements including patient consultation rooms, equipment and resources that are needed to assess and manage dysphagia. To what extent issues relating to facility resources impact on current dysphagia management practices within Malaysia is unknown. It was found that the majority of SLPs in Malaysia (93%) and Queensland (100%) performed a clinical swallowing examination as an initial swallowing assessment (Mustaffa Kamal et al., 2012) and, when clinically indicated, patients were then referred for instrumental evaluation, including either fibre-optic endoscopic examination of swallowing (FEES) or videofluoroscopic swallowing study (VFSS). However, the Malaysian SLPs were found to use FEES more frequently than VFSS, which differed from Queensland clinicians (Mustaffa Kamal et al., 2012). While this finding may reflect a discrepancy in practice between the two cohorts, it is also possible that other issues such as facilities and space for clinical service provision may be influencing factors.

Finally, integral components of any good management system are clear policies, guidelines and documentation which inform staff of clinical practice expectations and practice patterns. Such documentation forms an important part of the communication chain within healthcare organizations, providing clear, concrete and accurate communication between management and clinicians and between clinicians. Current healthcare guidelines are developed based on best practice standards which aim to standardize clinical practice, ensure the best quality of services are provided to patients, reduce service-related risks and increase cost-effectiveness of services (Burgers, Grol, Klazinga, Mäkelä, & Zaat, 2003). Despite acknowledging the importance of having documentation in an organization, it remains a question whether such documentation is available to guide dysphagia management practices in Malaysia.

Deficits in infrastructure can have wide reaching effects on health service quality and, hence, improvements in an organization’s infrastructure can help bring about significant positive change. To date, it is unclear what infrastructure is currently available within Malaysian government hospitals to support the provision of dysphagia services. Hence there is a need for further systematic investigation of all potential elements of infrastructure to better understand potential factors impacting on the establishment and develop-
development of dysphagia services in Malaysia. Therefore, the purpose of the current study was to explore infrastructure issues that may be barriers to the establishment and improvement of dysphagia services in Malaysia. Specifically, the study aimed to (i) identify the availability and utilization of current infrastructure relevant to dysphagia management in Malaysia, (ii) explore the perceptions of Malaysian SLPs regarding infrastructure available to provide dysphagia services and (iii) compare the dysphagia infrastructure available in Malaysian settings with an established dysphagia management service such as Queensland Health (QHealth), Australia (Armstrong, 2003).

Method

Data was collected using a mixed method design incorporating quantitative and qualitative data obtained through a survey and interviews. Combining different research procedures provides more comprehensive research findings (Creswell & Plano-Clark, 2007), with enhanced accuracy (Patton, 2002) and validity (Stemler, 2001). Through the use of a sequential explanatory research design (Creswell & Plano-Clark, 2007) this study was divided into two main phases: Phase 1—completion of an infrastructure checklist by either (a) the longest-serving (senior) SLPs at the specific setting in Malaysia or (b) the Director of Speech Pathology or lead SLP in the QHealth facility (quantitative component); followed by Phase 2—semi-structured interviews with a smaller sub-set of the SLPs (qualitative component). Participants for Phase 2 were a purposeful sample drawn from Phase 1. The qualitative methodology allowed for in-depth exploration of the details that emerged from the quantitative component of the study.

Participants

Government hospitals in Malaysia and Queensland that employed at least one full-time SLP were recruited to the study. Preliminary investigations identified 27 out of 134 hospitals in Malaysia and 25 out of 166 hospitals in Queensland that fulfilled the inclusion criteria.

In Phase 1, the infrastructure checklist was sent to all eligible settings in both cohorts. Checklists were completed and returned by 21 (77.8%) Malaysian hospitals and 17 (68%) QHealth settings. Of this all Malaysian respondents and 14 (82.4%) Queensland respondents consented to participate in Phase 2.

Purposeful stratified sampling criteria saw the inclusion of Malaysian government hospitals and QHealth facilities who participated in Phase 1 represent the sub-sample for Phase 2. This included participants that represented hospitals of various sizes from large to small (Malaysia: large hospital ≥ 650 beds, small hospital < 650 beds; Queensland: large hospital ≥ 340 beds, small hospital < 340 beds) and across the extent of facilities available to support dysphagia management (ranging from clinical services only to services with clinical and instrumental equipment). Through this process, eight speech-language pathology departments from each country were selected, which included four large hospitals and four small hospitals. Within Malaysia, six of the eight (75%) hospitals involved in Phase 2 had FEES service (large hospital n = 4, small hospital n = 2), whilst two small hospitals had no instrumental swallowing examinations available. In Queensland, half of the settings had both FEES and VFSS services (large hospital n = 3, small hospital n = 1), two settings had only a VFSS service (large hospital n = 1, small hospital n = 1), while the remaining two small hospitals had no access to instrumental swallowing examination.

Procedure

Phase 1: Infrastructure checklist. An infrastructure checklist was developed for the purpose of identifying infrastructure currently available to SLPs in relation to the provision of dysphagia services and based on the Basic Infrastructure Checklist (Michigan Nonprofit Association, 2008) and previous healthcare literature (i.e. ASHA, 2007a; Duckett, 2005; Langmore & Logemann, 1991; National Health and Medical Research Council, 1996). The checklist consisted of a total of 42 questions relating to (a) networking and communication, (b) staffing support, (c) financial support, (d) facilities, (e) documentation of guidelines for dysphagia management and a final question regarding perceptions of the overall impact of infrastructure on dysphagia services. Responses to the questions were forced choice.

Phase 2: Semi-structured interview. The semi-structured interviews explored and expanded on the respondents’ perceptions of infrastructure available for the management of dysphagia within their hospital as identified from Phase 1 and provided more in-depth detail than the checklist regarding the impact of infrastructure availability or constraints on service provision. An interview guide consisting of four key questions was developed prior to the interview session, with additional questions asked during the interview based on the individual’s responses and the content of their completed checklist.

Interviews were conducted either face-to-face or through teleconference and held within 2 months of a participant returning the checklist. Lasting between 25–60 minutes in duration (mean = 37 minutes), all interviews were audio recorded for later verbatim transcription and analysis. All identifying information on the transcripts was removed and replaced by codes to ensure anonymity.

Data analysis

Phase 1 responses were converted into binary data and analysed using Stata 10 Data Analysis and Statistical Software (StataCorp, 2007). Frequency distributions of the “yes” and “no” responses for each
question in the checklist were calculated to explore, summarize and describe the infrastructure available in both Malaysian and Queensland hospitals. Chi-square analysis was used to identify differences between the two cohorts, while effect sizes were analysed using phi-coefficient. All questions from the infrastructure checklist, excluding the final question, are grouped and reported as (a) networking and communication, (b) staffing support, (c) financial support, (d) facilities and (e) documentation of guidelines. The final question in the infrastructure checklist (see Appendix to be found online at http://informahealthcare.com/doi/abs/10.3109/17549507.2015.1026276,) pertained to the overall impression of infrastructure effect on dysphagia service and, therefore, was not suited for inclusion in these sub-groups. A conservative significance level of $p < 0.01$ was set due to multiplicity of tests. The effect size’s magnitude of 0.1 was interpreted as a small effect, 0.3 as a medium effect and 0.5 as a large effect (Cohen, 1988).

Information from Phase 2 was analysed using qualitative content analysis (Graneheim & Lundman, 2004) and focused on content where differences between the two settings were highlighted. One researcher who was a native speaker of Malay (MR1) transcribed the Malaysian interviews, while another researcher, a native speaker of English (ER1), transcribed the Queensland interviews. Both sets of written transcriptions were then checked against the original recordings for accuracy of transcription by a third researcher who was fluent in both languages. The initial step of the content analysis involved MR1 and ER1 extracting relevant sections of the text for analysis. Two independent reviewers then completed peer checking on two transcripts each to verify the appropriateness of the content. The next step included identification of meaning units by MR1 and ER1. Condensation of these meaning units was then completed to shorten the length of the text while retaining the core meaning.

On completion of condensation of meaning units, the Malay interviews were broadly translated into English to allow MR1 and ER1 to meet and discuss the condensed meaning units and identify sub-themes emerging from the four transcripts from both groups. Discussions were then held between MR1 and other members of the research team to refine the sub-themes. Researcher MR1 then looked to apply these sub-themes to the remaining transcripts already analysed to the level of condensed meaning units. The final level of analysis involved further interpretation of the data to determine themes which represent an underlying thread of meaning across the sub-themes.

Results

Phase 1: Infrastructure checklist

The responses to the question on the overall impression of the impact of infrastructure on dysphagia services revealed no significant differences between the two groups ($\chi^2=1.38$, $p = 0.240$), with the majority of Malaysian ($n=15$, 71.4%) and QHealth ($n=9$, 52.9%) respondents reporting that infrastructure issues limited the provision of dysphagia services in their workplace.

Network ing and communication. The majority of respondents from Malaysia ($n=20$, 95.2%) and Queensland ($n=17$, 100%) ($\chi^2=0.83$, $p = 0.362$) indicated that SLPs at their workplace communicate with other health professionals with regard to patients with dysphagia. However, while all QHealth respondents indicated that they had sufficient communication with other health professionals, a significant ($\chi^2=16.28$, $p < 0.001$, $\phi=0.681$) proportion of Malaysian respondents ($n=14$, 65%) felt otherwise. Clinicians from both cohorts communicated face-to-face (Malaysia $n=16$, 80%; QHealth $n=17$, 100%), through phone conversations (Malaysia $n=15$, 75%; QHealth $n=15$, 88.2%) and by reviewing case notes (Malaysia $n=18$, 90%; QHealth $n=17$, 100%). Communication via e-mail among SLPs in Malaysian settings ($n=1$, 5%) was, however, significantly lower ($\chi^2=14.95$, $p < 0.001$, $\phi=0.646$) in comparison ($n=11$, 64.7%).

Referral policies relating to speech pathology services did not differ significantly between settings, although differences in some practices were noted. SLPs in all Malaysian settings required a referral to see a patient with dysphagia, while only 64.7% ($n=11$) of clinicians in QHealth settings reported the same. A further two (11.8%) QHealth respondents clarified that referral is not required for certain type of patients (e.g. stroke patients). Referrals within the QHealth settings were received through a range of methods including phone calls ($n=17$, 100%), referral slips ($n=16$, 94.1%), face-to-face communication ($n=16$, 94.1%), case notes ($n=12$, 70.6%) and e-mail/paging systems ($n=11$, 64.7%). Referrals within the Malaysian settings were mainly through referral slips ($n=20$, 95.2%).

Staffing support. Statistical analysis revealed significantly higher numbers ($\phi=0.467$) of unfilled SLP positions in Malaysian settings than in QHealth settings (Table I). The majority of respondents in both settings, however, reported they were under-staffed and had waiting lists for patients. Another significant difference ($\phi=0.574$) between the two cohorts was in the number of SLPs who were considered competent in dysphagia management. All respondents in QHealth settings considered their SLP staff competent to manage dysphagia, but less than half of the Malaysian respondents reported the availability of competent staff in the area of dysphagia (Table I). Opportunities existed for both cohorts to work alongside other health professionals involved in dysphagia management; however, the support received from colleagues with regard to the care of patients with dysphagia was significantly higher ($\phi=0.611$) in Queensland than in Malaysia (Table I).
Financial support. Analysis of the infrastructure checklist revealed no significant differences between Malaysia and Queensland with respect to availability and utilization of budgets, with the majority reporting receiving specific budget for clinical and professional development purposes (Table II). It was revealed that Malaysian SLPs did not receive a specific budget to conduct research, while a small number of Queensland respondents reported the availability of a research budget. Only one Queensland setting, however, reported using the budget for research relevant to dysphagia. A significant difference (Ø = 0.444) was observed between the two cohorts where more than half the respondents from QHealth indicated that the budgets received were sufficient to support dysphagia services at their workplace, while the majority of Malaysian respondents felt the opposite (Table II).

Facilities. There was no significant difference between the two cohorts pertaining to clinical space for speech-language pathology services. However, it was noted that almost double the number (n = 13, 61.9%) of Malaysian clinicians compared to Queensland clinicians (n = 6, 35.3%) felt they had inadequate space to provide dysphagia services. Although the majority of clinicians in Malaysia (n = 19, 90.5%) and QHealth (n = 15, 88.2%) had access to radiological services within their workplace, only one Malaysian setting utilized it for VFSS. This was significantly (χ² = 19.83, p < 0.001, Ø = 0.722) lower than in QHealth settings (n = 12, 80%). In contrast, the availability of flexible nasendoscopy in Malaysian settings (n = 19, 90.5%) was significantly (χ² = 10.58, p = 0.001, Ø = 0.527) higher than in QHealth (n = 7, 41.2%) and, where available, the majority of settings in both cohorts utilized it for FEES (Malaysia n = 15, 78.9%; QHealth n = 6, 85.7%).

Documentation. Only one (4.8%) Malaysian respondent reported the existence of clinical policies or guidelines for dysphagia management. This was significantly (χ² = 34.18, p < 0.001, Ø = 0.948) different to the QHealth setting where all respondents indicated they had at least one clinical policy or guideline.

Phase 2: Semi-structured interview

The content analysis in Phase 2 sought to draw out information relevant to the areas where Malaysia and Queensland differed in terms of current infrastructure (i.e. networking and communication, staffing support, facilities and documentation). There were seven sub-themes that emerged from the analysis: (i) staffing and facilities; (ii) service budget; (iii) policies and procedures; (iv) skills, training and development; (v) acknowledgement of SLP’s role; (vi) networking and communication; and (vii) service improvement. Two overarching themes emerged from interactions between the sub-themes: (i) systems and structures and (ii) culture, behaviour and attitudes.

Systems and structures. The overarching theme of systems and structures refers to the tangible aspects of infrastructure that require high level organizational and management support to enable them to function appropriately. This theme was informed by four sub-themes: (i) staffing and facilities, (ii) service budget, (iii) policies and procedures and (iv) service improvement. It was evident from the analysis that Malaysian SLPs felt there were a number of system and structure-based barriers preventing the establishment and development of dysphagia services within the government hospitals. In contrast, Queensland interviewees indicated that the systems and structures were generally in place to support dysphagia services.

The most prominent of the sub-themes within this theme related to the adequacy of staffing and facilities. Within the Malaysian context it was evident that interviewees perceived they were under-staffed due to limited workforce and ineffective recruitment.
Table II. Analysis of proportions of “yes” responses to “financial support” questions in the Malaysian (n = 21) and Queensland (n = 17) cohorts.

| Question | Malaysian n (%) | Queensland n (%) | \( \chi^2 \) | p  |
|----------|----------------|------------------|-------------|-----|
| Is there a specific budget allocation given to SLPs at your workplace for clinical purposes? | 18 (85.7) | 13 (76.5) | 0.53 | 0.465 |
| If yes, has the budget been utilized for professional development activities? | 15 (83.3) | 12 (76.5) | 0.54 | 0.462 |
| Is there a specific budget allocation given to SLPs at your workplace for professional development activities? | 16 (76.2) | 12 (70.6) | 0.15 | 0.697 |
| If yes, has the budget been utilized for professional development activities with regard to dysphagia management? | 11 (68.8) | 11 (91.7) | 2.14 | 0.144 |
| Is there a specific budget allocation given to SLPs at your workplace for research purposes? | 0 | 4 (23.5) | 5.52 | 0.019 |
| If yes, has the budget been utilized for research relevant to dysphagia? | 0 | 1 (25.0) | — | — |
| Is the budget sufficient to support dysphagia services at your workplace? | 3 (14.3) | 9 (56.2)* | 7.30 | 0.007* |

* Significant difference at \( p < 0.01 \); † One missing data point.

Exploration of these issues revealed that systems and structures within the Malaysian health and education were barriers to staffing hospitals adequately with SLPs. Malaysian respondents also noted that the number of SLPs in the country is insufficient to fill the positions. “Another factor is the SLP products itself are small in number … not many” (M08). Additionally, respondents perceived that delays in the recruitment processes to fill vacant positions limited their ability to recruit new clinicians: “Fresh graduates do not want to work at the government hospitals. I understand … delayed in employment processes by MOH (Ministry of Health). They have started working with private agencies and do not want to quit” (M08).

In contrast to the issues raised by the Malaysian clinicians, issues relating to staffing and facilities raised by the Queensland clinicians centred on challenges related to developing existing and future services, rather than issues relating to basic workload, “… we do assist with recruiting subjects for some other research that comes out of the university. We certainly are heavily involved in clinical education. We have lots of quality activities and those sorts of things that take up a lot of our time” (A18). No concerns were noted with staff training or skill level, supporting the findings from the quantitative analysis. Queensland interviewees also did not indicate being under-staffed, but noted their reliance on temporary staff due to broader workforce issues. As one stated, “Well we have got every position filled, but not by permanent staff completely” (A01) and added by another, “It is hard to recruit and retain in QHealth because there is a lot of maternity leave positions available, and nothing permanent” (A07).

Another issue of staffing and facilities was the size of each Malaysian clinician’s caseload. It was perceived that this meant Malaysian SLPs were only able to provide restricted services to patients as they were stretched across many and varied caseloads: “We are loaded with paediatric cases. In fact (for adult cases), not only for swallowing but also other cases such as aphasia” (M03). A further implication was that the heavy responsibility for each clinician limited their ability to participate effectively in inter- and multidisciplinary teams: “Never take initiative to develop a team management for dysphagia due to insufficient time, inadequate workforce … many other works to be done” (M09).

Malaysian respondents reported having inadequate work space (facilities) which impacted on delivery of core speech-language pathology services: “Sometimes patients could not watch the monitor (during FEES) because the space is very small” (M01). In contrast, although Queensland clinicians reported similarly in Phase 1, interviews revealed that this related to the challenges of seeking new work spaces for new services and spaces to conduct activities relating to the additional workload of the clinicians (e.g. for clinical education and research).

Both phases of this study revealed that Malaysian SLPs have the potential access to facilities within their hospitals to undertake instrumental evaluations of dysphagia. However, during the interviews it was noted that the limited use of the resources was due to the lack of skill among SLPs: “Flexible scope is available but has not been utilized for swallowing assessments. Staff are not trained” (M25). Similarly, inadequate skill was also reported for performing VFSS: “I need training if I want to perform VFSS. I never received any training regarding VFSS and so am not confident” (M27).

Additional concerns relating to facilities raised by Malaysian SLPs included limited internet access, reduced opportunities for online learning and no access to journals/articles. These factors were recognized as further restricting the development of
knowledge and skills. These issues were not actively raised as concerns by QHealth interviewees.

It was not surprising that multiple issues relating to service budget were raised and expanded on throughout the interviews in line with results from Phase 1. Content analysis revealed that a common issue discussed regarding clinical budgets was insufficient funding to purchase clinical resources, “I only received MYR2000 (~ AUD600) this year for consumable items” (M24). The lack of budget for professional development also brought in-depth discussion: “We received budgets through ENT (Ear, Nose and Throat Department). The problem is that it is considered as a one-off payment. No specific budget allocated for speech and audio” (M03). This emerged as an area of difference between the Malaysian and Queensland respondents, with the latter group indicating that their organization allocated each clinician a specific budget annually for professional development, “Ok so we get AUD1500 per clinician per year for professional development” (A09). Within the Malaysian context it was revealed that clinicians had access to minimal funds and that they had to compete with other professionals to get some amount of the service budget available for training, “We received MYR10,000 (~ AUD3000) last year for 65 staff to attend trainings, but only received half the amount this year. Thus, SLPs could not attend training” (M01).

Despite initial reporting of the lack of research budgets by Malaysian clinicians, the concern did not emerge during the interviews, as research was not seen as part of their workload: “Not sure about research budget … never conduct research” (M08). In contrast, Queensland interviewees reported that there was capacity within their current budget to assist with some research and quality improvement activities.

Another deficit identified by Malaysian clinicians related to the availability of policies and procedures to guide dysphagia services. Only one SLP reported the availability of a clinical guideline, “I use MOH’s dysphagia guideline, but it is not finalized. The guideline is not thorough and comprehensive” (M09). However, some respondents did not consider it as available, as it had yet to be finalized, “Ministry of Health Malaysia is developing a clinical guideline. It is actually not a guideline … not being utilized …” (M24). All QHealth interviewees reported having a range of professional policy documents either at a facility or departmental level, hence this was not of significance to them.

The final sub-theme, service improvement, within systems and structures was plans and actions taken to change practices and improve services. Malaysian respondents expressed the desire for increased numbers of SLPs within the workplace to assist with caseload, a need for adequate budget for clinics and professional development and the desire for comprehensive guidelines to help the development of standardized practices. However, there were no suggestions given regarding changes to structures and facilities. On the other hand, Queensland respondents were interested in seeing new initiatives that would further improve dysphagia services within their settings, including reviewing available guidelines and practices, and putting in a business case/plan to improve facilities.

Culture, behaviour and attitudes. This second theme pulls together the issues faced by the individual working within an organization, utilizing the available systems and structures. It encapsulated four sub-themes including (i) skills, training and development; (ii) networking and communication; (iii) acknowledgement of SLP’s role; and (iv) service improvement.

Among these four sub-themes, the major issue raised by Malaysian respondents was inadequate knowledge, skills and confidence of SLPs in dysphagia management, largely due to inadequate training and support for professional development. Many Malaysian clinicians raised concerns regarding their clinical skills, reporting that they feel “incompetence” (M03, M24), “lack of confidence in the area” (M09, M25) and “… to have received inadequate training” (M24). Within the culture of reduced skills, Malaysian clinicians consequently felt unable to provide adequate basic clinical dysphagia services: “I still have problem to manage patients where the orofacial looks normal but keep complaining of swallowing problems. Not all patients can be diagnosed accurately” (M09) and unable to start higher level dysphagia services: “Limited exposure so do not know how to interpret VFSS. No skills. If not we could request for the instruments to conduct VFSS” (M08). In contrast, Queensland respondents were generally satisfied with the current levels of skills in dysphagia management. For example, one Queensland respondent described, “The seniors that we have here at the moment are all very experienced in dysphagia. We have all been through the basic competency programs and then attended some advanced competency as well” (A08).

Closely relating to the skills were the challenges reported by Malaysian clinicians regarding networking and communication. They perceived that they were not ready to develop and participate in MDT management due to limited skills: “I do not feel confident to develop a team management for dysphagia. I never had a special training, never attended any course …” (M25). Once again they reported limited ability to use training and education as a means of networking: “If we had the skills, we can train other staff to assist us. The problem is our skills …” (M25). In contrast, the majority of Queensland respondents were generally satisfied with the networks, relationships and communication channels they had with other professionals. They felt they worked in a co-operative healthcare environment which contrasts with the Malaysian contexts where respondents felt unsupported: “Some ENT (doctors) are not really interested in dysphagia”
The Malaysian SLPs felt that they worked in a culture/environment where there was reduced acknowledgement of SLP’s roles among the professionals, “Doctors have no awareness and knowledge regarding our role in dysphagia. They associate dysphagia with dieticians … that’s it” (M22), while the opposite was true for Queensland SLPs, “Other professionals’ awareness of our role in dysphagia management is adequate” (A21). As a result, in Malaysia it was perceived that inappropriate services are often provided to patients, “Doctors always refer patients who are already stable and no longer have dysphagia. Doctors insert Ryle’s tube on patients who do not have gag reflex” (M24). In addition, Malaysian SLPs also reported receiving limited referrals for patients with dysphagia from other health professionals, “Received referrals (of patients with dysphagia) but not actively. It is difficult to get even 10 patients in a year. Actually there is much higher number …” (M03). Malaysian interviewees conceded that training and education of other health professionals would be one way to address this poor awareness, but felt under-skilled to rectify the problem. Encouragingly, SLPs within QHealth settings experienced similar problems during the early development of the profession; however, the problem has faded over time with the establishment of speech-language pathology services, training, increasing awareness of other professionals regarding dysphagia and SLP’s role, developing networking and communication, forming an SLP support group and implementing MDT management for dysphagia. However, during the interviews none of the Malaysian respondents mentioned carrying out any plans or actions to improve service, suggesting an almost passive awareness of something needing to be done, but with no history of having acted on this knowledge. In contrast, the QHealth interviewees discussed service improvement including maintaining the efforts made to improve services that had already existed; e.g. implementation of effective networking and communication with other staff to get better support and ongoing training relevant to dysphagia.

**Discussion**

The current study revealed that multiple challenges exist with regard to dysphagia services in the government hospitals in Malaysia in comparison to Queensland public hospitals. Overall, the information obtained from this two phase approach revealed that service improvement in Malaysia requires change at a systems and structures level, but, also more importantly, at the individual/personal level, particularly focusing on the culture, behaviour and attitudes among the staff.

With respect to systems and structures, a major challenge faced within Malaysian settings was the inadequate number of SLP to fulfil workplace demands. The current findings support previous work by the authors (Mustaffa Kamal et al., 2012), which suggested that workforce constraints continue to be a great barrier to the establishment of the service in Malaysia. Taking the largest hospital in both cohorts as an example; while there were 18 SLPs working in the largest QHealth setting that had 986 beds, only five SLPs worked in the largest (2331 beds) hospital in Malaysia. Despite the comparatively larger workforce available within QHealth settings, this workforce was also considered inadequate by some Queensland respondents. From the interviews it was revealed that, in contrast to the Malaysian context where the need for more SLPs was to cover the provision of basic services, in Queensland increased staffing was identified as required to ensure continued growth and expansion of current services.

The major consequence of workforce shortages discussed by Malaysian respondents was the inability for clinicians to fulfil service demands due to the heavy workloads, with potential flow-on effects to the quality and care of patients. Previous research in residential care settings related to nutritional care (namely provision of feeding assistance) has identified that inadequate staffing results in reduced service provision and lower quality of care (Kayser-Jones & Schell, 1997). Conversely, evidence suggests higher staff-to-client ratios in residential care facilities result in better healthcare outcomes (Schnelle, Simmons, Harrington,
Cadogan, Garcia, & Bates-Jensen, 2004). Once workforce shortages have been addressed in terms of basic service needs, Malaysian SLPs may then seek to extend their role to include the range of duties outlined as required of Queensland SLPs. These duties included weekend/on-call services, participate in and conduct research, provide mentoring and education to other staff, and supervise undergraduate students’ practical training. As the current data has evidenced, there is no magic number for staff–patient ratio as this is highly influenced by scope of practice, roles and service expectations. However, based on the average staff to patient loads within the current Queensland settings (~ 1:50, clinician:patient), the number of Malaysian SLPs would need to be 8-times larger than it currently is to provide a comparable range of services. Thus, there is an urgent need to address the number of SLPs available within Malaysian health services in order to assist the available workforce to better manage the existing caseload and provide better quality care for patients with dysphagia.

Workforce shortages in Malaysia, however, cannot be addressed purely by creating more positions as an identified barrier to increasing clinician numbers was the inability to find staff available to fill open positions. Only two universities in Malaysia offer a speech-language pathology program, with an average of 15 students per intake. Hence, availability of SLPs to fulfil vacant positions will continue to be an issue until graduate numbers increase locally. Additionally, recruitment processes within the MOH Malaysia were identified as a barrier to attracting new graduates to join the government service and are an area for system improvement.

Another key issue which dominated the Malaysian interviews was the negative perceptions and beliefs of the current existing SLP staff. Of greatest concern was that Malaysian clinicians reported feeling incompetent and unprepared to manage dysphagia due to limited training in the area, lack of interdisciplinary interaction and lack of support for professional development. This lack of confidence and skills was revealed to be having a considerable impact on the willingness and desire of clinicians to deliver dysphagia services within Malaysian government hospitals. Furthermore, as a consequence of the reduced clinical confidence and capacity, Malaysian clinicians felt unprepared to market their services and to provide training/awareness to other health professionals with regard to dysphagia. Integrating the information obtained from the quantitative and qualitative phases of the study, it seems that Malaysian clinicians have reduced interactions with other professionals when managing dysphagia and feel other professionals lacked awareness of the SLPs role in managing the disorder. However, until such time as Malaysian clinicians feel confident in their skills and are willing to promote their professional role and educate other health professionals about their role, improvements in the levels of interaction or teamwork with other professionals cannot be realized.

Increasing the clinical knowledge, skills and confidence in dysphagia management of Malaysian SLPs through further training should be a priority. The availability of funding to support professional development in current SLPs in Malaysia though was limited, unlike the SLPs working within QHealth. An annual budget for professional development activities, such as that described by QHealth SLPs, could improve access to professional development for SLPs in Malaysia. Consideration also needs to be given to the curriculum within Malaysian university courses as a method to prepare the future workforce for this area of practice. Considering the negative impact of the perceived low levels of skill, knowledge and confidence on clinical services, it is critical that training opportunities are improved, otherwise the deficits will remain and services will go unchanged.

Another key challenge relating to organizational systems and structures was the deficit in available budget to support dysphagia services in Malaysia. Funding to support even basic clinical needs was reportedly restricted by limited budgets in some Malaysian settings. Adequate budget is recognized as an important structure of an organization and has been associated with improved public health services (Palm, 2001). For example, in Nebraska, a state recognized to lack public health infrastructure, the provision of financial support from a public health trust fund enabled community-based organizations within the state to lead the development of local public health departments (Palm, 2001). The aim was to build leadership, create networking to address public health issues and develop procedures and policies to guide public health services (Palm, 2001). Thus, it is conceivable that improvements and changes to SLP services for dysphagia in Malaysia could be made possible with enhanced funding for clinical services.

Another infrastructure challenge raised by clinicians in both cohorts was insufficient clinical space. Within Malaysian hospitals, this was related to inadequate space available to provide current services. This issue needs to be addressed and also monitored on an ongoing basis as the staffing levels continue to grow, albeit at a slow rate. In Queensland, space was an issue from the perspective of the high demands of speech-language pathology services, where more spaces are required not only for clinical services, but also for students practicum and research.

Regarding available facilities for assessment purposes, radiological services in Malaysian settings were found to be under-utilized for dysphagia management. This finding was consistent with the recent study where it was reported that the majority of Malaysian clinicians infrequently used VFSS (Mustaffa Kamal et al., 2012). While the authors suggested that this may have been due to the close working relationship with the ENT department and access to FEES, the current study reveals that a primary reason was the lack of training and skills the
SLPs had to perform the procedure. This significant barrier requires actions at the level of both university training programs and ongoing professional development activities. Professional practice documents state that the development of a training program for dysphagia management should cover VFSS’s procedures comprehensively (ASHA, 2007b). A related factor further impacting this issue was the reported lack of support or prompt action from other professionals required to assist with instrumental assessments (e.g. ENT staff), further limiting their use. This lack of available and willing personnel to assist the SLP with instrumental studies is a further barrier to implementation of comprehensive assessments needed for thorough diagnosis and decision-making.

Issues relating to the lack of access to information and communication technology (ICT) facilities for Malaysian clinicians also require attention. While Queensland clinicians have access to computers, the internet and databases of research literature, these facilities were generally not available within Malaysian government hospitals. Acknowledging that the benefits of ICT include rapid access and transmission of information for networking and communication as well as professional education, this basic facility should be made available for health service providers in Malaysia. In light of the previously discussed issues with funding for professional development, increased access to resources via ICT such as online training opportunities and open access journals may address the deficit in practical knowledge in dysphagia management.

The lack of available policies/procedures to guide practices in dysphagia management was found to be another challenge to services in Malaysia. Possible reasons for the absence of guidelines in Malaysia may be due to non-existence of local experts to guide in the development process. Additionally, as Malaysian SLPs do not require a professional registration to practice, there is no single body to enforce the need to adhere to any guideline. It is, however, recognized that a systematically designed guideline may assist service providers to support appropriate decision-making processes in patient care (Field & Lohr, 1990), describe appropriate care for patients based on available evidence, reduce inappropriate variation in practice, guide referral processes, inform the need for ongoing professional development, promote appropriate use of clinical resources and control service quality (Burgers et al., 2003; Woolf, Grol, Hutchinson, Eccles, & Grimshaw, 1999). As such, without available guidelines to support dysphagia practices in Malaysia, it is not surprising that multiple challenges exist in clinical practice. The current study, therefore, highlights the need to develop a systematic guideline to assist with quality control of dysphagia services in Malaysia. Malaysian clinicians reported referring to clinical procedures and practices in other countries to guide their practice (Joginder Singh et al., 2011; Lian & Abdullah, 2001). However, it is acknowledged that guidelines developed in other countries should be applied with caution, due to inherent differences between the countries’ geographical, linguistic, cultural, financial and organizational needs (Santiago & Stansfield, 1998). Therefore, it is recommended that SLPs in Malaysia develop their own guidelines to suit their nature of practice.

**Limitations and future directions**

While the current study has identified invaluable information regarding the status of dysphagia services in Malaysian government hospitals, the potential barriers to service development, as well as a possible intervention to improve services; several limitations need to be considered when interpreting the findings. The study focused on public health services only and, therefore, results may not be representative of infrastructure issues in private facilities in either country. In addition, the current research provides a managerial perspective regarding service barriers and facilitators and may not reflect the opinion of all clinicians.

The findings from the current study will raise awareness of the current state of dysphagia services in Malaysia (strengths and weaknesses) that can inform service development by Malaysian SLPs, other health professionals and healthcare administrators. It is envisaged that, through increased awareness and implementation of strategies to improve the services, there will be improved health outcomes for people with dysphagia. Future research should focus on evaluating the effectiveness of implementing strategies aimed at addressing the identified barriers. While issues of budget and clinical space need to be addressed, the capacity to advocate for these and to improve service provision in general potentially relies on addressing the perceived lack of skill, knowledge and confidence expressed by clinicians. Consequently, from a professional standpoint, the priority areas to address would be the training and upskilling of existing Malaysian clinicians, ensuring new graduates are suitably trained on graduation and supporting SLPs to advocate for their professional role and identity.

**Conclusion**

Actions that need to be taken at the organizational level to improve dysphagia services in Malaysia include: improving the size of the available workforce; increasing financial support for clinician services and, more importantly, for professional development activities; encouraging the development of dysphagia guidelines/policies; allocation of adequate clinic spaces for SLPs to practice; and improved access to computing and the internet to facilitate clinical practice and professional development. Modification or the use of available guidelines on the development of infrastructure in developed
countries such as Australia (e.g. Humphreys & Wakerman, 2008) and the UK (e.g. Stephens, Levine, Burling, & Russ-Eft, 2011) is recommended as a guide to reduce costs of planning and to ensure effectiveness. At the individual level, there needs to be a commitment by clinicians to work towards the changes required to services within their healthcare facility. They also need to address their own deficits in knowledge and skill by actively seeking ways to complete ongoing learning and professional development to improve their skills and confidence in dysphagia management. Finally, clinicians need to actively engage with the other professionals involved in dysphagia management through improved communication and increased professional awareness of the SLPs role in dysphagia management.

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**Supplementary material available online**

Supplementary Appendix, available online at: http://informahealthcare.com/doi/abs/10.3109/17549507.2015.1026276.