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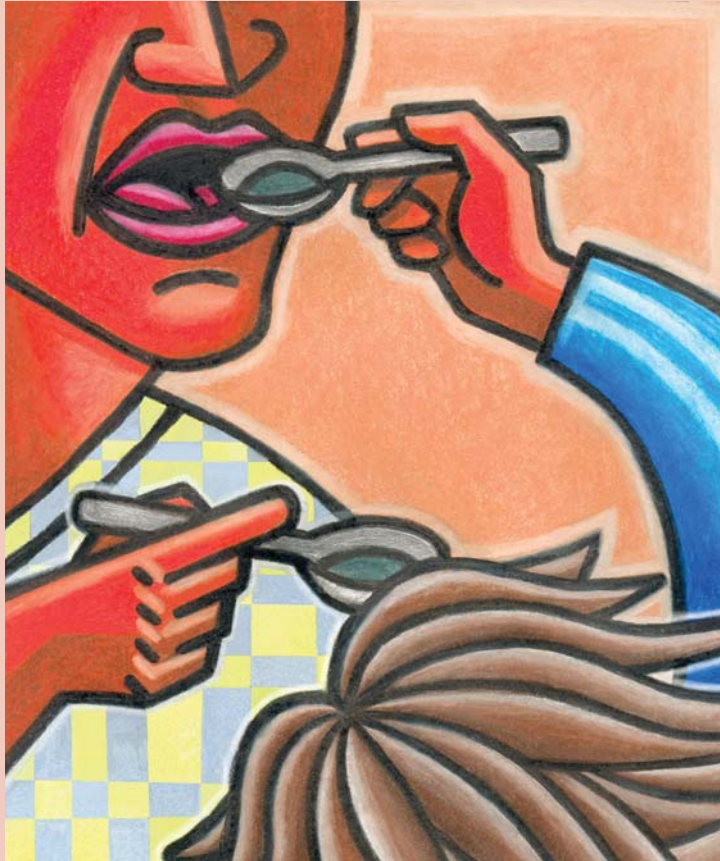
Canadian Journal of Speech-Language Pathology and Audiology

Revue canadienne d'orthophonie et d'audiologie

CASLPA-ACOA

CANADIAN JOURNAL OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

Purpose and Scope

The Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) is the recognized national professional association of speech-language pathologists and audiologists in Canada. The association was founded in 1964, incorporated under federal charter in 1975 and is committed to fostering the highest quality of service to communicatively impaired individuals and members of their families. It began its periodical publications program in 1973.

The purpose of the Canadian Journal of Speech-Language Pathology and Audiology (CJSLPA) is to disseminate contemporary knowledge pertaining to normal human communication and related disorders of communication that influence speech, language, and hearing processes. The scope of the Journal is broadly defined so as to provide the most inclusive venue for work in human communication and its disorders. CJSLPA publishes both applied and basic research, reports of clinical and laboratory inquiry, as well as educational articles related to normal and disordered speech, language, and hearing in all age groups. Classes of manuscripts suitable for publication consideration in CJSLPA include tutorials, traditional research or review articles, clinical, field, and brief reports, research notes, and letters to the editor (see Information to Contributors). CJSLPA seeks to publish articles that reflect the broad range of interests in speech-language pathology and audiology, speech sciences, hearing science, and that of related professions. The Journal also publishes book reviews, as well as independent reviews of commercially available clinical materials and resources.

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Objet et Portée

L'Association canadienne des orthophonistes et audiologistes (ACOA) est l'association professionnelle nationale reconnue des orthophonistes et des audiologistes du Canada. L'Association a été fondée en 1964 et incorporée en vertu de la charte fédérale en 1975. L'Association s'engage à favoriser la meilleure qualité de services aux personnes atteintes de troubles de la communication et à leurs familles. Dans ce but, l'Association entend, entre autres, contribuer au corpus de connaissances dans le domaine des communications humaines et des troubles qui s'y rapportent. L'Association a mis sur pied son programme de publications en 1973.

L'objet de la Revue canadienne d'orthophonie et d'audiologie (RCOA) est de diffuser des connaissances relatives à la communication humaine et aux troubles de la communication qui influencent la parole, le langage et l'audition. La portée de la Revue est plutôt générale de manière à offrir un véhicule des plus compréhensifs pour la recherche effectuée sur la communication humaine et les troubles qui s'y rapportent. La RCOA publie à la fois les ouvrages de recherche appliquée et fondamentale, les comptes rendus de recherche clinique et en laboratoire, ainsi que des articles éducatifs portant sur la parole, le langage et l'audition normaux ou désordonnés pour tous les groupes d'âge. Les catégories de manuscrits susceptibles d'être publiés dans la RCOA comprennent les tutoriels, les articles de recherche conventionnelle ou de synthèse, les comptes rendus cliniques, pratiques et sommaires, les notes de recherche, et les courriers des lecteurs (voir Renseignements à l'intention des collaborateurs). La RCOA cherche à publier des articles qui reflètent une vaste gamme d'intérêts en orthophonie et en audiologie, en sciences de la parole, en science de l'audition et en diverses professions connexes. La Revue publie également des critiques de livres ainsi que des critiques indépendantes de matériel et de ressources cliniques offerts commercialement.

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Réviseurs de la RCOA

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From the Editor

Fall Issue

This issue coincidentally contains three articles involving adults, either as clients or as students. In the study reported in the first article, authored by Tammy Hopper, Stuart Cleary, Mary Jo Donnelly, and Shawna Elgar, speech-language pathologists from across Canada who work with older adults or adults with neurological communication and swallowing disorders were surveyed. Questions were designed to elicit information about the clinical perspectives and practice patterns of these professionals with regard to dementia. Respondents identified perceived barriers to provision of assessment and intervention services to individuals with dementia. The authors summarize the survey results and make recommendations regarding public awareness and advocacy.

The adults in our second article were students in a course on dysphagia. The authors of the article, Tim Bressmann, Rosemary Martino, Elizabeth Rochon, and Kim Bradley, describe a set of experiences that they included as part of the course. The experiences were designed to give the students a taste (forgive the pun) of what it is like to be fed by another person with texture-modified foods and therapeutic swallowing strategies. The article reports on the students' evaluation of these experiences.

The purpose of the third article is to review the World Health Organization's International Classification of Functioning and Disability's (ICF) conceptual framework and to examine the assessment of functional communication abilities of adults with traumatic brain injury in light of the WHO-ICF framework. The authors, Julia Hughes and J. B. Orange, examined three assessment tools used with adults with TBI by mapping items from the tests onto the WHO-ICF categories. They discuss the implications of the WHO-ICF framework for functional assessment of communication and call for further research on how to assess communication in a way that captures the full range of the framework's categories.

Also included in this issue are two book reviews. One is a review of Textbook of Voice Disorders, edited by Albert L. Merati and Steven A. Bielamowicz, and reviewed by Melanie Campbell. The intent of the editors was to provide an essential textbook for speech-language pathologists as well as student and practicing otolaryngologists. The other review, by Denyse Hayward, is of Sharing Books and Stories to Promote Language and Literacy, edited by Anne van Kleeck. The book is intended to provide resources to professionals working with young children to facilitate language and literacy skills.

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De la rédactrice en chef
Numéro de l'automne

Le présent numéro comporte par hasard trois articles sur des adultes, qu'il s'agisse de clients ou d'étudiants. L'étude présenté dans le premier article, signé par Tammy Hopper, Stuart Cleary, Mary Jo Donnelly et Shawna Elgar, a sondé les orthophonistes travaillant aux quatre coins du Canada auprès d'aînés et d'adultes ayant des troubles neurologiques de communication et de déglutition. Les questions visaient à obtenir de l'information sur les perspectives cliniques et les pratiques de ces professionnels dans le domaine de la démence. Les répondants ont indiqué les obstacles perçus entravant la prestation de services aux personnes atteintes de démence. Les auteurs résument les résultats de leur sondage et formulent des recommandations concernant la sensibilisation du public et la défense des intérêts des personnes atteintes de démence.

Les adultes du second article sont composés d'étudiants suivant un cours sur la dysphagie. Les auteurs, à savoir Tim Bressmann, Rosemary Martino, Elizabeth Rochon et Kim Bradley, décrivent une série d'expériences qu'ils ont menées dans le cadre du cours pour montrer aux étudiants ce que c'est que de se faire donner à manger des aliments à texture modifiée par une autre personne et ce que sont les stratégies de thérapies de déglutition. L'article présente l'évaluation que les étudiants ont faite de ces expériences.

Le troisième article vise à passer en revue la Classification internationale des fonctionnalités, incapacités et états de santé (CIF) de l'Organisation mondiale de la santé (OMS), et à examiner comment sont évaluées les habiletés de communication fonctionnelle chez les adultes ayant subi un traumatisme cranio-cérébral (TCC) en regard de cette classification. Les auteurs, Julia Hughes et J. B. Orange, se sont attardés à trois outils d'évaluation utilisés avec des adultes ayant subi un TCC; ils ont représenté des éléments des tests sur les catégories de la CIF de l'OMS. Ils abordent les incidences de la CIF sur l'évaluation de la communication fonctionnelle et demandent d'approfondir les recherches sur la façon d'évaluer la communication de manière à saisir toute la gamme de catégories de la classification.

Ce numéro comprend aussi deux comptes rendus de livre. L'un a été préparé par Melanie Campbell et porte sur le manuel Textbook of Voice Disorders, publié sous la direction d'Albert L. Merati et de Steven A. Bielamowicz, qui ont cherché à faire un ouvrage essentiel pour les orthophonistes ainsi que les étudiants et les oto-rhino-laryngologistes praticiens. L'autre compte rendu, de Denyse Hayward, porte sur Sharing Books and Stories to Promote Language and Literacy, publié sous la direction d'Anne van Kleeck. Ce livre vise à offrir des ressources aux professionnels qui travaillent avec de jeunes enfants pour faciliter l'acquisition du langage et la littératie.

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■ Service delivery for older Canadians with dementia : A survey of speech-language pathologists

■ Prestation de services pour les Canadiens âgés atteints de démence : un sondage auprès des orthophonistes

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Abstract

The purpose of this study was to survey speech-language pathologists (S-LPs) working in Canada, who identified themselves as providing services to older adults or adults with neurological communication and swallowing disorders, about their clinical perspectives and practice patterns in the area of dementia. Researchers designed a questionnaire-based survey specifically for this study and mailed it to 514 Canadian S-LPs.

Three hundred and four completed surveys were returned. Respondents reported on their caseload and work habits in the area of dementia and indicated their perspectives on dementia, including the role of S-LPs and perceived barriers to service delivery. Although respondents indicated positive opinions on the role of S-LPs with individuals who have dementia and the potential of affected individuals to benefit from certain interventions, they also reported barriers to providing assessment and intervention services. The results of the survey provide a foundation for future research in the area of S-LP services for individuals with dementia in Canada, as well as directions for education, training, and advocacy.

Abrégé

La présente étude visait à sonder les orthophonistes travaillant au Canada qui ont signalé desservir des personnes âgées ou des adultes ayant des troubles neurologiques de la communication et de la déglutition. Le sondage cherchait à recueillir leur point de vue clinique et leurs modèles de pratique dans le domaine de la démence. Les chercheurs ont élaboré un questionnaire spécialement pour cette étude et l'ont posté à 514 orthophonistes canadiens. Ils ont reçu 304 réponses.

Les répondants ont indiqué leur charge de travail et leurs habitudes de travail dans le domaine de la démence et ont fait part de leur point de vue sur ce trouble, y compris le rôle de l'orthophoniste et les obstacles perçus entravant la prestation de services. Bien que les répondants aient indiqué des opinions positives concernant le rôle des orthophonistes auprès des personnes atteintes de démence et les capacités de ces dernières à bénéficier de certaines interventions, ils ont aussi signalé des obstacles entravant la prestation de services d'évaluation et d'intervention. Les résultats du sondage fournissent un fondement pour de futures recherches sur la prestation de services d'orthophonie pour les personnes atteintes de démence au Canada ainsi que des orientations pour l'éducation, la formation et la défense des intérêts.

Key words: dementia, service delivery, communication, survey, speech-language pathology, Alzheimer's disease

People in developed (e.g., North America, Europe) and developing (e.g., India, Egypt, Mexico) nations of the world are aging rapidly (Kinsella & Velkoff, 2001). In Canada, people older than 65 years currently comprise 13.1% of the country's total population (Statistics Canada, 2006), and the number of Canadians over the age of 65 is projected to increase for several decades. Although many Canadians are healthy in their older age, approximately 8% of individuals over the age of 65 have a diagnosis of Alzheimer's disease or a related dementia (Canadian Study of Health and Aging (CSHA) Working Group, 1994a) with approximately 60,150 new cases of dementia diagnosed each year (CSHA Working Group, 2000). By 2021 592,000 Canadians will have a diagnosis of dementia (CSHA Working Group, 1994a).

Dementia is defined in the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) as "the development of multiple cognitive deficits that include memory impairment" (p.148) and at least one of the following conditions: aphasia, apraxia, agnosia, or dysexecutive syndrome. These cognitive deficits must cause disruption in occupational or social functioning and must represent a decline from previous levels of performance. Of the different types of dementia, Alzheimer's disease (AD) is the most common, accounting for more than 50% of cases (Katzman & Bick, 2000).

In AD, the central executive component of working memory and the episodic memory system are prominently affected in the early stages of the disease (Baddeley, Logie, Bressi, Della Sala & Spinnler, 1986; Greene, Baddeley & Hodges, 1996). These and other cognitive impairments associated with AD adversely affect communication and manifest as deficits in the ability to hold information in mind, to respond appropriately to others' comments, to initiate conversation, and to select the appropriate words for the conversational topic (Bayles & Tomoeda, 1983; Fromm & Holland, 1989; Kempler, Almor, Tyler, Andersen, & MacDonald, 1998; Orange & Purves, 1996; Orange, Lubinski, & Higginbotham, 1996; Ripich, Vertes, Whitehouse, Fulton, & Ekelman, 1991; Tomoeda & Bayles, 1993).

People with communication disorders of dementia may need speech-language pathology (S-LP) services. After a thorough assessment of cognitive-communication abilities, S-LPs may work with individuals who have dementia individually or in groups to improve communication through the use of structured activities and stimuli (e.g., using memory wallets, conducting reminiscence therapy groups). In addition, S-LPs may teach caregivers of individuals with dementia effective communication strategies to help them manage problem behaviours (e.g., repetitive question asking), facilitate activities of daily living, and promote social interaction.

Although S-LPs can provide rehabilitation services to individuals with dementia, little is known about about the nature of these services and S-LPs' perspectives on dementia in a Canadian context. Given the increasing prevalence of dementia among older Canadians, knowledge about service delivery is necessary to determine the need for clinical training, advocacy initiatives, and future research directions. A survey instrument was designed to answer the following research questions: 1) What are S-LPs' perspectives or opinions on service delivery for individuals with dementia? 2) What are S-LPs' practice patterns with regard to individuals with dementia?

Method

Procedure and Sample

Following approval by the Health Research Ethics Board at the University of Alberta (Approval Number B-080402-REM) in 2002, the survey was mailed out to 514 Canadian S-LPs in all provinces and the Yukon (no addresses were available for S-LPs in the Northwest Territories and Nunavut). Survey recipients had given consent to the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) to receive outside mail and identified themselves as working with older adults and/or individuals with any of the following diagnoses: dysphagia, dementia, cognitive impairment, and aphasia. CASLPA provided the researchers with names and addresses from the electronic web-based membership directory current at the time of the study.

The researchers used the multiple mail-out method recommended by Salant and Dillman (1994). The first mailing included a cover letter explaining the study, a numbered survey, and a postage-paid return envelope. Six weeks after the first mailing, researchers sent a reminder letter to all individuals who had not yet responded. Three months after the first mailing, researchers sent a second copy of the cover letter, survey and postage-paid return envelope to any individuals who had still not responded. Quebec residents were sent the cover letters and surveys in both English and French. The primary or preferred language of potential respondents could not be identified based on CASLPA address listings and therefore only English versions of the survey were sent to S-LPs outside of Quebec.

Survey Instrument

The researchers developed the questionnaire-based survey for the current study after a literature review revealed no other instrument suitable for this purpose. Two of the authors (S-LPs, TH and SC) designed the questions and refined them with assistance from statistical and methodology consultants hired to assist with survey development, database management and analysis.

The four-page survey consisted of 16 questions in three sections. In Section A: Demographics, respondents indicated their age category, gender, years of practice, primary practice setting, geographic region and community type (i.e., urban >10,000, rural <10,000 or both). In Section B: Typical caseload and work habits respondents were asked to estimate the number, age category and diagnoses of clients seen daily and over the previous 30

and 60 days. Respondents who worked with individuals with dementia were also asked to indicate assessment tools and types of interventions used with these patients.

In Section C: Perspectives on dementia management and the role of the S-LP, respondents rated their level of agreement with 13 opinion statements on a 5-point Likert-type scale. Next to each statement, respondents placed a mark in one of five boxes labeled *strongly disagree, disagree, neutral, agree* and *strongly agree* (see Table 5). The section concluded with seven statements regarding barriers to service delivery for individuals with dementia. Respondents ranked these from most to least significant in importance, using the numbers 1 (*most significant)* to 7 (*least significant)*. The final page of the survey included a space for "additional comments" that respondents wished to include.

Data Management and Analyses

Statistical consultants led the data management and analysis. First they coded and entered each survey item into an SPSS database and then verified accuracy of data entry through data editing and comparison with the paper surveys.

The researchers noted several instances of item non-response by survey participants. It is well-documented that survey participants do not respond to every item on a self-administered questionnaire (Huston, 1996). In addition to missing data that occurred randomly and were unrelated to any systematic difference between people who answered the question and people who did not (Weisberg, 2005), survey respondents who did not work with individuals with dementia were instructed to skip certain questions. Therefore, to account for all available data from the respondents, the results for each question include the number of people who responded to each item.

Results

Demographic Information for the Sample

Three-hundred and four completed (304/514; 59.1%) surveys were returned. The largest percentage of respondents (32.6%) worked in Ontario, followed by Alberta (19.7%) and British Columbia (17.4%), with the remainder distributed across the provinces and the Yukon (see Table 1). Response rate by province, based on surveys sent and returned, ranged from a high of 100% (Prince Edward Island and the Yukon) to a low of 43.7% (Nova Scotia).

Two hundred and ninety respondents completed all of the demographic information (290/304 = 95.3%

Table 1

Survey distribution and response rates by province

Province/Territory	Number of surveys sent (/514)	Number (%) of surveys returned by province	Percentage of total surveys returned (/304)
Ontario	183	99 (54.1)	32.6
Alberta	91	60 (65.9)	19.7
British Columbia	90	53 (58.9)	17.4
Quebec	35	20 (57.1)	6.6
Saskatchewan	19	15 (78.9)	4.9
Manitoba	26	14 (53.8)	4.6
New Brunswick	29	14 (48.3)	4.6
Nova Scotia	32	14 (43.8)	4.6
Newfoundland	19	9 (47.3)	3.0
Prince Edward Island	4	4 (100)	1.3
Yukon Territory	1	1 (100)	0.3

completion rate). The vast majority were female (93%) and 76.5% were between the ages of 30-49 years (see Table 2). They reported an average of 14.3 years of experience as an S-LP (SD = 7.45, range 1-36 years) and most (71.4%) worked in urban centres. Approximately 30% of the sample worked in sub-acute care/rehabilitation settings, 16.6% worked in acute care and 15.5% worked in community care/public health settings. Only 3% worked in long-term care settings. More demographic information on the sample, by province, is provided in Table 2.

The demographic numbers for this study sample are similar to those reported in the CASLPA member survey (2005) in which 97.4% of respondents were female, 68% were between the ages of 26-45, and 77.7% reported working in urban centres. Work settings were difficult to compare between surveys because only S-LPs who worked with older adults and/or individuals with dysphagia, dementia, cognitive impairment, and aphasia were selected to receive surveys in the current study and these individuals tend to work in medical settings.

In section B of the survey, respondents indicated their caseload and work habits. Two hundred and eighty two respondents (92.7%) completed this section. Respondents reported providing services to an average of 5.98 clients per day (SD = 3.39, range = 0-28; see Table 3). The average number of clients seen daily was highest in Saskatchewan (7.96) and lowest in Newfoundland (4.89). Seventeen respondents provided services to 12 or more clients per day. These 17 respondents worked in different provinces in both rural and urban settings and had varying years of

Table 2

Demographic Characteristics of the Sample

Province/ Territory	n	Age ranges reported (%)	Community: Urban and/or rural (%)	Mean years of experience (SD)	Three employment sites most frequently reported (%)
Total Sample	290	20-29 (6.2) 30-39 (41.7) 40-49 (34.8) 50-59 (16.6) 60+ (0.7)	Rural (11.7) Urban (71.4) Both (16.9)	14.33 (7.45)	Subacute/Rehab (30.3) Acute (16.6) Public Health (15.5)
Ontario	91	20-29 (9.9) 30-39 (38.5) 40-49 (39.6) 50-59 (12.1) 60+ (0.0)	Rural (9.9) Urban (64.8) Both (25.3)	13.90 (7.43)	Subacute/Rehab (26.4) Acute (17.6) Private Practice (16.5)
Alberta	58	20-29 (3.4) 30-39 (51.7) 40-49 (34.5) 50-59 (10.3) 60+ (0.0)	Rural (5.2) Urban (77.6) Both (17.2)	14.06 (7.62)	Subacute/Rehab (34.5) Public Health (22.4) Public Education (15.5)
British Columbia	52	20-29 (3.8) 30-39 (32.7) 40-49 (36.5) 50-59 (26.9) 60+ (0.0)	Rural (1.9) Urban (88.5) Both (9.6)	15.64 (7.18)	Acute Care (23.1) Subacute/Rehab (21.2) Public Health (21.2)
Quebec	18	20-29 (5.6) 30-39 (33.3) 40-49 (27.8) 50-59 (22.2) 60+ (11.1)	Rural (0.0) Urban (88.9) Both (11.1)	17.06 (10.25)	Subacute/Rehab (55.6) Acute (11.1)
Saskatchewan	15	20-29 (6.7) 30-39 (33.3) 40-49 (20.0) 50-59 (40.0) 60+ (0.0)	Rural (26.7) Urban (53.3) Both (20.0)	15.07 (8.28)	Subacute/Rehab (26.7) Public Education (26.7) Public Health (13.3) Acute Care (13.3)
Manitoba	14	20-29 (7.1) 30-39 (42.9) 40-49 (50.0) 50-59 (0.0) 60+ (0.0)	Rural (28.6) Urban (71.4) Both (0.0)	13.14 (6.30)	Subacute/Rehab (42.9) Public Education (21.4) Long-term care (14.3)
New Brunswick	14	20-29 (0.0) 30-39 (42.9) 40-49 (42.9) 50-59 (14.3) 60+ (0.0)	Rural (28.6) Urban (57.1) Both (14.3)	15.07 (4.59)	Subacute/Rehab (28.6) Acute (28.6) Public Education (21.4) Public Health (14.3)
Nova Scotia	14	20-29 (0.0) 30-39 (50.0) 40-49 (28.6) 50-59 (21.4) 60+ (0.0)	Rural (28.6) Urban (57.1) Both (14.3)	13.93 (6.74)	Subacute/Rehab (21.4) Public Education (21.4) Public Health (21.4)
Newfoundland	9	20-29 (22.2) 30-39 (66.7) 40-49 (11.1) 50-59 (0.0) 60+ (0.0)	Rural (33.3) Urban (66.7) Both (0.0)	7.56 (3.13)	Subacute/Rehab (44.4) Public Health (22.2) Acute Care (22.2)

Table 2 (continued)
Demographic Characteristics of the Sample

Province/ Territory	n	Age ranges reported (%)	Community: Urban and/or rural	Mean years of experience (SD)	Three employment sites most frequently reported (%)
PEI	4	20-29 (0.0) 30-39 (75.0) 40-49 (0.0) 50-59 (25.0) 60+ (0.0)	Rural (50.0) Urban (25.0) Both (25.0)	13.13 (8.49)	Public Health (50.0) Home Care (25.0) Subacute/Rehab (25.0)
Yukon Territory	1	*	Both	*	Subacute/Rehab

Note: Public Health - Community Care/Public Health; Home Care = Social Services/Home Care

PEI = Prince Edward Island

*=Demographic data omitted to protect anonymity

Table 3

Number of Clients Seen Daily by S-LPs for Each Province

Province/Territory	n	Numbers of clients seen daily Mean (SD)	Number of clients seen daily (Range)
Total Sample	282	5.98 (3.39)	0 - 28
Ontario	91	5.52 (3.64)	0 - 28
Alberta	57	6.39 (3.61)	0 - 20
British Columbia	47	6.41 (3.73)	0 - 18
Quebec	19	5.53 (1.62)	4 - 10
Saskatchewan	14	7.96 (4.35)	3 - 18
Manitoba	14	5.36 (2.86)	0 - 13
New Brunswick	13	5.58 (2.99)	0 - 13
Nova Scotia	13	5.96 (1.48)	5 - 10
Newfoundland	9	4.89 (1.24)	4 - 8
PEI	4	6.25 (1.50)	5 - 8
Yukon Territory	1	7.00[a]	

PEI = Prince Edward Island

[a] = Actual value

of clients seen over 30, 60 and 90 day periods, or the number of those clients with a diagnosis of dementia and/or dysphagia. Many of the respondents estimated the number of total client visits they had completed, rather than the number of unique clients seen within the specified time period. One respondent (Participant 155) noted, "I tallied client contacts per work day. Please note these may be the same clients but on different days" and another (Participant 157) wrote, "… information was provided via patient visits – therefore, repeat clients." These respondents and others noted that this section was too time consuming to complete. For example, one (Participant 184) stated, "This section took our receptionist/ workload measurement person two hours to do…" and another (Participant 70) commented, "It would be very time consuming to look back on my caseload in this way."

Only 10% of the respondents indicated that they were required to provide a minimum amount of their professional time to older adults. The authors contacted CASLPA and all of the provincial speech-language pathology associations to verify if a mandate exists for the provision of S-LP services to older adults. Representatives from CASLPA, six provinces (NB, MB, ON,

experience; however, the majority (*n*=12) identified their primary site of employment as the "public education sector." The survey did not include an option for S-LPs to indicate if services were provided via individual or group treatment sessions.

Researchers were unable to calculate the total numbers

SK, AB), and one territory (NWT) responded, indicating that provincial mandates do not exist; mandates, if any, are decided at the site of employment.

Practice Patterns: Assessment and Intervention Services for Individuals with Dementia

The respondents were instructed to complete the section about assessment tools and intervention approaches only if they worked with clients with dementia. One hundred and fifteen respondents (115/304 or 38%) completed the section on assessment. Seventy-six of the respondents (66.1%) reported using the Arizona Battery for Communication Disorders of Dementia (ABCD: Bayles & Tomoeda, 1993) whereas only 22 respondents (19.1%) reportedly used the Functional Linguistic Communication Inventory (FLCI: Bayles & Tomoeda, 1994) (see Figure 1). Approximately 77% of respondents used the Boston Diagnostic Aphasia Examination (Goodglass & Kaplan, 1972) and 65.2% used

Figure 1. Percentage of respondents who reported using selected assessment tools (*n*=115)

Note: ABCD = Arizona Battery for Communication Disorders of Dementia; FLCI = Functional Linguistic Communication Inventory; BDAE = Boston Diagnostic Aphasia Examination; WAB = Western Aphasia Battery; OAB = Other aphasia batteries (unspecified); SAMT = Specific Aphasia Modality Tests (unspecified)

the Western Aphasia Battery (Kertesz, 1982). Respondents also indicated using other aphasia batteries and specific aphasia modality tests (both unspecified in the survey).

For the question related to interventions, fewer respondents provided a rating of type and frequency of interventions used with their clients with dementia (*n*=101; see Table 4). More than 80% of respondents reported that they often or always used caregiver training with patients

who have dementia (Table 4, item "e") followed in frequency by swallowing interventions (75.2%; item "d"). Direct one to one behavioural treatment and cognitive therapy were less likely to be utilized (see items "a" and "b") and 80.2% of respondents indicated that group treatment (item "c") was rarely or never used. Respondents reported the most variability in the frequency of use of program development (item "f"), ranging from 38.6% of the sample never or rarely using this approach, 29.7% indicating sometimes using it, and 31.7% stating that they often or always used it.

Perspectives on Individuals with Dementia and the Role of the S-LP

Table 5 contains a summary of responses to questionnaire statements on S-LP perspectives on rehabilitation of individuals with dementia and the role of S-LPs in their care. Respondents indicated whether they agreed or disagreed with 13 statements by choosing from five descriptors (i.e., *strongly disagree, disagree, neutral, agree* and *strongly agree*). In this section of the survey, 255 respondents completed some or all of the questions. After a listwise deletion for this section (in which only those individuals who responded to all items were included in the analysis), the sample size was 206/304 (67%). For purposes of reporting, 'agree' refers to the combined categories of *strongly agree* and *agree* and '*disagree*' refers to the combined categories of *strongly disagree* and *disagree.*

The vast majority (91.8%) of respondents agreed that treating individuals with dementia is within the scope of practice of S-LPs (Table 5, item "e"). One S-LP (Participant 111) commented: "[I] strongly feel there is a role for the speech-language pathologist with this population, even if it is only working with family/caregivers to help them understand the communication/language/speech difficulties and increase awareness of strategies to facilitate communication." However, another (Participant 95) questioned S-LP involvement in cognitive-based interventions for individuals with dementia, asking, "Does the survey assume that S-LPs are in the best position to provide intervention? (vs. other disciplines). Scope of practice question: In Manitoba generally OTs [occupational therapists] are more involved in "cognitive therapy." Participant 122 stated the following about the role of S-LPs with individuals with dementia: "It has been my experience that S-LPs do not see themselves as a provider of service to individuals with Alzheimer's/ other dementing illnesses. This is a tremendous loss to individuals with Alzheimer's/dementing illnesses because they desperately need a way to communicate – a way to connect."

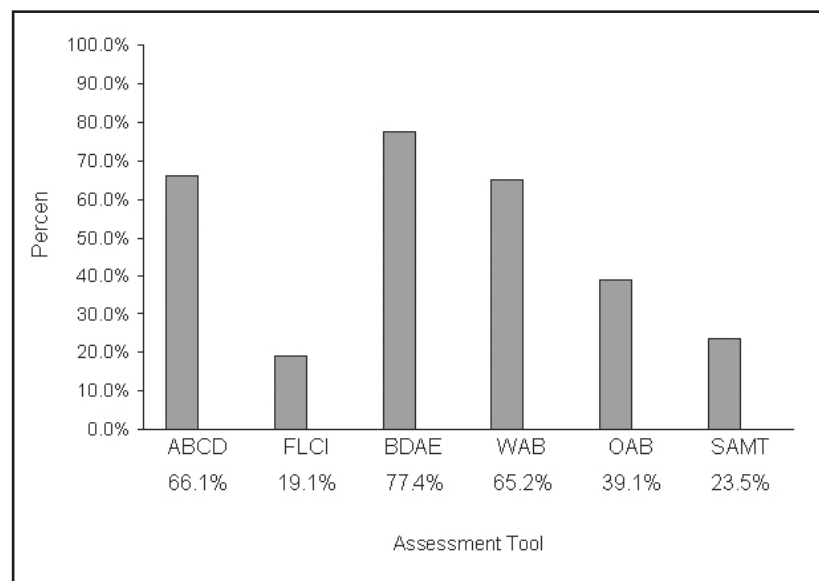Approximately 55% of the sample disagreed with the

Table 4

Type and Frequency of Interventions Provided to Patients with Dementia (n=101)

	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)
(a) Direct 1:1 Behavioral Treatment (e.g., speech, language or communication treatment; including training in memory strategies).	13.9	27.7	35.6	15.8	6.9
(b) "Cognitive therapy" (e.g., memory strategies)	13.9	25.7	39.6	15.8	5.0
(c) Group Treatment (e.g., several clients reading aloud in a group; reminiscence or other games).	65.3	14.9	14.9	5.0	0.0
(d) Swallowing Interventions (e.g., thermal stimulation, mealtime or dining room management, compensatory strategies – chin tuck, head turn, and dietary texture)	6.9	2.0	15.8	48.5	26.7
(e) Caregiver Training	1.0	3.0	14.9	44.6	36.6
(f) Program Development	26.7	11.9	29.7	22.8	8.9

122) wrote, "I feel very strongly that S-LP services benefit individuals with Alzheimer's and other dementing illnesses. I have seen the improvement in clients and the positive comments from family and staff."

With respect to learning by individuals with dementia, the majority of respondents disagreed with the statement that individuals with dementia could not learn functional information because of memory impairments (78.6%; item "h"). Fewer, however, agreed that individuals with dementia could learn new information (51.9%; item "g") and in fact, a large portion of the sample indicated a neutral position regarding new learning (30.6%).

Most respondents indicated support for caregiver communication training programs. Approximately 96% of respondents agreed that personal and professional caregivers can learn to use effective communication strategies with individuals who have dementia (Table 5, items "k" and "l"). One person (Participant 109) stated the following: "One-to-one therapy does not benefit most of this population but compensatory strategies working with family members/caregivers and environmental adaptation are more productive and have a longer-term impact." However, some respondents noted that caregiver training alone is insufficient for long-term effects on the functioning of individuals with dementia. One respondent (Participant 33) stated, "Lack of follow through by busy special care aides and family make implementation of therapy haphazard and largely unsuccessful." Another (Participant 168) noted, "…Treatment needs to be carried through by nursing staff, caregivers or other therapists, etc. One of the biggest frustrations to providing services to [individuals with dementia] is lack of follow through."

S-LPs perceived barriers to providing services to individuals with dementia. Approximately 60% of respondents agreed with the statement that some individuals with dementia may benefit from speech-language pathology services but caseload demands prevent them from providing this service (Table 5, item "c") and 76.3% agreed that individuals with dementia were not referred for speech-language pathology services (item "d").

In the final part of Section C of the survey, respondents were instructed to rank seven potential barriers to service delivery from most to least significant. Two hundred and

statement that the progressive nature of dementia prevents individuals from improving in direct one-to-one speech, language, communication and cognitive interventions (see items "a" and "b"). However, a large percentage indicated a neutral stance on these items (23.8% and 26.2%, respectively) and approximately 20% of the sample agreed that dementia prevents individuals from improving in direct intervention programs. Respondent comments reflected this variability. Participant 171 stated, "I'm not sure regarding improvement, but believe intervention may facilitate maintenance of some functions." Participant 187 commented, "I feel that individual one-on-one therapy may not be cost effective or therapeutically beneficial unless family members are active participants…even then, benefits may be limited…" and Participant 130 stated, "I believe individuals with dementia may benefit from…indirect rather than direct treatment which only frustrates and confronts the person with dementia."

The large majority of respondents (88.8%) agreed that individuals with dementia retain strengths that can be capitalized on in therapy (see item "f"). In addition, 94.7% agreed that consistent routines (item "i") may facilitate higher levels of functioning in people with dementia, 78.2% agreed that individuals with dementia benefit from consistent cognitive stimulation (see item "m") and 95.6% agreed that structured activities may be beneficial (item "j"). (The nature of these activities was unspecified in the opinion statement provided.) One person (Participant

Table 5

Perspectives on Individuals with Dementia and the Role of the S-LP (n=206)

Opinion Statement	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
a) The progressive nature of dementia prevents individuals from improving in direct 1:1 speech, language, and/or communication interventions.	10 (4.9)	105 (51.0)	49 (23.8)	35 (17.0)	7 (3.4)
b) The progressive nature of dementia prevents individuals from improving in direct 1:1 cognitive therapy.	8 (3.9)	104 (50.5)	54 (26.2)	34 (16.5)	6 (2.9)
c) Some individuals with dementia may benefit from speech language pathology services but caseload demands prevent me from providing this service.	6 (2.9)	36 (17.5)	39 (18.9)	73 (35.4)	52 (25.2)
d) Some individuals with Alzheimer's disease/ other dementing illnesses may benefit from speech language pathology services but these individuals are not referred to me.	4 (1.9)	16 (7.8)	29 (14.1)	112 (54.5)	45 (21.8)
e) Treating patients with dementia is within the scope of practice of S-LPs.	4 (1.9)	1 (0.5)	12 (5.8)	99 (48.1)	90 (43.7)
f) Individuals with Alzheimer's disease/other dementing illnesses retain strengths that can be capitalized on in therapy.	0 (0.0)	2 (1.0)	21 (10.2)	124 (60.2)	59 (28.6)
g) Memory impairments prevent individuals with Alzheimer's disease/other dementing illnesses from learning any new information.	12 (5.8)	95 (46.1)	63 (30.6)	34 (16.5)	2 (1.0)
h) Memory impairments prevent individuals with Alzheimer's disease/other dementing illnesses from learning any functional information.	27 (13.1)	135 (65.5)	36 (17.5)	8 (3.9)	0 (0.0)
i) Consistent routines may promote a higher level of function in individuals with Alzheimer's disease/other dementing illnesses.	1 (0.5)	1 (0.5)	9 (4.4)	98 (47.6)	97 (47.1)
j) Structured daily activities may promote a higher level of function in individuals with Alzheimer's disease/other dementing illnesses.	1 (0.5)	2 (1.0)	6 (2.9)	101 (49.0)	96 (46.6)
k) Professional caregivers can be trained to facilitate more effective communication in individuals with Alzheimer's disease/other dementing illnesses.	2 (1.0)	1 (0.5)	5 (2.4)	72 (35.0)	126 (61.2)
l) Personal caregivers can be trained to facilitate more effective communication in individuals with Alzheimer's disease/other dementing illnesses.	2 (1.0)	1 (0.5)	5 (2.4)	72 (35.0)	126 (61.2)
m) Individuals with dementia benefit from consistent cognitive stimulation.	1 (0.5)	5 (2.4)	39 (18.9)	98 (47.6)	63 (30.6)

Table 6

Most Commonly Ranked Barriers to Service Delivery for Individuals with Dementia (n=209)

	Number of individuals ranking the barrier (%)						
	1	2	3	4	5	6	7
Other patients with more acute concerns have priority	77 (36.8)	47 (22.5)	25 (12.0)	17 (8.1)	10 (4.8)	20 (9.6)	13 (6.2)
Lack of funding	42 (20.1)	53 (25.4)	28 (13.4)	18 (8.6)	11 (5.3)	29 (13.9)	28 (13.4)
Lack of referrals	22 (10.5)	30 (14.4)	52 (24.9)	25 (12.0)	28 (13.4)	25 (12.0)	27 (12.9)
Poor prognosis	18 (8.6)	19 (9.1)	42 (20.1)	53 (25.4)	36 (17.2)	23 (11.0)	18 (8.6)
Limited potential	9 (4.3)	18 (8.6)	17 (8.1)	39 (18.7)	81 (38.8)	21 (10.0)	24 (11.5)
Lack of evidence to support interventions with this population	25 (12.0)	24 (11.5)	29 (13.9)	22 (10.5)	28 (13.4)	52 (24.9)	29 (13.9)
Lack of knowledge about how to conduct therapy with this population	19 (9.1)	17 (8.1)	20 (9.6)	34 (16.3)	16 (7.7)	32 (15.3)	71 (34.0)

Note: 1 = most significant barrier to service provision; 7 = least significant barrier to service provision

nine respondents completed this section of the survey (209/304, 68.7%). Rank order of items from *most* (1) to *least* (7) significant was calculated based on the number of respondents indicating a particular rank for that barrier (see Table 6). Means are not calculated for ranked data; rather, frequency of response is the appropriate way in which to characterize these data.

The barrier ranked as most significant (1) by the majority of respondents was that "other patients with more acute concerns have priority." The second and third ranked barriers based on frequency of report were "lack of funding" and "lack of referrals" respectively. Participant comments regarding barriers include the following:

• Participant 101: "Although the mandate of my institution is to deal with acute disorders – aphasia especially – I cannot imagine a population that needs more immediate intervention than a patient or family diagnosed with dementia. Unfortunately, because this disorder is not perceived as "acute," dementia is never the primary diagnosis of the patients that I see."

• Participant 90: "If time and funding were available [and] referral sources could be in-serviced, I am sure they [other health professionals] would send referrals then."

• Participant 11: "Overall lack of knowledge of S-LP scope of practice limits the number of referrals by other

disciplines. Those professionals who do realize that we can help are reluctant to refer due to the few S-LPs who are interested in this population. The same situation occurs for …other degenerative neurological disorders. The exception is if it is a child who is the client! Adults are consistently underserved."

• Participant 103: "The 'medical professionals' see my role as mainly attending to dysphagia – i.e., the referrals for persons with dementia are most often for dysphagia and then if I have time, I will work with language/motor speech/cognition."

• Participant 54: "…the demand for [dysphagia] services has had a huge impact on the ability to provide communication services even for aphasia."

• Participant 104: "Swallowing in dementia is considered a priority, communication is not."

• Participant 63: "Our current situation is such that, for adults, only 'priority' clients are seen (i.e., those with swallowing difficulties)."

• Participant 158, "Sadly, communication intervention is not a priority…"

The top ranked barriers to providing services were cross-referenced by primary site of employment. (The number of respondents in several provinces was too low

for meaningful analysis of barriers by province.) The barrier of "other patients with more acute concerns have priority" was ranked as the most or second most significant barrier by the majority of participants in all work settings except the public education sector who ranked "lack of knowledge about how to conduct therapy with this population" as the most significant barrier.

Although "lack of knowledge about how to conduct therapy with this population" was ranked as the least significant barriers to service provision by the majority of the sample, several respondents made comments that suggest training and education would be beneficial to S-LPs. Some comments were explicit. For example, one respondent (Participant 90) stated, "I would need more training to provide in-service and therapy for this population…," and another (Participant 95) commented that "I don't feel that my training puts me in the best position to provide the best services for this population." Other participants made comments that reflected an underlying lack of knowledge about service delivery for individuals with dementia. One (Participant 264) stated: "Not aware of any treatments that will help maintain/improve communication…" Another (Participant 247) wrote, "Current standardized tests have significant limitations for this population. Our profession needs a thorough cognitive-linguistic assessment tool that has statistical data for the main dementia type." Finally, one individual commented that S-LP services are already being provided to persons with dementia through other agencies in many communities. Participant 269 stated, "I feel that most individuals with Alzheimer's are well-served in our community through the Alzheimer's Society, its social workers and adult day programs which are now widely available and are very specialized in the type of programming/structure and caregiver support/education that they provide. We are more concerned about adults with aphasia, dysarthria and cognitive-communication (non-Alzheimer) illnesses…where such specialized and targeted interventions may not always be available across the continuum of care."

Discussion

The survey results provide useful information on the practice patterns and perspectives of S-LPs with regard to dementia. The implications of these results and directions for future research are discussed in the sections that follow.

Respondents who worked with patients with dementia were asked to report on assessment and treatment techniques. For assessment, 66% of respondents reported using the ABCD, a test designed for individuals with mild to moderate dementia. Yet only 19% reported using the FLCI, a test designed for individuals with moderate to severe dementia. Perhaps these respondents work primarily with individuals in the early stages of dementia and thus the FLCI is not an appropriate choice. Alternatively, the respondents may not know about the availability of evaluation tools for cognitive-communication disorders across the spectrum of dementia severity.

Many respondents reported using aphasia batteries to evaluate individuals with dementia. Although aphasia batteries are designed to assess language in multiple modalities, these tests are not designed for comprehensive evaluation of cognition and the effects of cognitive deficits on communication. The communication deficits of individuals with dementia are a direct result of deterioration of higher cognitive processes, primarily memory, as well as attention and executive functions (Bayles & Tomoeda, 1997). Tests which do not include a focus on cognition and do not have individuals with dementia as part of the standardization sample are not suitable for patients with dementia. Appropriate evaluation tools are necessary to facilitate description of communication deficits and to identify spared and impaired abilities around which to develop comprehensive plans of care (Tomoeda, 2001).

CASLPA (2004) recognizes the relation between cognition and language in its document on Assessing and Certifying Clinical Competency: Foundations of Clinical Practice for Audiology and Speech-Language Pathology. According to the document, when demonstrating competence in adult language disorders, the S-LP "Uses appropriate standardized and/or non-standardized procedures for assessing language…gestural communication and complex cognitive functioning relating to language (e.g., aspects of memory, organizational processes, and verbal reasoning)" (p. 31). S-LPs must recognize the contribution of cognition to communication in patients with neurological disease and injury and are well-suited professionally to evaluate both aspects of functioning in their patients. Further, S-LPs are in a unique position to determine the effects of cognitive deficits on communicative function and to design, implement and evaluate programs to address these deficits.

For respondents who worked with clients with dementia, the most frequently reported intervention used was caregiver training. Interventions for individuals with dementia are always designed to improve functioning; however, the focus on the patient may be indirect through caregivers and other aspects of the environment such as development of routines and activities (Clark, 1995; Hopper, 2001). All patients with dementia have the potential to benefit from indirect interventions because they do not have to meet cognitive prerequisites for participation. Therefore, even patients with severe cognitive decline may benefit from skilled caregivers who have been trained in optimal communication techniques. Indeed, an increasing amount of research evidence exists to support caregiver training for individuals with dementia (see for example Bourgeois, Burgio, Schulz, Beach, & Palmer, 1997; Ripich, Ziol, Fritsch & Durand, 1999; Zientz et al., 2007). In the area of caregiver training, the perspectives of respondents were consistent with their practice patterns. An overwhelming majority of the sample agreed that personal and professional caregivers can be taught to use effective communication strategies with individuals who have dementia, that routines may facilitate higher levels of function, and that structured activities may be beneficial.

The majority of respondents agreed that treating individuals with dementia is within S-LPs' scope of practice, yet their opinions varied on direct interventions, or those interventions in which the S-LP provides treatment directly to the person with dementia. Approximately 20% of the respondents agreed that individuals with dementia could not improve in direct speech, language, communication or cognitive therapy. Of those who worked with individuals with dementia, approximately 40% indicated that they never or rarely provided direct one to one behavioural treatment or cognitive therapy to clients with dementia, and 80.2% of the respondents stated that they rarely or never engaged in group treatment sessions with clients with dementia. Clearly, the respondents were unsure about the clinical utility of direct interventions for individuals with dementia and this uncertainty was reflected in their practice patterns.

However, the majority of respondents agreed with the statements that individuals with dementia can learn functional information, despite memory impairments, that they retain strengths that can be capitalized on in therapy, and that consistent cognitive stimulation may be beneficial. These positive opinions suggest that the respondents understand the benefit of cognitively stimulating environments in which functional, meaningful information is the focus of any activity for individuals with dementia. Yet, S-LPs are not designing and implementing these programs. This mismatch between perspectives and practice patterns may be related to varying definitions of what constitutes direct interventions and the challenges of measuring progress of patients in such programs.

Direct, one-to-one treatment provided by S-LPs is often focused at the level of a patient's impairment. For example, confrontation naming tasks coupled with varying stimuli and cueing hierarchies are routinely used to facilitate word-retrieval skills for persons with anomia. The goal of such interventions is to strengthen or re-build lexicons (e.g., semantic, graphemic, phonological) to facilitate access and correct production of words. The expectation of treatment is an improvement in word retrieval as a result of treatment. If someone is improving in treatment then the person is 'getting better' either generally or task-specifically. When patients have progressive neurological diseases that cause irreversible dementia, however, 'getting better' is not a realistic outcome.

Measuring progress made by patients with dementia requires consideration of outcomes related to activities and participation in daily life. For example, the focus for an individual with AD in a behavioural treatment program is not the resolution or restoration of memory or other cognitive impairments. Rather, the focus is on assisting individuals to function at their highest levels whatever the stage of the disease (ASHA, 2005). This goal is realized by capitalizing on cognitive systems that support communication and behaviour, such as procedural and habit memory, which may be relatively preserved in the early to middle stages of Alzheimer-type dementia (Eslinger & Damasio, 1986; Heindel, Salmon, Shults, Walicke, & Butters, 1989). Focusing on such goals may involve helping the individual with the execution of a task or action deemed important for everyday functioning (e.g., remembering a family member's name; checking a calendar for the day's activity schedule; being able to find the bathroom; remembering to lock the door when leaving the house) or involvement in a life situation (e.g., engaging in reminiscence with a conversation partner; engaging in mealtime conversation; playing a game or doing an activity with others; talking on the phone). Using the International Classification of Functioning, Disability and Health (ICF; World Health Organization, 2001) as a model for assessment and treatment facilitates a holistic view of patients and recognition of their abilities within the context of their physical, social and attitudinal environments. Pairing indirect and direct interventions ensures that clinicians address factors that can hinder or promote optimal functioning of their clients.

As is the case with caregiver interventions, research evidence is accumulating to support direct interventions for individuals with dementia. Treatment strategies may include one-to-one and group treatment using evidence-based techniques such as spaced-retrieval training (see Hopper et al., 2005, for a systematic review of the evidence for SRT), memory wallets or communication books (Bourgeois et al., 1997; Hoerster, Hickey, & Bourgeois, 2001), errorless learning procedures (Clare, Wilson, Breen, & Hodges, 1999; Clare, et al., 2000), reminiscence therapy (see Kim et al., 2006 for a systematic review), and Montessori techniques (see Mahendra et al., 2006 for a systematic review of the literature in this area). Of course, not all patients with dementia are able to benefit from direct interventions. In general, patients with more severe cognitive decline will have increased difficulty with basic cognitive processes (e.g., selectively attending to a task) necessary for active engagement in therapeutic activities. More research is needed to delineate patient-specific characteristics that contribute to successful direct treatment outcomes.

Clinicians are encouraged to review pertinent research and apply it to support best practices in their fields. Based on responses to this survey, however, it is possible that S-LPs know about the evidence to support treatment but are unable to devote much of their clinical time to individuals with dementia. A majority of respondents agreed that caseload demands prevent them from providing S-LP services to individuals with dementia. Consistent with this opinion, the majority of respondents in all provinces and across all work settings (except the public education sector) cited "other patients with more acute concerns have priority" as one of the top three most significant barriers to service delivery for individuals with dementia. Respondents also cited lack of funding as a main barrier which may be related to limited staff being available to provide such services.

Patients with acute diagnoses, such as stroke-induced aphasia, are urgent candidates for S-LP services, as are clients with dysphagia, a disorder which has health and safety implications and is related to meeting basic

nutritional needs. Understandably, clinicians must triage patients according to urgency of rehabilitation needs and availability of resources. However, at the very least, S-LPs should evaluate individuals with cognitive-communication disorders of dementia and design individualized, functional treatment programs when necessary. Direct and indirect treatments often can be designed by the S-LP, implemented by caregivers, rehabilitation or nursing assistants, and subsequently monitored over time. This consultative approach to treatment may help ensure that individuals with dementia receive necessary services.

The situation of limited time and resources is complicated by a reported of lack of referrals of people with dementia for S-LP services. Respondents' opinions were consistent with this reported barrier. Whereas busy clinicians rarely need to seek referrals for patients, a dearth of referrals does not mean that services are unnecessary. Rather, other professionals may not recognize the role of the S-LP in dementia management, or view the communication problems of individuals with dementia as inevitable and therefore inappropriate as targets for intervention.

Despite such barriers and the problems they pose to service delivery, possible solutions exist. Clinicians can work at a local level to increase referrals for S-LP services in the area of dementia. S-LPs can educate other professionals and family members regarding the relation between cognition and communication, the effects of various types of interventions on the functioning of individuals with dementia and the need for integrated, multi-disciplinary services with S-LPs as part of the care team. Additionally, S-LPs can conduct evaluations and implement intervention programs to demonstrate their role and the outcomes associated with treatment. For example, by working with professional caregivers to identify problem communication behaviours (e.g., repetitive question-asking; verbally aggressive behaviours) and designing programs to reduce the frequency of such problems, the role of the S-LP becomes valued and integral to quality care.

On regional and national levels, clinicians and researchers interested in aging and dementia should work with their professional organizations to increase public awareness of the role of the S-LP with older adults who have dementia and S-LPs should present dementia-related research findings at the conferences directed to other health professionals. Family members may request rehabilitation services if they are aware of the nature of such services and the outcomes they may expect for their loved ones as a result of their participation. Professionals who understand the role of the S-LP in dementia management may then increase referrals to S-LPs for these services. Importantly, S-LPs should partner with advocacy organizations such as the Alzheimer Society of Canada and its many chapters. In many provinces, the Alzheimer Society's chapters offer educational opportunities, counseling and myriad other services for people with dementia and their caregivers. However, these programs should supplement, not supplant, skilled cognitive-communication interventions designed by S-LPs.

Conclusions and Future Directions

The results of this study reveal a complex situation for S-LPs working with older adults. Whereas respondents indicated several positive opinions on the role of S-LPs with individuals who have dementia and the potential of these individuals to benefit from interventions, clinicians reported barriers to providing cognitive-communication services. Several quotes from respondents also support a clinical conundrum regarding dementia: knowing about the potential benefits of communication interventions, but being unable to implement them in the case of limited staffing resources and a focus on conditions such as dysphagia.

In future studies of this type, more information is needed on the number of patients with dementia on clinician caseloads across the county. In addition, the use of provincial registries to identify S-LPs is necessary to avoid under-sampling in provinces where many S-LPs are not members of CASLPA (i.e., Quebec). The current study was limited by the lack of pilot testing of the survey instrument which would have allowed refinement of several items. Variable response rates across survey items may have been a result of unclear wording or the fact that the questionnaire was too time-consuming to complete in its entirety. More information also is needed on the role of the S-LP in long-term care settings, where approximately 50% of individuals with dementia reside (CSHA Working Group, 1994b). In this sample, only 3% of the S-LPs worked in long-term care facilities. A large number of individuals with dementia are residing in centres where, it seems, few S-LPs are employed. Orange, Ryan, Meredith and MacLean (1995) emphasized the importance of "identifying and supporting changes that enhance the long-term care environment" and promoting successful communication for residents with dementia (p. 32). However, it will be difficult to meet such goals if S-LPs are not working where many people with dementia are living.

The results of this study form the basis for defining issues of importance to S-LPs who work with older adults, including those with dementia. Description of the issues is an important first step; however, clinical, research and advocacy initiatives are necessary next steps to meet the communication needs of this growing segment of our population.

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ERRATUM

CJSLPA, Volume 31, No. 2
Perspectives on the Academic and Clinical Education in Stuttering

In the article "Perspectives on the Academic and Clinical Education in Stuttering" by Robert M. Kroll and Thomas R. Klassen, the following correction is made by this errata sheet. The publisher regrets the error and apologizes for any misunderstandings it may have caused.

The affiliation of co-author Thomas R. Klassen is York University and not University of Toronto as published.

■ **An action learning experience for speech-language pathology students: On the experience of having dysphagia for a day**

■ **Un apprentissage pratique pour les étudiants en orthophonie : faire l'expérience de la dysphagie pendant une journée**

Tim Bressmann
Rosemary Martino
Elizabeth Rochon
Kim Bradley

Abstract

The purpose of this study was to give graduate students in speech-language pathology an opportunity to experience texture-modified foods and therapeutic swallowing strategies from the viewpoint of a patient.

Over the course of 4 years, 95 speech-language pathology students participated in a daylong learning experience. At breakfast time, the students fed each other porridge and thickened coffee. At lunchtime, the students ate a meal of pureed food and thickened liquids using the Supraglottic Swallow and the Mendelsohn Manoeuvre. Following each meal, the students gave feedback about their experiences using a self-administered survey containing both open and closed response options.

The student feedback was highly consistent across the 4 years. Students reported dislike of the modified food textures and had difficulties employing the swallowing techniques. In all 4 years, the students had feelings of discomfort and loss of control. Nevertheless, the overall assessment of the daylong experience was very positive. Students endorsed the experience and recommended that the workshop be repeated for future students. The students considered the experiential learning experience useful to supplement the academic teaching of dysphagia therapy. The students reported that the experience had meaningfully added to their learning and that it would help them become more caring and empathetic clinicians.

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La présente étude visait à offrir aux étudiants en orthophonie l'occasion de faire l'expérience d'aliments à texture modifiée et de stratégies de thérapies de déglutition du point de vue du patient.

Au cours de quatre années, 95 % des étudiants en orthophonie ont participé à une expérience d'une journée. Au déjeuner, ils se sont fait mutuellement manger du porridge et boire du café épaissi. Au dîner, ils ont utilisé la déglutition supraglottique et la manœuvre de Mendelsohn pour manger de la purée et des liquides épaissis. Après chaque repas, les étudiants ont donné leurs impressions en remplissant un sondage volontaire contenant des choix de réponses ouvertes et fermées.

La réaction des étudiants a été très uniforme au cours des quatre années. Ils ont signalé leur aversion de la texture modifiée des aliments et ont rapporté avoir de la difficulté à employer les techniques de déglutition. Les étudiants ont éprouvé un sentiment d'inconfort et de perte de maîtrise. Néanmoins, ils ont dans l'ensemble évalué de manière très positive leur journée. Les étudiants ont appuyé l'expérience et ont recommandé que l'atelier soit répété pour les futurs étudiants. Les étudiants ont jugé que leur apprentissage par l'expérience était utile pour enrichir

leur formation théorique sur la thérapie de la dysphagie. Les étudiants ont signalé que l'expérience avait été valable et qu'elle les aiderait à devenir des cliniciens plus compatissants et compréhensifs.

Keywords: dysphagia, swallowing disorders, speech-language pathology, action learning, experiential learning

INTRODUCTION

It is common practice to adjust food textures and to use special swallowing techniques to prevent or reduce swallowing impairments in patients with dysphagia (Langmore, 1999; Logemann, 1999). In patients in whom the swallowing disorder becomes a longer-term problem, eating may lose its pleasure. It has been shown that swallowing disorders are a major component contributing to loss of quality of life in patients with various etiologies, including stroke, head and neck cancer and progressive degenerative diseases (Schliephake, Neukam, Schmelzeisen, Varoga, & Schneller, 1995; Schliephake, Ruffert, & Schneller, 1996; Tibbling & Gustafsson, 1991; Ward, Bishop, Frisby, & Stevens, 2002). Recent research has started to evaluate not only the physiological safety but also the acceptability and pleasurability of texture-adjusted dysphagia diets (Ballou Stahlman, Mertz Garcia, Hakel, & Chambers, 2000; Cassens, Johnson, & Keelan, 1996; Kemp, 2001; Stahlman, Garcia, Chambers, Smit, Hoag, & Chambers, 2001). Personal food preferences have been referred to as important components of an individual's 'lived history', and any patient who has to follow a new dietary regimen has to adjust and relearn his or her preferences (Ferzacca, 2004).

The swallowing experience from the patient's perspective is not well studied in the literature. There is recent evidence that a great disparity exists between clinicians' and patients' perceptions of swallowing complications (Martino, 2004; Martino et al., 2006). While the focus of clinicians tends to be on swallowing safety and biomedical outcomes, patients with dysphagia perceive psychosocial issues, such as isolation, embarrassment and depression, as the most relevant. One reason for this disparity is that clinicians have historically been trained to focus on the disease and less on the patient as a complex being with individualized needs. The current paradigm shift in the health professions to a more patient-centred model of care demands that clinicians think beyond only the curative intentions of their actions and also consider patient expectations and perceptions when making their treatment decisions.

In Canadian universities, speech-language pathology is taught in intensive graduate programs, which vary between 2-3 years in duration. The focus of the academic programs is on theoretical knowledge and there may be little opportunity for students to learn about the patient perspective. To be effective and competent speech-language pathologists, students need to develop an appreciation for the possible psychosocial implications of their therapeutic interventions. A standard teaching approach would not have enabled our students to gain a life-like experience. We therefore augmented our conventional classroom learning with the alternative pedagogical model of Experiential Learning, also often called 'Action Learning' (Kolb, 1976). The concept of Experiential Learning is modelled on the way in which learning will occur spontaneously throughout the lifespan. Kolb (1976, 1984) postulates that a learning process begins with an experience ('concrete experience'), which is digested through reflection ('reflective observation'). The experience and reflection are then synthesized into a new individual theory ('abstract conceptualization'). This theory can be generalized to other life situations and corresponding hypotheses can be generated and tested ('active experimentation').

We devised a one-day experience that gave our students the chance to experience a texture-modified diet and to employ feeding and swallowing techniques. Throughout the day, two key elements of the experience were surprise and reflection. This paper reports on the practical organization of the day and discusses both quantitative and qualitative feedback from the students.

METHODS

Participants

During the 4-year period from 2001 to 2004, 95 students were enrolled in the professional Master of Health Sciences program in the Department of Speech-Language Pathology at the University of Toronto. Eighty-nine students were female and six students were male. This gender distribution is normal for a professional speech-language pathology program in North America. The learning experience took place halfway through the fall term of the second year of the professional program. During this term, the students took concurrent courses on Aphasiology (60 hours), Motor Speech Disorders (60 hours), Craniofacial Syndromes and Cancer (45 hours), Swallowing Disorders (30 hours) and Neurodegenerative Communication Disorders and Traumatic Brain Injury (30 hours).

Structure of the experience and data collection

The Ethics Review Board at the University of Toronto reviewed the events and procedures that were planned and implemented during the experience day. The students were not given any information about the contents of the experience day other than the date and time and the information that all meals and drinks would be provided. The students, who were all in their second year in the program, were asked not to share any information about the learning experience with the current first-year students in order to preserve an element of surprise.

The dysphagia experience was designed to occur during two meals, breakfast and lunch. For breakfast, the students were served oatmeal, thickened coffee (honey consistency) and thickened fruit juice (honey and nectar consistency). The students were paired up in teams of two and took turns feeding each other for 10 minutes. After breakfast, all students independently completed a self-administered questionnaire about their experience. The students rated different aspects of their experience relating to their role as the feeder and as the person being fed. For the rest of the morning, the students participated in another experiential activity related to different methods of augmentative and alternative communication but no details of this activity will be reported here.

At lunch, the students were served a pureed meal, accompanied by thickened fruit juices. Over the 4 academic years, the structure and components of the experience day were held constant. The only difference between the years was the pureed food served at lunchtime. In the first year, the students were served pureed pizza. The crust and the toppings of the pizza were blenderized separately and served as a two-tiered puree. In the second year, all students were given a can of high-energy liquid formula food to which they added thickener powder to achieve a honey-thick texture. In the third and fourth year, the students were served pureed potatoes, vegetables and meats that were provided by a professional hospital food provider.

Before they started their meal, the students were instructed how to use the Supraglottic Swallow and asked to eat and drink with this manoeuvre. About halfway through the meal, the students were instructed on the use of the Mendelsohn manoeuvre and instructed to finish the meal using this swallowing technique. Immediately after completing the meal, the students independently completed a self-administered questionnaire about the lunchtime meal experience.

Following the completion of the lunchtime meal and the questionnaire, the students shared their breakfast and lunchtime experiences in a semi-structured group discussion facilitated by the instructors. Following the discussion, all students independently completed a final questionnaire that summarized their opinion about the overall value of the daylong learning experience.

Student feedback and analysis

All students gave independent feedback using the same self-administered questionnaires for all 4 years. The questionnaires had quantitative as well as qualitative components. The quantitative components required students to rate their agreement or disagreement with a statement along a five-point Likert scale. Terminal descriptors ranged from *strong agreement* to *strong disagreement*. The qualitative components of the questionnaires were open-ended questions asking students to share their impressions of various aspects of the learning experience.

The quantitative feedback was summarized in a statistical spreadsheet software and the mean values and standard deviations for the responses were calculated and reported. In order to probe for statistically significant differences in the responses of the 4 years of students, we calculated non-parametric Kruskal-Wallis tests with Mann-Whitney U-tests as the post-hoc measure. The level of significance was set at $p = 0.05$. In order to avoid any type II error (deeming meaningful differences statistically insignificant), no Bonferroni adjustment of the p was made (Perneger, 1998). The qualitative feedback was summarized according to the most frequently recurring topics and common themes were identified.

RESULTS

Breakfast - Quantitative feedback

The breakfast evaluation questionnaire was subdivided into two parts. The first part of the questionnaire evaluated the experience of the feeder, and the second part evaluated the experience of the person being fed. All students switched roles during the task; therefore they all had experience with both roles. The questions and the bar graphs of the results can be found in figures 1 and 2.

For their role as feeders, the majority of students reported a good level of comfort (questions B1 and B2) and awareness of the importance of eye contact while feeding their colleagues (questions B3 and B4). Students in Years 1 and 2 were less concerned than Years 3 and 4 about the length of the feeding session (question B5). With the exception of year 4, approximately half of the students asked about the feeding preferences of the person they were feeding (question B6). The students were neutral on the question of whether they had been tempted to end the feeding session prematurely (question B7).

In their role as the person being fed, the students reported lower initial comfort levels but became more comfortable with the experience over time (questions B8 and B9). The students reported satisfactory eye contact with the feeder (question B10) that did not fluctuate much over time (question B11). Again, students were neutral on the length of the feeding session (question B12). The students felt that their personal feeding styles were reasonably met (question B13). However, many students were tempted to refuse feeding before the portion was fully eaten (question B14). In the overall evaluation of the breakfast task, a high number of students reported that the breakfast task helped them to develop more empathy for their patients (B15).
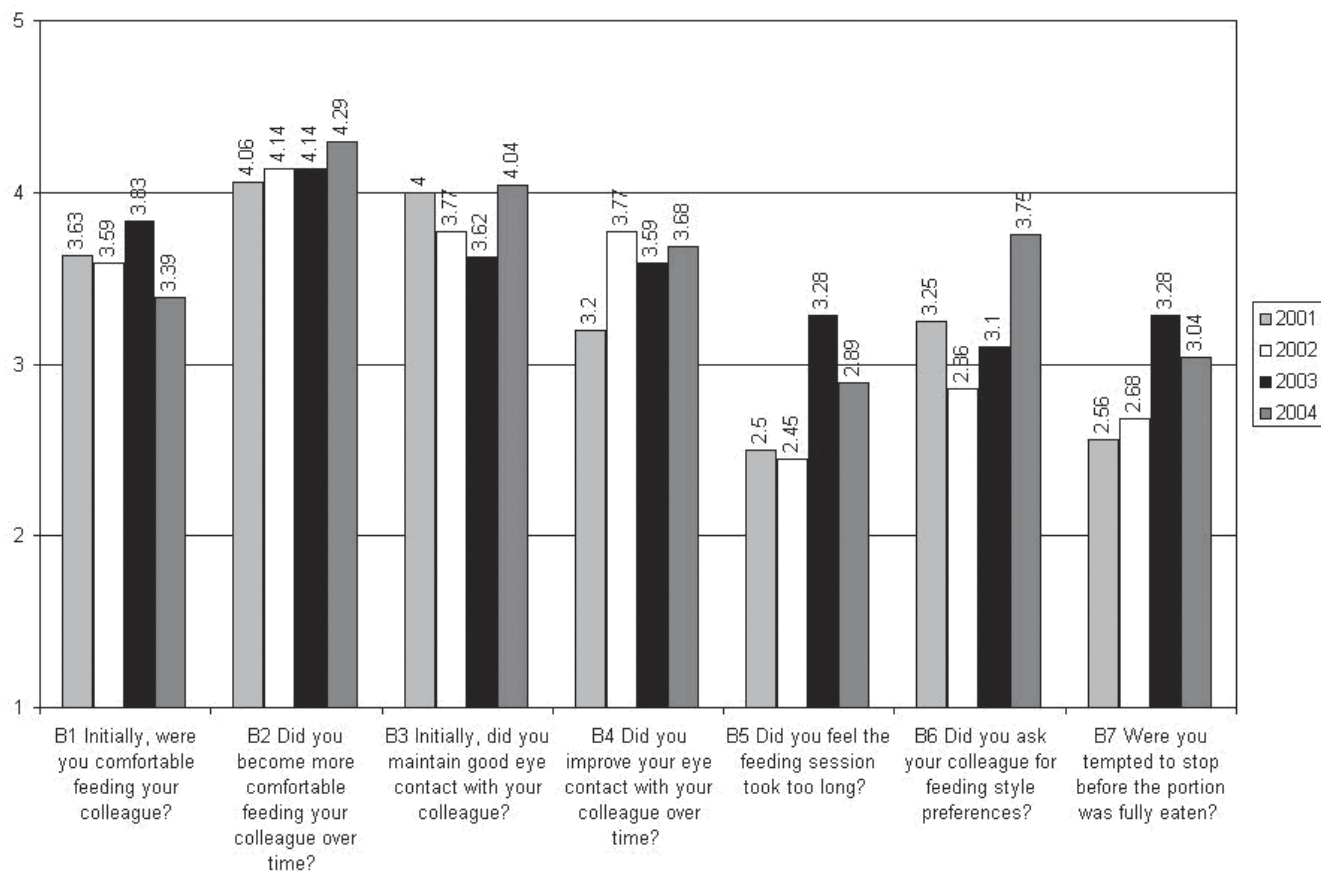
Figure 1. Results for the first part of the breakfast questionnaire: Feeder experience. (1 = Strong disagreement; 2 = Disagreement; 3 = Neutral; 4 = Agreement; 5 = Strong agreement).
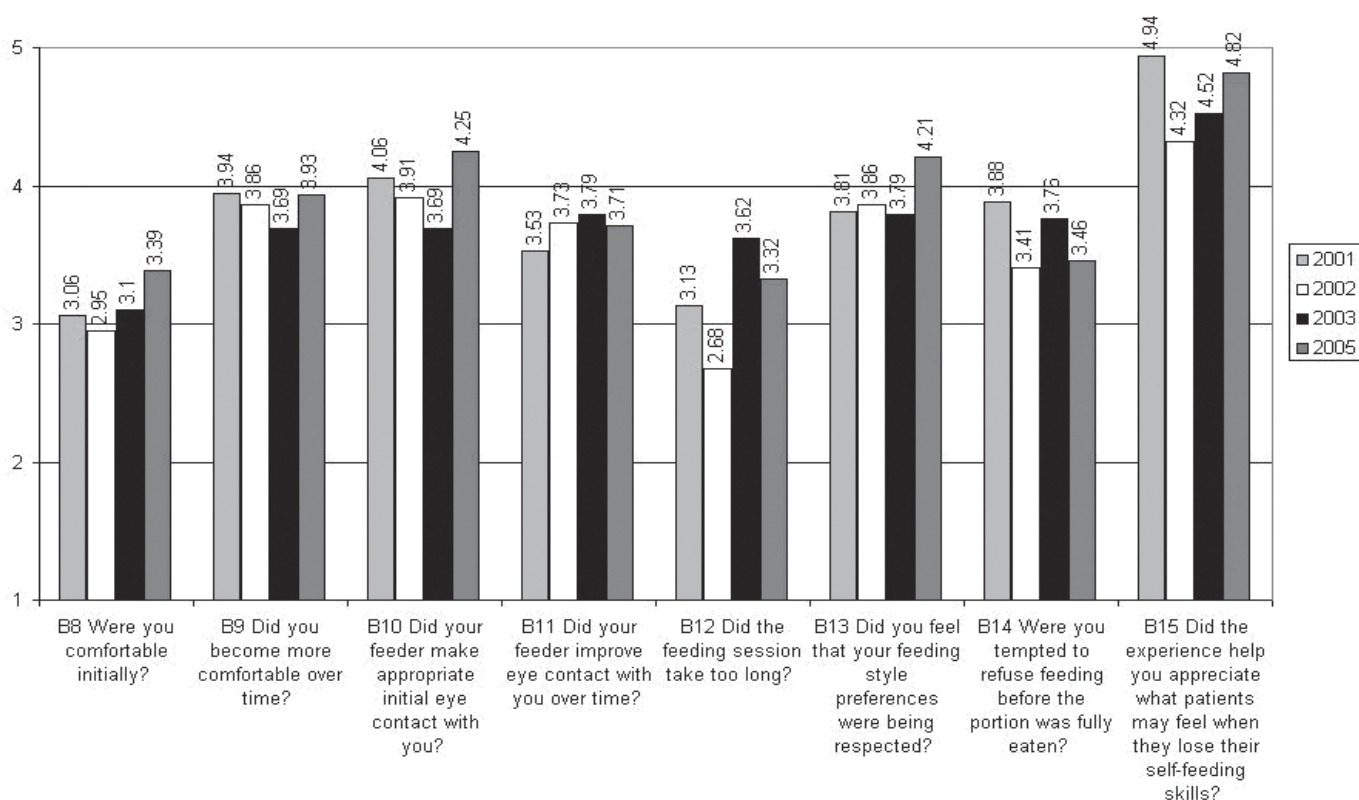

Figure 2. Results for the second part of the breakfast questionnaire: Experience of the person being fed (1 = Strong disagreement; 2 = Disagreement; 3 = Neutral; 4 = Agreement; 5 = Strong agreement).

In order to evaluate the consistency of the student feedback for the breakfast questions across the 4 years, we calculated Kruskal-Wallis tests for all questions. No statistically significant differences were found among the 4 years of students.

Breakfast - Qualitative feedback

The qualitative analysis of the student's written comments provided additional insights. Most students felt reasonably comfortable in their role as feeders, and a number of students commented that they had previous experiences feeding children and relatives. A concern voiced by a number of students related to the feeding speed and the portion sizes when feeding another person:

"I tended to give only very small portions because I was not sure how much she could handle. I slowly increased the amounts of oatmeal on the spoon. I also was not sure when and how often to give her the juice."

Other concerns focused on the textures of the food that was fed. In particular, many students found that the thickened dairy and coffee products held little appeal.

"I would confidently feed a patient oatmeal and thickened juice but not the thickened dairy or coffee."

In their role as the person being fed, the students reported feelings of loss of control and helplessness. Many students commented that they were only able to eat very little food.

"This experience really illustrated the loss of control that is experienced by the patient."

"I hated being fed, even though my colleague did her best to make me feel comfortable. I was full after just a few bites."

The other common theme focused on the texture and the taste of the oatmeal breakfast and the thickened liquids. In particular, many students commented negatively on the thickened liquids.

"I had an awful feeling of gagging while trying to swallow. The food was visually unappealing, and being fed with a spoon was unpleasant."

"NO WAY. The liquids are DISGUSTING. My stomach turned each time I tried to drink the 'delicious ready-to-serve' thickened juice."

Lunch - Quantitative feedback

The questions and bar graphs of the results for the lunchtime questionnaire can be found in Figures 3 and 4. The students reported that neither the pureed food nor the thickened liquid were enjoyable (questions L1 and L2). While feeding themselves was easier than being fed during breakfast (question L3), students reported that they took in lesser quantities than they would have during a typical normal meal (question L4) and that they were still feeling hungry and thirsty after lunch (question L5). While students were neutral on the question of eating a similar meal in front of friends (question L6), they were apprehensive about eating it in a restaurant (question

L7). In terms of swallowing techniques, the students consistently reported that the Supraglottic Swallow was much easier than the Mendelsohn manoeuvre (questions L8 and L9). However, the students also commented that it would have been very hard to use either of the techniques for the whole meal (question L10). Overall, the students agreed that the surprise element added to the quality of the experience (question L11) and that the experience was helpful for their understanding of the patient perspective (question L12).

In order to evaluate the consistency of the student feedback for the lunch questions across the 4 years, we calculated Kruskal-Wallis tests for all questions. No statistically significant differences were found among the 4 years of students.

Lunch - Qualitative feedback

The qualitative student feedback for the lunch task indicated that the students felt disappointed with the meal. Many students reported that they were still hungry, mostly because they had not been able to eat regular sized portions.

"I really couldn't do it. I lost my appetite completely."

"I was very thirsty but the thickened liquids did not quench my thirst. If I was faced with the prospect of having to eat this food all the time, I really would not consider eating an enjoyable activity anymore."

Some students reflected on their own preferences regarding food textures. In particular, a number of students commented that pureed or overly soft foods could make them gag.

"I can't handle textures that don't have to be chewed. I had to chew the liquid and the puree. I am so hungry!"

However, even though many students felt hungry and unsatisfied by the meal, the overall evaluation of the experience was highly positive.

"I still feel very hungry – but it has been a good experience. It helps me appreciate the solid food types that I am able to eat and the frustrations of an individual who cannot eat the foods he or she prefers."

"This experience was great because I can better relate to preferences and dislikes of my patients. There is a hunger factor that comes into effect when you restrict foods."

Overall evaluation - Qualitative feedback

The final questionnaire consisted of four open-ended questions related to the students' overall impression of the day. To the question whether a similar experience should be offered to future years of students, the students responded unanimously with 'yes'.

"Yes, definitely. It was good to have the experience of trying to understand what some of our patients may experience."

"I think this whole experience was extremely helpful in allowing me to feel what patients may feel."
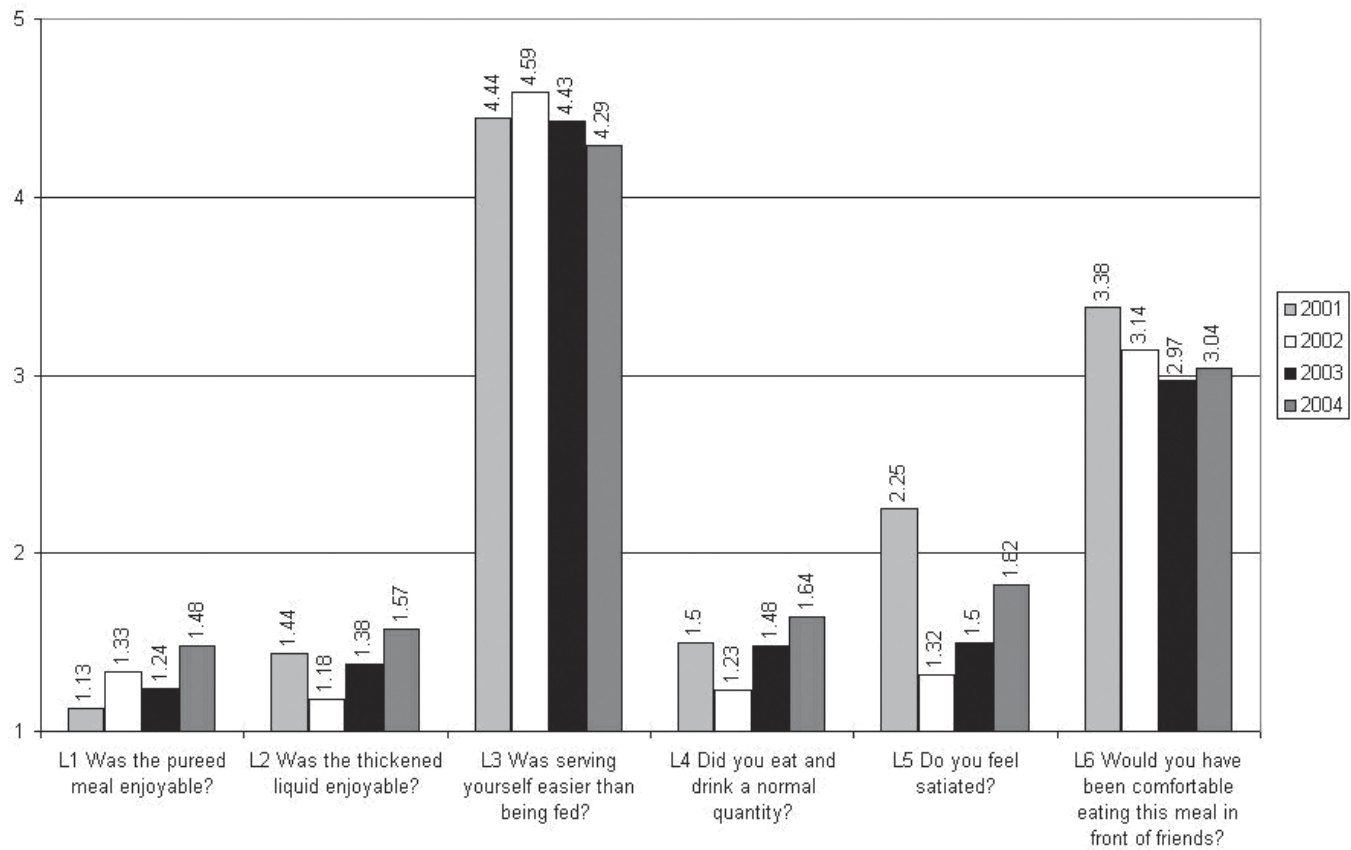
Figure 3. Results for the first part of the lunch questionnaire.
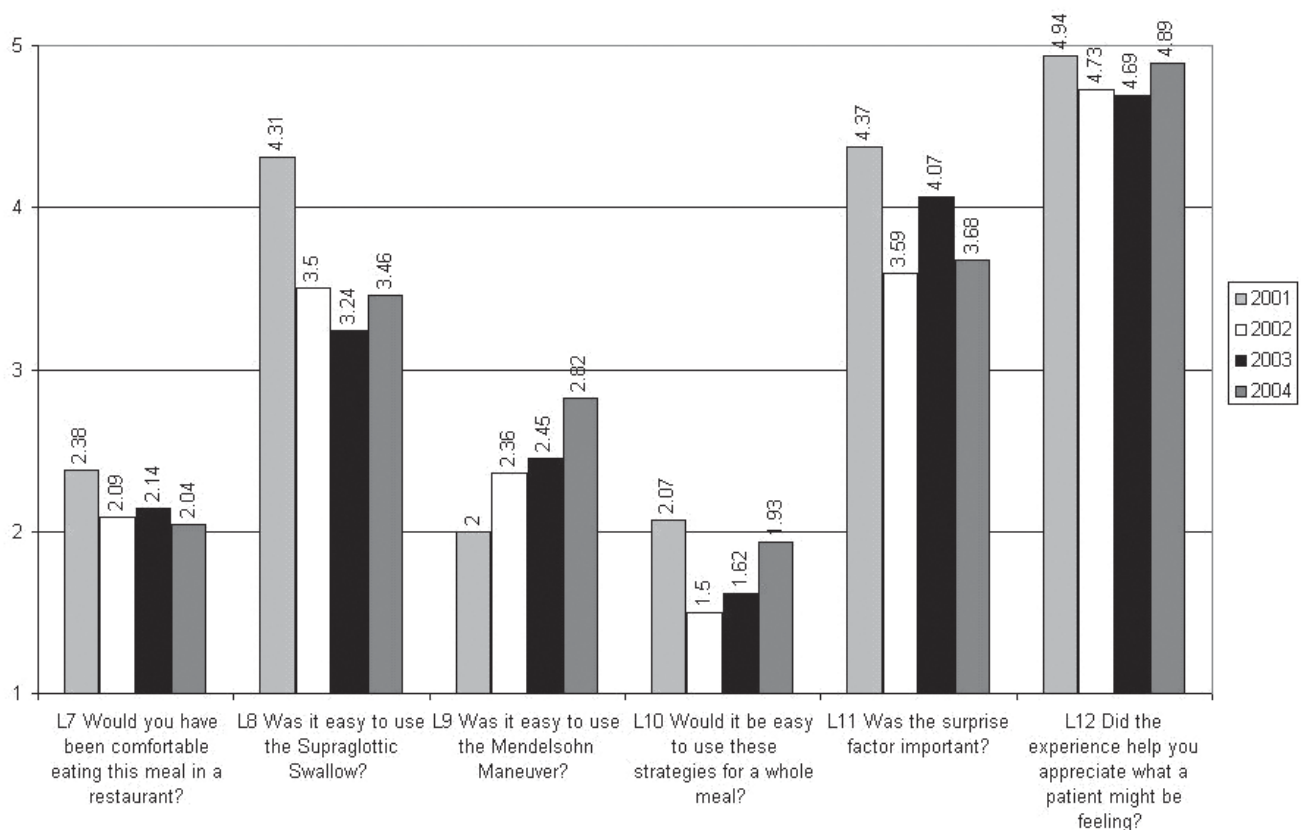(1 = Strong disagreement; 2 = Disagreement; 3 = Neutral; 4 = Agreement; 5 = Strong agreement).

Figure 4. Results for the second part of the lunch questionnaire. (1 = Strong disagreement; 2 = Disagreement; 3 = Neutral; 4 = Agreement; 5 = Strong agreement).

When asked whether changes should be made to the experience day, most students answered that no changes should be made. A number of students suggested that the instructors should serve 'real' food and drinks after the experience, although the same students also conceded that this would probably detract from the realism of the experience.

"I think there will invariably be people [students] who are angry or upset, but I think this was an essential experience for developing empathy. We only have to deal with these 'hardships' for half a day but many of our patients may have to contend with this for life."

To the third question about things that should be kept the same, most students answered that everything should be kept the same. When asked in the fourth question whether the element of surprise was necessary for the experience, the overwhelming majority of the students agreed that the element of surprise had added to the realism of the experience. All students agreed not to divulge any information about the experience day to the students in the next year's class so as to not spoil the experience for them.

"I think it is the surprise that made it much more 'real'. It was much easier to appreciate and a valuable experience."

Discussion

Overall, the experience was successful and all students across the 4 years agreed that it was worthwhile and enlightening. A number of students commented in additional personal testimonials that the experience had increased their understanding of the experiences of dysphagic patients and that this increased understanding would make them more compassionate therapists. The consistently positive student feedback across the 4 years of students confirmed the usefulness of the learning experience.

The students, who were all in their second year in the program, were asked not to share the particulars of the learning experience with the current first-year students in order to preserve the element of surprise. While the authors had no means of monitoring how well the secret was kept, none of the incoming groups appeared to be in any way oriented to the tasks and the surprise appeared to be genuine. This cooperation of the students to not spoil the surprise for future generations of students may be taken as a further indicator that the students did value the learning experience.

In all 4 years, an interesting but unexpected detail was that many students used the opportunity to reflect on their own food and eating preferences. Specifically, some students commented on a general dislike of any kind of pureed or soft food textures. It is unlikely that graduate students of speech-language pathology are more particular about food textures than the general population. Rather, this finding can serve as a reminder to the practicing speech-language pathologist that some people will not be able to eat even small quantities of texture-adjusted food.

In conclusion, the experience served as a valuable reminder to both our students and to us, the teaching faculty, that a caring speech-language pathologist will have a professional understanding that goes beyond purely academic knowledge. Assuming the role of the patient for a day is an enlightening experience that will help a student develop a personal work ethic that is guided by an appreciation of the patient's perspective.

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■ Mapping Functional Communication Measurements for Traumatic Brain Injury to the WHO-ICF

■ Représenter les mesures de communication fonctionnelle des traumatismes cranio-cérébraux par rapport à la CIF

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Abstract

Traditional impairment-based cognitive communication assessments do not adequately capture the complex functional communication problems of individuals with traumatic brain injury (TBI). There are three objectives of this paper. The first objective is to review the World Health Organization's International Classification of Functioning and Disability's (ICF) conceptual framework. The second objective is to describe the use of the ICF to conceptualize the functional communication abilities of individuals with TBI. The third objective is to discuss findings from a mapping analysis of three functional communication measures to the components of the ICF. The three measures include the American Speech-Language Hearing Association Functional Assessment of Communicative Skills (ASHA FACS) (Frattali, Thompson, Holland, Wohl, & Ferketic, 1995), the Communication Activities of Daily Living (CADL-2) (Holland, Frattali, & Fromm, 1999), and the Functional Assessment of Verbal Reasoning and Executive Skills (FAVRES) (MacDonald, 1998). The findings from the mapping are reported and their relevance to clinical practice is discussed. Finally, suggestions are provided regarding the use of the WHO-ICF framework by speech-language pathologists when they determine which functional communication activities are important to individuals with TBI, and which measurement tools most accurately reflect the functional communication abilities of individuals with TBI.

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Les évaluations classiques des troubles cognitifs de la communication ne reflètent pas de manière adéquate les troubles complexes de communication fonctionnelle des personnes ayant subi un traumatisme cranio-cérébral (TCC). Le présent article vise trois objectifs. Le premier consiste à passer en revue la Classification internationale des fonctionnalités, incapacités et états de santé (CIF) de l'Organisation mondiale de la santé (OMS). Le deuxième cherche à décrire comment utiliser la CIF pour conceptualiser les habiletés de communication fonctionnelle des personnes ayant subi un TCC. Le troisième vise à discuter des résultats d'une analyse de représentation de trois mesures de la communication fonctionnelle par rapport aux composants de la CIF. Ces trois mesures comprennent l'évaluation fonctionnelle des capacités de communication (FACS) de l'*American Speech-Language Hearing Association (*Frattali, Thompson, Holland, Wohl et Ferketic, 1995), les activités de communication du quotidien (CADL-2) (Holland, Frattali, & Fromm, 1999) et l'évaluation fonctionnelle du raisonnement verbal et des compétences d'exécution (FAVRES) (MacDonald, 1998). Les résultats de la représentation y sont présentés et leur pertinence vis-à-vis de l'exercice clinique y est abordée. Enfin, l'article fournit des suggestions sur l'utilisation du cadre de la CIF de l'OMS par des orthophonistes afin de déterminer quelles activités de communication fonctionnelle sont importantes pour les personnes ayant subi un TCC et quels outils de mesure reflètent le mieux les habiletés de communication fonctionnelle de ces personnes.

Key words: WHO-ICF, traumatic brain injury, functional communication, adults

According to results from Statistics Canada's Canadian Community Health Survey there currently are over 51,000 Canadians who sustained a brain injury (Statistics Canada, 2006). The Ontario Brain Injury Association (OBIA, 2001) estimates that over 18,000 Ontarians of all ages sustain a traumatic brain injury (TBI) yearly, and of these, 12,046 are classified as mildly impaired, 1,317 as moderately impaired, and 1,610 as severely impaired. The College of Audiologists and Speech-Language Pathologists, in their published Professional Practice Guideline for Cognitive Communication Disorders (CASLPO, 2002), reports that "Given the estimated incidence of traumatic brain injury in Ontario, combined with the research data on those with residual cognitive-communication impairments, it is estimated that over 11,000 individuals per year in Ontario will require speech-language pathology intervention for cognitive-communication impairments" (CASLPO, p. 5). Data from the United States show an incidence rate of traumatic brain injury (TBI) of 200 cases per 100,000 persons or about 500,000 new cases per year (Sohlberg & Mateer, 2001). These figures exceed the incidence for both stroke and epilepsy (Sohlberg & Mateer, 2001). TBI occurs twice as frequently in men than in women (Beukelman & Yorkston, 1991; Sohlberg & Mateer, 2001). In terms of age, the highest frequency of TBI occurs in children under 5 years of age, those 15 to 24 years old and adults over the age of 65 (Beukelman & Yorkston; Ylvisaker, Szekeres & Feeney, 2001).

Individuals with TBI often suffer cognitive-communication impairments. Cognitive-communication problems refer to difficulties in communication such as listening, speaking, writing, reading and social interaction (pragmatics) that are the result of underlying cognitive impairments due to neurological damage (Body, Perkins, & McDonald, 1999). These underlying cognitive impairments include deficits in attention and memory systems and processes, learning, linguistic access, retrieval and organizational processes, problem solving, reasoning, executive functions, awareness, and insight, among others. Cognitive-communication impairment is a common sequela following TBI. Functional cognitive-communication skill is defined as "the ability to receive or convey a message, regardless of the mode, to communicate effectively and independently in a given environment" (ASHA, 1990, p. 2). Examples of real world activities where functional communication difficulties can be experienced include completing school-based homework, maintaining a job, volunteering, and socializing with friends and family, among others. Successful functional communication is dependent on a number of contextual factors, such as the environments in which individuals live, their interpersonal supports and relationships, the services and systems available to them and personal factors such as social background, lifestyle and educational background, to name a few.

The assessment and treatment of functional cognitive-communication disorders is within the scope of practice of speech-language pathologists (CASLPO, 2002). However, speech-language pathologists who work with adults with TBI face multiple challenges in assessment. While adults with TBI frequently perform adequately on standardized tests of communication administered in clinical environments, they and their caregivers often report problems with functional communication. Following TBI, "individuals re-entering the community, often pass the test, but fail at life" (MacDonald & Johnson, 2005, p. 895). The typical clinical assessment protocol for cognitive communication in adults with TBI often does not include assessment of the functional communication challenges they face outside the clinical environment. Rather, the focus tends to be on the assessment of the cognitive systems and processes that support their communication (Gillis, 1996).

Larkins, Worrall and Hickson (2000) stated that there are three main reasons that a functional approach to the rehabilitation of adults with cognitive-communication problems should be undertaken. Firstly, the majority of individuals with TBI are young with many years to function in society. Secondly, cognitive communication disorders frequently are persistent and long-standing. Thirdly, with advanced medical technologies and procedures, and increasing health care knowledge, there are increased numbers of adults with TBI who survive their injuries. The increased survival rates contribute to rising rehabilitation costs. An additional reason is that a functional approach to rehabilitation is linked theoretically, conceptually and clinically to cognitive-communication problems inherent in TBI. Functional approaches to rehabilitation often focus on reintegrating individuals with TBI back into their communities because the majority are young and just beginning to develop social roles and to assume community responsibilities (Larkins, Worrall, & Hickson, 2004).

The WHO-ICF Framework

The International Classification of Functioning, Disability and Health (ICF) (WHO, 2001) is a scientific tool that provides a detailed and standardized framework for describing and comparing the health of individuals. The WHO-ICF framework is based on a biopsychosocial model that integrates medical and social models to describe disability and health. The ICF is organized into two parts that include 1) Functioning and Disability and 2) Contextual factors (see Figure 1). Both of these parts, in turn, are categorized into two components. The first part, Functioning and Disability, includes the components of a) body structure and function, and b) activities and participation. The second part, Contextual factors, includes the components of a) environmental factors and b) personal factors. The ICF framework, therefore, describes human health along three levels: body part/body function (body structure and function); person (activity); and person in a societal role (participation). The interactions among environmental and personal factors and the components of body structure and function and activity and participation characterize the state of an individual's level of functioning
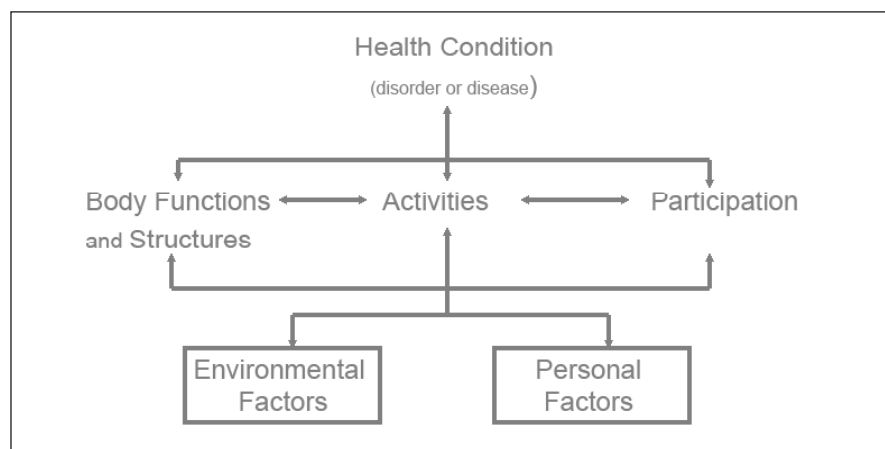
Figure 1. World Health Organization International Classification of Functioning, Disability and Health (2001)

and disability.

Body structure includes the anatomical parts of the body (i.e., organs, limbs and their components) whereas body function refers to the physiological and psychological systems of the body. The activities and participation components of the ICF describe an individual's functional abilities (i.e., how well they function in the real world). Activities refer to the execution of actions or tasks by individuals, and participation is defined as involvement in life situations (WHO, 2001). Both the activity and participation components can be described in positive and negative terms using the following terminology: activity limitations (i.e., difficulties in carrying out activities), and participation restrictions (i.e., problems encountered in engaging in life situations).

Qualifiers are used to describe further the functioning at body, person and societal levels (WHO, 2001). Within the body structure and function domains, qualifiers identify the presence and severity of impairment. Within the activity and performance domains, performance and capacity qualifiers describe how individuals manage in their current environment including whether assistive devices or personal assistance are used. The capacity qualifier operationalizes how individuals function in a standardized environment (e.g., an individual's capacity without the use of personal assistance or assistive devices) (WHO, 2001). The differences between capacity and performance provide valuable information about how the environment in which individuals exist can be modified to facilitate optimal performance.

Contextual factors, on the other hand, refer to the complete background (i.e., existence and lifestyle) of individuals. The factors are grouped into two components: environmental factors and personal factors. Environmental factors refer to individuals' physical, social, and attitudinal environments and can be organized at two levels: individual (immediate environment) and societal (social structures,

community or society systems). Environmental factors can be positive (facilitator) or negative (barrier) in terms of the impact they have on functioning. Personal contextual factors include the circumstances and experiences of the individuals' lives and any additional characteristics that are not part of a health condition (e.g., race, gender, age, social background and education). Examples include race, gender, age, social background and education. While not part of the ICF classification, personal factors are recognized as important influences on individuals' functioning and disability (WHO, 2001).

The WHO-ICF and Functional Communication Measurement in TBI

A key issue in cognitive-communication assessment of adults with TBI is the need to examine functional communication beyond the level of impairment. While there are a large number of standardized tests of communication in adults with TBI at the impairment level (i.e., body structure and function), there are few standardized tests of functional communication for the components of activity and participation. There also is an urgent need for ecologically valid measures that predict functioning in societal roles (MacDonald & Johnson, 2005).

The ICF is an excellent framework within which to describe functional communication abilities associated with TBI. The ICF is "important to speech language pathologists because it links communication to broader life skills" (Threats & Worrall, 2004, p. 57) and demonstrates the "centrality of communication to all human functioning" (Threats & Worrall, p. 57).

According to Threats and Worrall (2004), there are some clinicians who view their practice within narrowly defined aspects of speech and language domains which, in turn, minimizes contributions of the profession to broader areas of daily living where communication plays key roles. The ICF framework is structured ideally to help practitioners consider communication along a continuum, with impairments of body structures and functions representing the basic underpinnings of a communication disorder that influence individuals' abilities to engage in functional communication activities and to participate in society (Davidson & Worrall, 2002). Contextual factors (environment and personal factors) that are thought to have little impact (restricted context) at the level of communication impairment, however, can have increasingly greater influence (unrestricted context) when assessing communicative participation (Davidson & Worrall, 2002). Communication is linked intimately and inextricably to many of the activity and participation

domains of the ICF framework (Byrne & Orange, 2005; Eadie, 2003; Larkins, Worrall, & Hickson, 2000; Threats & Worrall, 2004; Worrall, McCooey, Davidson, Larkins, & Hickson, 2002). Examples of these links include learning and applying knowledge, self-care, domestic life, interpersonal interactions and relationships, major life areas and community, social and civic life, among others.

The American Speech, Language and Hearing Association (ASHA, 2001) supports the use of the WHO-ICF framework in their scope of practice for speech-language pathologists because "the overall objective of speech-language services is to optimize an individual's ability to communicate and/or swallow in natural environments and thus improve quality of life" (ASHA, 2001, p. 26). ASHA advocates the use of the ICF framework because it is recognized internationally and has, as its emphasis, a focus on functional activity outcomes (Threats, 2003). It also is of interest that the College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO) states that the underlying philosophy of their Professional Practice Guidelines for Cognitive-Communication Disorders is consistent with the WHO-ICF framework. Moreover, CASLPO asserts that the WHO terminology should be used in any analysis of cognitive-communication skills (CASLPO, 2002). A review of the URL websites of other Canadian national, provincial and territorial professional associations and licensing bodies revealed that none currently has a position paper or best practice guidelines for cognitive-communication disorders or the use of the WHO-ICF within the context of functional communication and TBI.

Members of the Academy of Neurological Communication Disorders and Sciences (ANCDS), an organization dedicated to promoting quality research and services for individuals with neurogenic-based communication disorders, recently reviewed and evaluated evidence related to standardized and non-standardized assessments of cognitive-communication of adults with TBI. Committee members developed guidelines for speech-language pathologists practicing with individuals who have TBI. In their report, titled 'Practice Guidelines for Standardized Assessment for Persons with Traumatic Brain Injury', the ANCDS members outlined a process to evaluate assessment tests. Sub-committee members surveyed speech-language pathologists in the United States as well as publishers and distributors of test materials, reviewed test manuals, critiqued published literature and gathered expert opinion in the field. Sub-committee members identified a small number of tests (*N*=31) of cognitive-communication suitable for individuals with TBI. The sub-committee members' systematic review of the 31 tests included examination of the reliability and validity properties using standards set by the Agency for Health Care Policy Research (Turkstra, et al., 2005). Following close scrutiny and analyses, sub-committee members identified seven standardized norm-referenced tests that met the majority of the psychometric criteria. Of these seven tests, only four incorporated research about the target

population's daily communication needs and two of these included consumer feedback about ecological validity into the design. Their findings suggest these tests are suitable for assessment at the level of activity/participation within the WHO-ICF framework.

The purpose of this brief report is to present the results of an exercise in which two functional communication assessment tools for TBI identified by the ANCDS Sub-Committee were mapped onto the WHO-ICF framework. These included the American Speech-Language-Hearing Association Functional Assessment of Communicative Skills (ASHA FACS) (Frattali, Thompson, Holland, Wohl, & Ferketic, 1995) and the Communication Activities of Daily Living (CADL-2) (Holland, Frattali, & Fromm, 1999). A third recently published test, the Functional Assessment of Verbal Reasoning and Executive Skills (FAVRES), was included in the current mapping, based on the recommendations of Turkstra, Coelho, and Ylvisaker (2005). The Functional Independence Measure (FIM) (State University of New York At Buffalo Research Foundation, 1993), while identified by the ANCDS Sub-committee as meeting most of the published criteria, was not selected for the mapping exercise because the communication evaluation items were judged by the authors of this paper to be restricted in scope and its rating scale not sensitive to reflect functional improvements in communication (Turkstra et al., 2005). The current authors for the mapping task identified a potential fourth measure, endorsed by the ANCDS Sub-Committee, titled The Behavioral Rating Inventory of Executive Function (BRIEF) (Gioia, Isquith, Guy, & Kenworthy, 2000). However, this measure targets a pediatric population, and was not considered relevant to the primary focus of this paper, adults with TBI.

Description of the Functional Communication Measures

The American Speech and Hearing Association Functional Assessment of Communication Skills for Adults (ASHA FACS) (Frattali, Thompson, Holland, Wohl, & Ferketic, 1995) addresses functional communication across four domains: Social Communication; Communication of Basic Needs; Reading, Writing, Number Concepts; and Daily Planning. There are four qualitative dimensions: adequacy, appropriateness, promptness and communication sharing. Measurement of the 43 functional communication items is based on a 7-point Likert scale of Communication Independence, where 1 = *does not do*, 3 = *does with moderate to maximal assistance*, 5 = *does with minimal to moderate assistance* and 7 = *does.* The ASHA FACS takes approximately 20 minutes to administer and information about an individual's functional communication abilities is gathered through observation by the speech-language pathologist over a minimum of three contacts with the individual. It possesses high interrater reliability for scoring (0.72 to 0.84). It also has high external validity with the Western Aphasia Battery Aphasia Quotient (Kertesz, 1982) (0.73), the FIM (State University of New York at Buffalo Research Foundation, 1993) (0.72 to 0.86) and Scales of

Cognitive Ability for Traumatic Brain Injury (SCATBI) (Adamovich & Henderson, 1992) severity scores (0.78).

The Communication Activities of Daily Living - Second Edition (CADL-2) (Holland, Frattali, & Fromm, 1999) is a measure of functional communication abilities of adults who have brain damage. While the first edition of the CADL was intended originally for adults with aphasia, a validity study of the CADL-2 showed its relevance for assessment of individuals with TBI. Standardization of the CADL-2 was completed on a sample 175 individuals with neurogenically based communication disorders, 20 to 96 years of age. Within this sample, there were 131 subjects with a medical diagnosis of stroke and 29 subjects with traumatic brain injury. The purpose of this test is to assess activity-level communication performances. Reliability of the CADL-2 is consistently high across three types of test error (content, .93; time, .85; and scorer, .99). It also possesses moderately high criterion-related validity, based on its correlation with the Western Aphasia Battery Aphasia Quotient score (r - .66, p < .01). The CADL-2 data are gathered via role-playing where patients are required to respond to real-life scenarios depicted through pictures and questions. For example, after being shown a series of pictures depicting a trip to the doctor's office, patients must respond to questions such as location and time of an appointment, describing the purpose of the visit, completing a form, among other questions.

The Functional Assessment of Verbal Reasoning and Executive Strategies (MacDonald, 1998) is a recently developed standardized test designed for assessment of subtle cognitive-communication impairments secondary to acquired brain injury (ABI). It measures complex communication, verbal reasoning, and executive functioning. It consists of four verbal reasoning tasks, each of which is presented within the context of a novel situation such as work, family gatherings or social situations. Examples of tasks include planning an event and making a decision. Scores for each subtest are derived for time, accuracy, rationale, strengths and weaknesses and analysis of sub-skills. A normative study of N=52 adults with ABI and N=101 normal adults revealed significant differences (p < .01) between the ABI and control groups in total test scores for all three types of scores (accuracy, time and reasons). Interrater-rater reliability was obtained by comparing the scores of two speech-language pathologists on test results for 20 participants (10 ABI, 10 control). Kappa statistics for the accuracy of scoring and the reliability of scoring were .81 and .85, respectively, well above the traditional acceptable value of .70 (MacDonald, 2005).

Method - Mapping Procedure

The scoring guidelines and test forms of the three selected tests were used in the mapping procedure. Each test item from each of the three tests was reviewed separately by the first author (JH). Each test item was mapped onto the domains of the WHO-ICF framework, that is, body structure and function, activities and participation. Items were categorized or mapped onto the WHO-ICF components following a protocol similar to that conducted by Ostensjo, Bjorbaekmo, Carlberg, and Vollestad (2006) in their ICF-based mapping procedure on the Pediatric Evaluation of Disability Inventory (PEDI). Moreover, the definitions of each of the components of the WHO-ICF and corresponding definitions of coded items (e.g., communication, speech, etc.) were used to inform the mapping process. Items were linked with only one of the WHO-ICF components based on mutual agreement by the two authors. The second author (JBO) reviewed all of the mappings conducted by the first author.

Results

Tables 1, 2 and 3 display the results from content analyses of each test relative to the WHO-ICF components of body structure and function, activity and participation and environmental factors. Assigning test items exclusively to a unique ICF part or component was challenging. The assignment of test, questionnaire or checklist items to an ICF component or part was identified originally by the WHO authors as a hurdle in the development of the ICF framework. As a potential resolution to part of this challenge, the WHO authors provided four options about how to relate the activity and participation constructs. The first is to consider activity and participation as unique constructs with no conceptual overlap. The second option is to consider the constructs as possessing partial overlap. The third option is to designate detailed domains as activity and broad category titles as participation. The fourth and final option is to consider the two constructs as unified, overlapped constructs (WHO, 2001). For the purposes of our analyses, Option 2 guided our test item categorization (i.e., test items could be interpreted as both activity and participation items), recognizing that many items could be assigned simultaneously within both components.

The assignment of test items outlined in Tables 1, 2 and 3 shows that the majority was classified within the activity and participation components of the ICF. Many of the specific test items also were found to link with both the body structure and function and the activity and participation components. This shows that many of the items that comprise these three functional assessment tools address both impairment and functional levels of cognitive-communication. A review of the specific domains within the ICF components of body structure and function and activity and participation suggest that simultaneous mapping of test items to several of the life areas also is possible. However, for the purposes of our analyses, items within each functional communication measure were linked to the most precise ICF component because the components are thought to represent a continuum of increasing complexity of communication, with body structure and function representing one end while activities and participation reflected the other anchor. There was strong point-by-point percent agreement (greater than 90%) between the authors of this paper on the assignment of all test items to the ICF components.

The data in Tables 1, 2 and 3 also illustrate that

Table 1

Mapping ASHA FACS Items onto WHO-ICF Components and Contextual Factors

ASHA FACS Subtests	Body structure/ function	Activity	Participation	Environment	Person
				Context	
I Social Communication					
1.Refers to familiar people by name.			X	X	
2. Requests information of others.			X	X	
3. Explains how to do something.		X	X	X	
4. Expresses agreement/ disagreement.		X	X	X	
5. Exchanges information on the phone.			X	X	
6. Participates in group conversation.			X	X	
7. Answers yes/no questions.		X	X	X	
8. Follows simple verbal directions		X	X	X	
9. Understands non-literal meaning and inference.		X	X	X	
10. Smiles or laughs at lighthearted comments.			X	X	
11. Understands non-literal meaning and inference.		X	X	X	
12. Understand conversations when they occur in noisy		X	X	X	
13. Understand what's heard on TV and radio.		X	X	X	
14. Understand facial expressions.		X	X	X	
15. Understands tone of voice.		X	X	X	
16. Initiates communication with other people.			X	X	
17. Adds new information on a topic in a conversation.			X	X	
18. Changes topics in conversation.			X	X	
19. Adjusts to a change in topic by conversational			X	X	
20. Recognizes his/her own communication errors.		X	X	X	
21. Corrects his/her own communication errors.		X	X	X	
II Communication of basic needs					
22. Recognizes familiar faces.		X	X	X	
23. Recognizes familiar voices.		X	X	X	
24. Makes strong likes or dislikes known.		X	X	X	
25. Expresses feelings		X	X	X	
26. Requests help when necessary			X	X	
27. Makes needs or wants known.		X	X	X	
28. Responds in an emergency.		X	X	X	
III Reading, Writing, Number Concepts				X	
29. Understands simple signs.		X		X	
30. Uses common reference materials.		X		X	
31. Follows written directions.		X		X	
32. Understands basic printed material.		X		X	
33. Prints/writes/types name.		X		X	
34. Fills out short forms.		X		X	
35. Writes messages.		X	X	X	
36. Understands signs with numbers.		X		X	
37. Makes basic money transactions.		X	X	X	
38. Understands simple units of measurement.		X		X	
IV Daily Planning				X	
39. Knows what time it is.		X		X	
40. Dials telephone numbers.		X	X	X	
41. Keeps scheduled appointments.		X	X	X	
42. Uses a calendar for time-related activities.		X		X	
43. Follows a map.		X		X	

Table 2

Mapping communicative activities of daily living - 2 items onto WHO-ICF
Components and contextual factors

CADL-2 Subtests	Body Structure/ Function	Activity	Participation	Context Environment	Person
1. Greeting			X		
2. Verbal Instruction			X		
3. Recognizing/providing own name			X		
4. Recognizing/providing address			X		
5. Providing information re work			X		
6. Providing information about speech difficulties			X		
7. Telling time		X	X		
8. Reading a menu			X		
9. Reading a bus schedule		X	X		
10. Comprehending meaning in pictures (what to wear)		X	X		
11. Producing verbal message			X		
12. Comprehending meaning in pictures		X			
13. Receiving/producing written message (invitation)		X			
14. Telling time/problem solving (predict time of next appt).		X			
15. Reading building directory		X			
16. Recognizing general signs (elevator sign)		X			
17. Recognizing sign		X			
18. Producing verbal message to question (receptionist)			X		
19. Comprehending verbal instruction (receptionist)			X		
20. Request to fill out form		X	X		
21. Producing written message(fills out form)		X			
22. Producing verbal response (describes problem)			X		
23. Comprehending spoken message (inaccuracy)			X		
24. Reading medicine label		X			
25. Comprehending/producing verbal message (Maintaining health)			X		
26. Reading signs (washrooms)		X			
27. Reading numeric signs (speeding)		X			
28. Problem solving (driver should slow down)		X			
29 Reading signs (railroad crossing).					
30. Producing written message (grocery list)		X			
31. Reading labels (soup can)		X			
32. Reading labels (hazardous sign)		X			
33. Calculating (applying knowledge re calculating to buy a drink)		X			
34. Calculating (applying knowledge re calculating to buy medicine)		X			
35. Reading signs (to find location in a store)		X			
36. Producing verbal message (request info of store clerk)			X		

Table 2 (continued)
Mapping communicative activities of daily living - 2 items onto WHO-ICF
Components and contextual factors

CADL-2 Subtests	Body Structure/ Function	Activity	Participation	Context Environment	Person
37. Identification white laces (comprehension)					
38. Reading a map		X			
39. Reading yellow pages		X			
40. Reads phone directory		X			
41. Places a call		X			
42. Producing verbal message (requests temp. information)		X	X		
43. Verbal problem solving		X			
44. Producing verbal message (on 911)			X		
45. Reading signs		X			
46. Receiving written message (reading newspaper headline)		X			
47. Receiving written message (reading calendar/recalling previous activity)		X			
48. Recognizing facial expressions		X			
48b Recognizing gestures		X			
48c Recognizing gestures		X			
49. Comprehension of figurative language,(picture)		X			
50. Conversation--ending a conversation			X		

Table 3
Mapping Functional Assessment of Verbal Reasoning and Executive Functioning (FAVRES) Items onto WHO-ICF Components and Contextual Factors

FAVRES Subtests	Body Structure/ Function	Activity	Participation	Context Environment	Person
Task 1: Planning an Event		X	X		
Task 2: Scheduling		X	X		
Task 3: Making a Decision		X	X		
Task 4: Building a Case		X	X		

Legend:

Body Structure: are anatomical parts of the body such as organs, limbs and their components.
Body Function: are physiological functions of body systems (including psychological functions).
Activity: is the execution of a task or action by an individual.
Participation: is involvement in a life situation.
Environment factors: physical, social and attitudinal environment in which people live and conduct their lives
Person factors: includes age, race, gender, educational background, personality, coping styles and lifestyle

*Note: For the purpose of the analysis, test content items were linked to the most precise ICF category.

the ASHA FACS is the only measure that includes environmental factors relative to functional communication. Environmental factors are incorporated into the method in which test data are collected (i.e., observation of the individual in a variety of naturalistic environments). The CADL-2 and the FAVRES, on the other hand, are tests that involve simulation and role-playing. They were rated as contextually independent because they are intended to be administered within a standardized, controlled clinical setting. Standardizing the environment in which test data are collected increases between- and within-participant reliability. The benefit of increased reliability, however, is offset by the low ecological validity of the data, that is, data that do not necessarily represent a clear picture of individuals' functional abilities in multiple contexts within which everyday communication occurs. The naturalistic environments in which data for the ASHA FACS must be collected address the performance qualifier of the ICF which describes what individuals do in their environment (WHO, 2001). It is important to note, however, the crucial importance of conducting observations and assessments in multiple environments and numerous contexts in order to obtain a range of cognitive-communicative performances of individuals with TBI. This point is expanded further in the discussion section.

Discussion

Impairment-based communication assessments traditionally have been used by speech-language pathologists in their practices with adults with TBI largely because of their availability and the relatively straightforward manner in which they can be administered, scored and interpreted (Threats, 2003). The assessment of body structure and function alone, however, does not provide an adequate picture of the everyday communication abilities of adults with TBI. Additionally, while a combination of impairment-based and activity and participation-based measures provides a comprehensive picture of communication for adults with TBI, consideration must also be given to how cognitive-communication is influenced by the environment and other personal factors.

The challenge of assigning functional communication test items to each of the components and parts of the WHO-ICF framework and to the domains within these components reflects the complexity of communication and its fundamental role to human functioning. The findings from our analyses suggest that the WHO-ICF can be a useful framework within which to conceptualize and to analyze functional communication measures. Our findings demonstrate, however, that assignment is not always straightforward, with the resulting categorization of functional communication test items to both activity and participation components.

There were challenges in assigning functional communication items from the three tests to the more detailed activity and participation domains of the WHO – ICF. These problems were similar to those encountered

by others who conducted a similar ICF-based analysis on the Pediatric Evaluation of Disability Inventory (PEDI) (Ostensjo, Bjorbaekmo, Carlberg, & Vollestad, 2006). The definitional elements of the Communicative Activity domain of the WHO – ICF do not provide sufficient breadth within which to link the functional test items used in this study. For example, several functional communication items could have been linked with equal validity to other activity and participation areas such as Learning and Applying Knowledge, Self Care, and Performing Tasks and Major Life Activities. This cross-linking exemplifies the multiple and complex interactions functional communication has with many life activities.

It is important to note that the WHO-ICF framework provides a useful theoretical conceptualization within which to observe and to assess individuals' performances in multiple environments (e.g., school, work, home, socially, etc.) and numerous contexts (e.g., teachers, co-workers, family, friends, unfamiliar people, etc.). In the case of individuals with TBI it is imperative to consider that family members' ratings of their relative's cognitive-communication may reflect only a narrow range of skills. For example, family members may be evaluating cognitive-communicative performances under highly supportive, less complex environments that optimize communicative success. Clinicians must be cognizant of the need to obtain and to assess the cognitive-communicative performances of individuals with TBI under independent and challenging circumstances (e.g., interactions with unfamiliar people, in the presence of few external cognitive and communicative supports, etc.). Such a comprehensive perspective would advance the ecological validity of family members' ratings and assessments and establish a substantial foundation of data upon which to develop clinically meaningful goals and strategies.

Conclusions and Future Directions

The prevalence and incidence figures of adults with TBI, both nationally and internationally, emphasize the growing need to offer comprehensive, effective, valid and functionally useful rehabilitation programs. The use of the currently available impairment-based communication assessment measures by S-LPs does not capture adequately the complex functional cognitive-communication abilities or problems of individuals with TBI. There is an expanding need for valid functional communication assessments that reflect the broad range of communication activities, abilities and problems of individuals with TBI and their participation within society. Assessment at all levels of the ICF is crucial. There is an imperative to develop and to conduct systematic analyses of the cognitive-communicative performances of individuals with TBI in all areas of the ICF (i.e., impairment; activity/participation; and environment and contextual factors). Moreover, reliable and valid functional communication assessment measures must be able to take into consideration environmental and personal factors. In this regard the WHO-ICF offers a comprehensive, universal framework

for looking at the complex role communication plays in the lives of patients with TBI. The WHO-ICF framework has the potential to be of central importance to S-LPs who work with adults with TBI. Using the framework, S-LPs can link functional communication to activities of daily living and help answer questions regarding which WHO-ICF constructs are most relevant to the communication functioning of their patients with TBI. Further, S-LPs can determine which of the constructs are being measured by items from a particular functional communication assessment test. The WHO-ICF also has the potential to assist S-LPs in determining which assessment items incorporate qualifiers such as capacity (standardized environment) and performance (natural environment) which are important for considering whether a environment is facilitative or acts as a barrier to functional communication.

Further research is required to investigate what functional communication activities are important to individuals with TBI and to their multiple communication partners (e.g., family, friends, teachers, co-workers, etc.), to what degree these activities compare to existing functional communication test measures, and how test items map onto the detailed levels of each of the domains of the WHO- ICF framework. This information will prove valuable for S-LPs who work with adults with TBI, assisting them in evidence-based clinical decision-making, improving face-validity of assessment protocols, optimizing intervention strategies, and enhancing patients' quality of everyday life. Finally, S-LPs also must work to identify and to test empirically WHO-ICF based strategies thought to be supportive of cognitive-communication in TBI. In this regard, S-LPs can address a wide range of clinic and 'real world' considerations and contexts captured by the comprehensive framework inherent in the WHO-ICF.

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Author Note

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Book Review / Évaluation de ressource écrit

Textbook of Voice Disorders
Albert L. Merati and Steven A. Bielamowicz
(Editors) (2007)

Publisher: Plural Publishing Inc., San Diego, California
Cost: $101.00 (CAD)
Reviewer: Melanie M. Campbell, Ph.D., CCC-SLP, S-LP(C)
Affiliation: Department of Speech Pathology and Audiology, Faculty of Rehabilitation Medicine, University of Alberta

As an instructor of a graduate course in voice disorders, I am always on the lookout for new textbooks. Thus I enthusiastically accepted the request to review Textbook of Voice Disorders. My initial reward for doing so was to experience the enticement of the book's cover and glossy pages filled with beautiful color photography of the larynx. It is an edited book that features 18 chapters addressing topics related to anatomy and physiology, diagnostic procedures, principles of therapy, and disorders of the larynx. The editors' purpose was to create a work "that distills and collates the fundamentals of voice science and its direct clinical applications in one approachable volume." They also wished to include representatives from major centers of clinical and research excellence "to ensure a credible and collaborative presentation." Indeed, 28 authors from France, Stockholm, and 16 centers across the United States contributed the chapters.

The editors stated that their goal was to create a "core textbook for graduate course work for speech language pathologists, as part of Otolaryngology residency reading, or as a resource for maintenance of certification review by established otolaryngologists." That goal was reflected in the editors' choice of contributors. Twenty-one of the chapter authors listed their credentials as M.D., five as Ph.D., and four as certified speech-language pathologists. The editors wanted "to provide a direct, cohesive, and instructional work" and thus asked contributors to write within a uniform format featuring core information, key points, review material, and study questions. Writers separated established information from theories under development by presenting the latter in "Thought," "Controversy," and "Emerging Concept" boxes within chapters.

The readership goal for this book was too broad. It is too much to expect it to be a "core textbook" for graduate speech-language pathologists and otolaryngology residents and established otolaryngologists doing certification review. While the representation of authors from many different geographical centers was excellent, the fact that 21 of the 28 authors were physicians points to the predominant medical "voice" (pun intended) of the text. The foreward by Dr.

Thomas Murry stated that chapters were presented in a team-like fashion in the modern model of otolaryngologist with speech-language pathologist, but only four of the 18 chapters were actually written by interdisciplinary co-authors. In my opinion Dr. Murry was more accurate in characterizing the book as an update for mature clinicians and a reference for young clinicians.

The editors set out to present a work that distilled and collated fundamentals of voice science and direct clinical applications. They succeeded on several levels. The references listed and cited by the authors were superb and very current. Most of the authors beautifully synthesized the current state of clinical care and the most recent research contributions. The major contributions of this book to communication science and disorders are the numerous and remarkable color photographs that beautifully illustrate many conditions of the larynx and the several cogent and clinically relevant discussions of the coordination across neurological subsystems to accomplish phonation and to perform swallowing and speech functions. Of special note was Christy Ludlow's chapter on "Physiology of Airway Regulation" that employed everyday observations to illustrate underlying physiology and clinical principles. The relative weakness of the text for communication science and disorders was the heavy bias toward a medical audience. Unless "Trendelenburg position," "sialorrhea," "Kerrison punch," and "anastomosis" are part of your everyday vocabulary, you will need, as I did, an excellent medical dictionary at your side while reading most chapters. One chapter actually stated, "As otolaryngologists we…." Only three pages of the entire text were devoted to descriptions of voice therapy to facilitate breath control and support, increase airflow during phonation, and facilitate oral resonance. For the field of otolaryngology the contribution of the book is more apparent.

The editors stated that they wished to provide a direct, cohesive, instructional work. The foreword by Dr. Murry described the text as written in an easily readable style, making it appropriate as a companion to basic science lectures. I do not share that opinion. While I am used to the joy of interacting with very intelligent, graduate, speech-language pathology students each year, I would not select this work as the primary textbook for a voice disorders course. I would recommend it for the mature clinician, the researcher, and the instructor of a voice disorders course as a wonderfully illustrated resource of supplemental information about laryngology and voice. Another reason I would not select it as a primary text is that there is no inclusion of the topic of laryngectomy, a topic most instructors of voice disorders would be obligated to include in a course. The editors and publisher provided superb cross-references of material in each chapter, contributing to cohesion. The uniform format across chapters also contributed to unity. I have also already

applauded the beautiful photographs that offer the reader so much insight. However, I was very disappointed to note approximately 50 typographical errors in the text. Some were simply misspellings, but others included the use of the outdated term "spastic dysphonia" and a partially printed last line of a figure caption on page 103. Even the beautiful photographs sometimes were not labeled well enough to enable the reader to interpret them.

Experienced voice clinicians, researchers, and instructors of voice disorders courses would find that the Textbook of Voice Disorders is worth acquiring, given its beautiful photographs and its synthesis of information about the current state of clinical care and the contributions of recent research. It would also be a worthwhile resource for university libraries and clinics specializing in voice care. However, much of the work is biased toward the physician reader. It could serve as an excellent information supplement for clinical training of speech-language pathology students, but requires too much background knowledge or experience to be used to advantage as a primary textbook.

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Sharing Books and Stories to Promote Language and Literacy
Anne van Kleek (Editor) (2006)

Publisher: Plural Publishing, San Diego, CA.
Cost: $58.95 (CAD)
Reviewer: Denyse V. Hayward, Ph.D.
Affiliation: Canadian Centre for Research on Literacy, University of Alberta, Edmonton, Alberta.

This volume is part of a series on emergent and early literacy development. The goal of the entire series is to provide practical and evidence-based resources across a wide range of emergent literacy skills to encourage professionals to include literacy activities as an integral part of their services to toddlers, preschoolers and school-aged children. The focus of this particular volume is using stories and book sharing activities to facilitate language and literacy development. Chapter 1 provides an overview, after which the volume is divided into two sections. Section 1 (Chapters 2 - 4) focuses on using book sharing to fostering skills related to print (e.g., phonological awareness, print awareness, and letter knowledge). Section 2 (Chapters 5 - 9) focuses on using book sharing to foster oral language development (e.g., vocabulary, inferential language, and syntactic and narrative skills). Several chapters include information on cultural considerations when using stories or books in assessment and intervention contexts. Of interest to Canadian readers is that several of these examples are drawn from Canadian studies.

Chapter 2 focuses on teaching a wide array of phonological awareness (PA) skills. The authors first provide an overview of the current empirical evidence related to the importance of PA training with young children. The remainder of the chapter describes a phonological awareness training program developed by the authors based on empirical findings. The authors provide both teaching examples for a variety of PA tasks using trade storybooks along with an appendix listing PA skills that may be targeted in numerous trade storybooks. The utility of this section is that it shows the reader how to take empirical evidence and design a treatment program using available resources. However, given the target audience, there are two important aspects not addressed by the authors. First, empirical evidence has revealed that PA is important but not sufficient condition in learning to read. From this chapter a reader would be likely to conclude that all children would benefit from PA instruction when this is not necessarily the case. Secondly, Spector (1992) revealed that many kindergarten children fail to perform well on PA tasks due to task demands (i.e., complexity and unfamiliarity) rather than poor PA skills. While the authors point out that task complexity needs to be considered, many of the tasks in the described program are highly complex. Without a clear explanation of the impact of complexity on task performance professionals attempting to implement this program may incorrectly

conclude that a child who performs poorly on a task has poor PA skills when performance difficulties may be due to other factors.

In Chapter 3, ways in which print awareness can be fostered during shared book reading are described. To begin, the authors describe the components of print awareness (e.g., print functions, print conventions, and print forms). Next, the authors describe a technique termed 'print referencing', which refers to ways adults can focus children's attention on print while engaged in book sharing. Examples of print referencing techniques are provided for each of the print awareness components in addition to 'high' and 'low' levels of scaffolding support. A 30-week, author-developed program to teach print awareness to preschoolers in a classroom setting is outlined. The chapter appendix provides a list of books used in the program along with the targeted print concept. These authors also present some very interesting preliminary data on a coding system developed to examine the type of language used by adults during book sharing activities. The only difficulty the targeted audience may encounter with this chapter is that distinctions between the descriptors of 'high' and 'low' scaffolding support are at times difficult to discern. This may impact a professional's ability to utilize the techniques at least as described in the chapter.

Chapter 4 focuses on teaching letter naming knowledge (LNK) during book sharing activities. The author begins with discussion on the importance of LNK. An excellent synthesis of the history of research on LNK is provided with particular reference to why LNK has received little attention in the research literature and in clinical or educational applications even though this skill is highly predictive of early reading success. The author provides a very compelling argument for teaching LNK that will be of interest to clinicians and educators alike. The second half of the chapter examines research using shared book reading as an opportunity to teach LNK. Of interest to the reader is the way in which books tend to be used differently to teach LNK by families depending on cultural background. Consideration of cultural differences is an integral part of the suggestions provided by the author for teaching LNK during shared book reading.

In Chapter 5 the author explains the need for parent training techniques to promote language development with toddlers. Even though this is a critical language-learning period, toddlers often do not receive community support because they no longer have frequent contact with the health care system and they are typically not enrolled in educational programs. The author then provides compelling evidence for teaching parents to use an interactive book sharing technique, 'dialogic reading,' to promote the development of oral language and preliteracy skills of toddlers. This chapter provides the reader with excellent examples for adapting research conducted in controlled laboratory settings to real world settings. Unfortunately the author does not report data on the effectiveness of this technique with families from non-mainstream cultures. Thus, it is important for professionals interested in this technique to read Chapter 6 in addition to this chapter to obtain a complete picture of the benefits and circumspect use of dialogic reading within and across cultural groups.

While the information presented in Chapter 6 is important in its own right, it is an essential read for professionals interested in implementing dialogic reading techniques with families from non-mainstream backgrounds. The author presents a wide variety of research findings, beginning with findings for middle-class European American families, followed by findings for families of Latino, African American, and Asian backgrounds. As stated by the author, this body of research suggests that professionals need to be judicious in applying dialogic reading techniques with families from other than middle-class European or American backgrounds. The author focuses her discussion of family literacy practices by examining differences in values and beliefs associated with belonging to 'collectivist' or 'individualist' cultural groups. The author suggests that open discussions about cultural differences in home literacy practices with families from non-mainstream cultural backgrounds who choose to anticipate in family literacy programs will likely avoid any inadvertent stereotyping or denigration of family values and beliefs that may differ from those advocated in dialogic reading.

The authors of Chapter 7 focus on ways to optimize preschoolers' vocabulary development through book sharing activities. They first describe the importance of enhancing vocabulary development in the preschool years for later language and school success. The authors point out that the potential of book sharing as a means to enhance vocabulary development requires more than just reading stories to children. To this end they describe and demonstrate five steps to build vocabulary during shared book reading. They conclude with suggestions on book choice, group size, type and number of strategies to use when focusing on vocabulary development. An appendix is provided which describes the planning of a shared book reading activity using a trade storybook in a preschool classroom.

Chapter 8 emphasizes the importance of fostering inferential language skills in preschoolers. This is not commonly targeted with this age group; however, the author makes a strong argument for targeting inferential language skills due to the crucial role such knowledge has in later higher level reading comprehension. The author re-examines data from cross-cultural studies looking for examples of parents fostering inferential language during shared book reading experiences. Considerable variability within and across cultural groups was found in how preschoolers were socialized to use inferential language. This is important information for professionals, as children are entering formal schooling differently prepared in an aspect of language use that is critical to school success and often is not systematically taught in the early grades. The chapter concludes with a description of a shared reading

intervention designed to fostering inferential language skills in a group of at-risk preschoolers.

Chapter 9 focuses on using stories to simultaneously improve narrative language skills and use of complex grammatical structures needed to produce narratives. The authors introduce an intervention approach to address both skills, which they call narrative-based language intervention (NBLI). The NBLI program can be administered individually or in small groups and is tailored to individual child needs. There are numerous examples of specific program elements provided within the chapter and appendix. Within each lesson there are opportunities for focused attention on specific grammatical structures after which children practice using that structure in a variety of narrative contexts. This chapter offers professionals a view into the evolution of applying research evidence to real world clinical or classroom settings as the authors have described the changes they have made to the program since the original conception.

Sharing Books and Stories to Promote Language and Literacy (a volume in the Emergent and Early Literacy Series) would be a valuable resource for professionals who are not able to access research journals and are interested in applying empirical research findings into practice. The volume has been written with audience in mind and fulfills that goal. For professionals interested in 'evidenced-based practice' this volume provides a plethora of examples on how to take research evidence and apply it to real world settings and the evolution of such endeavors. This volume would also be a valuable resource for pre-service teachers and speech-language pathology students. Additionally, the editor points to several areas where additional research is needed, often with specific suggestions. Thus, the volume may support students in choosing a line of research for a thesis or capping project.

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The Canadian Association of Speech-Language Pathologists and Audiologists
Position Paper on Dysphagia in Adults

Position:

It is the position of the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) that speech-language pathologists (S-LPs) contribute specific expertise in the clinical and instrumental assessment of oropharyngeal swallowing function, including laryngeal behaviours associated with swallowing, and in the development and execution of management and treatment programs for the remediation or compensation of oropharyngeal swallowing disorders. Adults with dysphagia are best served when speech-language pathologists are part of a multi-disciplinary team, where each member of the team provides unique and valuable contributions based on their particular knowledge and training. Due to the nature of their academic and clinical training, S-LPs are equipped to play a leading role on the multidisciplinary dysphagia team.

A survey of CASLPA members practicing in the area of dysphagia was conducted during the preparation of this position paper. The S-LPs who responded to the survey reported that S-LPs are currently the professional most frequently responsible for clinical bedside swallowing assessments, videofluoroscopy and dysphagia intervention in their workplaces. CASLPA members are encouraged to seek constructive opportunities to discuss and to clearly delineate the roles of all members of the dysphagia team, in order to promote effective collaborative team functioning and optimal patient care.

CASLPA members are required to abide by the CASLPA code of ethics and to follow provincial/territorial regulatory practice guidelines where established and mandated by legislation.

Definitions:

Dysphagia (swallowing impairment) is a complex medical condition with potentially serious consequences including malnutrition, dehydration, airway obstruction and pneumonia, reduced rehabilitative potential, quality of life and social isolation. Dysphagia in itself is not a disease but is a common symptom in diseases or injuries affecting the brain or nervous system (e.g. Parkinson's disease, amyotrophic lateral sclerosis, stroke, spinal cord injury), as well as in medical conditions resulting in structural / mechanical changes to the face, jaw, mouth, tongue or neck (e.g. cancer, surgery and sarcopenia). Dysphagia may also be present in children with delayed or disordered development (e.g. cerebral palsy, autism). This paper addresses dysphagia practice with adults only.

Novice Clinicians refers to S-LPs who are entering practice or changing their clinical practice focus.

The clinical (bedside) swallowing assessment is a comprehensive non-instrumental assessment of oropharyngeal swallowing function. This assessment begins with a review of medical history including medication use, consideration of patient/ caregiver reports and determination of any cognitive/behavioural factors that may impact swallowing. The assessment continues with evaluation of the structural integrity and function of the oral motor, laryngeal and, respiratory systems in both speech and swallowing tasks. The examination of swallowing function, including a determination regarding the adequacy of airway protection, is carried out using a variety of stimuli.

The videofluoroscopic swallowing study (VFSS) is a dynamic radiographic study.involving the administration under videofluoroscopy of food and/or fluids prepared with radio-opaque contrast media to study the safety and efficiency of the swallow. Bolus flow through the oral cavity, pharynx, and cervical-esophagus is imaged during swallowing, so that anatomic and/or physiologic abnormalities can be identified. The effects of modifications in bolus size, bolus texture, patient positioning, compensatory manoeuvres, and sensory enhancement techniques are evaluated to determine optimal swallow safety and efficiency (ASHA, 2004b).

The Flexible Endoscopic Examination of Swallowing (FEES®) involves the use of flexible nasoendoscopy during food/fluid presentations to evaluate the integrity of the pharyngeal stage of swallowing and determine recommendations regarding the adequacy of the swallow, the advisability of oral feeding, and the use of appropriate interventions to facilitate safe and efficient swallowing (ASHA, 2004c).

Rationale:

Canadian university programs in speech-language pathology provide extensive course work at the Masters level. Studies include head and neck anatomy, speech and voice physiology and neurophysiology; structural changes associated with congenital malformations or surgical treatment of oral, pharyngeal and laryngeal cancer; the relationship between motor speech disorders (dysarthria and apraxia) and swallowing function; the effects of neurological disease or injury on oral/pharyngeal/laryngeal/ respiratory function; the coordination of swallowing, respiration and phonation; principles of evidence-based practice; critical appraisal of the scientific literature; and assessment and intervention planning skills. Clinical hours in the area of dysphagia are a requirement for graduation from every Canadian S-LP university program.

Educational Recommendations

Academic and practicum recommendations are provided as a guideline, recognizing that individual academic institutions and instructors are likely to find different ways of delivering similar content within their specific courses. A minimum of one semester course in dysphagia is recommended, in addition to relevant content covered elsewhere in the curriculum in the areas of neuroanatomy for speech pathology, speech physiology, voice disorders, motor speech disorders and structurally related disorders. Within the course content on swallowing, it is recommended that classroom instruction address the topics of radiation protection and awareness, infection control, and ethical decision-making regarding swallowing at the end of life. Students should also acquire basic competency in interpreting videofluoroscopic swallowing examination recordings, making appropriate recommendations, including compensatory strategies and rehabilitative techniques. Inclusion of inter-professional course content that will nurture the appreciation of and respect for the roles of a variety of different professions on the multidisciplinary dysphagia team is recommended.

CASLPA's certification program currently requires candidates to complete a minimum of 10 supervised clinical hours in the area of dysphagia. As a foundation for competency development, it is recommended that novice clinicians obtain direct supervision and mentorship from experienced dysphagia clinicians during the performance of clinical (bedside) swallowing assessments, instrumental swallowing examinations (either videofluoroscopic and/or endoscopic), assessment analysis and interpretation, goal development and treatment sessions. For each dysphagia service component where competency development is needed, it is recommended that mentorship from an experienced clinician continue for a minimum of 10 cases or longer, until both parties concur that the mentee is competent to proceed independently. Beyond this mentorship, it is recommended that clinicians consider the percentage of their caseload that involves swallowing disorders when determining how much of their continuing education activities should be dedicated to the topic area of dysphagia.

Recommendations for Practice:

Dysphagia is prevalent in a number of medical conditions. Given the potential for dysphagia to result in serious negative sequelae, it is essential that clinical signs and symptoms of dysphagia are recognized promptly and that patients with dysphagia be referred for assessment and management. Swallowing screening has been recommended as a process for facilitating prompt identification and timely referral of patients by such organizations as the Heart and Stroke Foundation of Canada. However, the literature does not support any one method of screening as being highly sensitive and specific for dysphagia (Martino, Pron, & Diamant, 2000; Perry & Love, 2001). Swallowing screening will usually be performed by other members of the health-care team and serves as a means of identifying patients who require referral to a speech-language pathologist for comprehensive evaluation of oropharyngeal swallowing function. Speech-language pathologists are strongly encouraged to lead in the design of screening processes, and should be involved in training other health care professionals to perform specific procedures that will identify clinical signs suggesting a need for subsequent speech-language pathology referral. A screening does not constitute an adequate means of assessing oropharyngeal swallowing function and is not sufficient to form the basis for intervention planning. Considerable risk of harm may result when interventions are recommended on the basis of cursory screening rather than comprehensive swallowing assessment.

The evaluation of oropharyngeal swallowing function may be performed with or without instrumentation and begins with the clinical (beside) swallowing assessment. When additional information regarding the anatomy and physiology of the oropharyngeal swallowing mechanism is desired, an instrumental assessment may be performed The videofluoroscopic swallowing examination and the Flexible Endoscopic Examination of Swallowing (FEES®) are both instrumental procedures that involve risk of harm to the patient, and must therefore be performed by adequately trained and competent personnel.

A speech-language pathologist should not perform videofluoroscopy independently. It is strongly preferred that a radiologist be present during videofluoroscopy. It is recognized, however, that there is an increasing trend for videofluoroscopies to be performed collaboratively between a radiology technologist and the speech-language pathologist, without a radiologist present. In this model, it is strongly advised that S-LPs request the input of a radiologist regarding the identification and documentation of any suspected anatomical or esophageal abnormalities. The interpretation of videofluoroscopy is a challenging task that is subject to considerable variability across clinicians (Ekberg et al., 1988; Kuhlemeier, Yates, & Palmer, 1998 1998; Ott, 1998; Stoeckli, Thierry, Huisman, & Seifert, 2003 & Martin-Harris, 2003). Training, practice, and discussion across clinicians are reported to improve inter-rater agreement (Logemann, Lazarus, Keeley, Sanchez, & Rademaker, 2000 Sanchez, & Rademaker, 2000). It is recommended that novice clinicians pursue opportunities for mentorship and regular practice in the interpretation of videofluoroscopic swallowing examinations. As a means to promote excellence and inter-rater agreement in the interpretation of videofluoroscopy, all videofluoroscopic examinations should be recorded for playback using a video or digital recording device. Videofluoroscopies should be recorded at standard temporal resolution (i.e., 30 frames per second). Experts in the field generally concur that compression of the video archive to fewer frames may delete important information.

Insertion of an endoscope is an activity reserved for physicians or clinicians who have been trained and delegated to perform this procedure. It is recommended that S-LPs receive advanced training prior to seeking privileges to perform the Flexible Endoscopic Examination of Swallowing (FEES®) independently. As with videofluoroscopy, the interpretation of FEES® is subject to inter-rater variability; it is therefore recommended that FEES® examinations also be recorded for playback.

Dysphagia as an area of clinical practice for speech-language pathologists can be traced back to the 1970s and the subsequent publication of the first edition of Logemann's seminal textbook on the subject in 1983 (Logemann, 1997). In recognition of this rapidly emerging area of practice, CASLPA published its first position paper on the topic of dysphagia in 1995 (Canadian Association of Speech-Language Pathologists and Audiologists, 1995). In 1998, dysphagia sections were added to CASLPA's Scope of Practice in Speech-Language Pathology and Audiology in Canada; to the document Assessing and Certifying Clinical Competency: Foundations of Practice for Audiologists and Speech-Language Pathologists in 1999 and to the national certification examination in 1999. The Foundations document outlines the knowledge and competency expectations for Canadian speech-language pathologists working in the area of dysphagia, as well as the components of swallowing service delivery. Recent annual CASLPA membership surveys have shown strong interest in the development of a new dysphagia position paper. Consequently, a nationally representative committee of clinicians who work in the area of dysphagia was formed in September, 2005 with this mandate. The committee undertook two major activities: an extensive review of existing dysphagia documents and guidelines and a survey of CASLPA speech-language pathologists working in the area of dysphagia. The review revealed that several other organizations have undertaken to develop clinical practice guidelines for dysphagia (see Appendix 1). The position paper committee conducted an evaluation of the methodological quality of existing published guidelines using the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (AGREE Collaboration, 2001), and achieved consensus that the Scottish Intercollegiate Guidelines Network (SIGN) document for dysphagia secondary to stroke (2004) scored favourably. However, members are cautioned that generalizing any guideline to other clinical populations may be inappropriate (albeit that evidence to guide practice with those populations may not be readily available). Evidence-based guidelines do not typically speak to the role of a particular profession in clinical service delivery. The survey of Canadian speech-language pathologists was conducted to learn more about the current Canadian dysphagia practice context, including issues and challenges faced by clinicians providing dysphagia services. Additional details regarding the survey will be reported elsewhere.

The members of the dysphagia position paper committee were:

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Information for Contributors

The Canadian Journal of Speech-Language Pathology and Audiology (CJSLPA) welcomes submissions of scholarly manuscripts related to human communication and its disorders broadly defined. This includes submissions relating to normal and disordered processes of speech, language, and hearing. Manuscripts that have not been published previously are invited in English and French. Manuscripts may be tutorial, theoretical, integrative, practical, pedagogic, or empirical. All manuscripts will be evaluated on the basis of the timeliness, importance, and applicability of the submission to the interests of speech–language pathology and audiology as professions, and to communication sciences and disorders as a discipline. Consequently, all manuscripts are assessed in relation to the potential impact of the work on improving our understanding of human communication and its disorders. All categories of manuscripts submitted will undergo peer-review to determine the suitability of the submission for publication in CJSLPA. The Journal recently has established multiple categories of manuscript submission that will permit the broadest opportunity for disseminaion of information related to human communication and its disorders. New categories for manuscript submission include:

Tutorials. Review articles, treatises, or position papers that address a specific topic within either a theoretical or clinical framework.

Articles. Traditional manuscripts addressing applied or basic experimental research on issues related to speech, language, and/or hearing with human participants or animals.

Clinical Reports. Reports of new clinical procedures, protocols, or methods with specific focus on direct application to identification, assessment and/or treatment concerns in speech, language, and/or hearing.

Brief Reports. Similar to research notes, brief communications concerning preliminary findings, either clinical or experimental (applied or basic), that may lead to additional and more comprehensive study in the future. These reports are typically based on small "*n*" or pilot studies and must address disordered participant populations.

Research Notes. Brief communications that focus on experimental work conducted in laboratory settings. These reports will typically address methodological concerns and/or modifications of existing tools or instruments with either normal or disordered populations.

Field Reports. Reports that outline the provision of services that are conducted in unique, atypical, or nonstandard settings; manuscripts in this category may include screening, assessment, and/or treatment reports.

Letters to the Editor. A forum for presentation of scholarly/clinical differences of opinion concerning work previously published in the Journal. Letters to the Editor may influence our thinking about design considerations, methodological confounds, data analysis and/or data interpretation, etc. As with other categories of submissions, this communication forum is contingent upon peer-review. However, in contrast to other categories of submission, rebuttal from the author(s) will be solicited upon acceptance of a letter to the editor.

Submission of Manuscripts

Contributors should send a file containing the manuscript, including all tables, figures or illustrations, and references in MS word or WordPerfect format via e-mail to the Editor at: phyllis.schneider@ualberta.ca. Sending manuscripts by e-mail is the preferred method of submission. However, manuscripts may still be submitted by sending five (5) hard copies to:

Phyllis Schneider, PhD
Editor, CJSLPA
Dept. of Speech Pathology and Audiology
University of Alberta
2-70 Corbett Hall
Edmonton, AB T6G 2G4

Along with copies of the manuscript, a cover letter indicating that the manuscript is being submitted for publication consideration should be included. The cover letter must explicitly state that the manuscript is original work, that has not been published previously, and that it is not currently under review elsewhere. Manuscripts are received and peer-reviewed contingent upon this understanding. The author(s) must also provide appropriate confirmation that work conducted with humans or animals has received ethical review and approval. Failure to provide information on ethical approval will delay the review process. Finally, the cover letter should also indicate the category of submission (i.e., tutorial, clinical report, etc.). If the editorial staff determines that the manuscript should be considered within another category, the contact author will be notified.

All submissions should conform to the publication guidelines of the Publication Manual of the American Psychological Association (APA), 5th Edition. A confirmation of receipt for all manuscripts will be provided to the contact author prior to distribution for peer review. CJSLPA seeks to conduct the review process and respond to authors regarding the outcome of the review within 90 days of receipt. If a manuscript is judged as suitable for publication in CJSLPA, authors will have 30 days to make necessary revisions prior to a secondary review.

The author is responsible for all statements made in his or her manuscript, including changes made by the editorial and/or production staff. Upon final acceptance of a manuscript and immediately prior to publication, the contact author will be permitted to review galley proofs and verify its content to the publication office within 72 hours of receipt of galley proofs.

Organization of the Manuscript

All copies should be typed, double-spaced, with a standard typeface (12 point, noncompressed font) on high quality 8 ½ X 11 paper. All margins should be at least one (1) inch. An original and four (copies) of the manuscript should be submitted directly to the Editor. Author identification for the review process is optional; if blind-review is desired, three (3) of the copies should be prepared accordingly (cover page and acknowledgments blinded). Responsibility for removing all potential identifying information rests solely with the author(s). All manuscripts should be prepared according to APA guidelines. This manual is available from most university bookstores or is accessible via commercial bookstores. Generally, the following sections should be submitted in the order specified.

Title Page: This page should include the full title of the manuscript, the full names of the author(s) with academic degrees, each author's affiliation, and a complete mailing address for the contact author. An electronic mail address also is recommended.

Abstract: On a separate sheet of paper, a brief yet informative abstract that does not exceed one page is required. The abstract should include the purpose of the work along with pertinent information relative to the specific manuscript category for which it was submitted.

Key Words: Following the abstract and on the same page, the author(s) should supply a list of key words for indexing purposes.

Tables: Each table included in the manuscript must be typewritten and double-spaced on a separate sheet of paper. Tables should be numbered consecutively beginning with Table 1. Each table must have a descriptive caption. Tables should serve to expand the information provided in the text of the manuscript, not to duplicate information.

Illustrations: All illustrations included as part of the manuscript must be included with each copy of the manuscript. All manuscripts must have clear copies of all illustrations for the review process. High resolution (at least 300 dpi) files in any of the following formats must be submitted for each graphic and image: JPEG, TIFF, AI, PSD, GIF, EPS or PDF. For other types of computerized illustrations, it is recommended that CJSLPA production staff be consulted prior to preparation and submission of the manuscript and associated figures/illustrations.

Legends for Illustrations: Legends for all figures and illustrations should be typewritten (double-spaced) on a separate sheet of paper with numbers corresponding to the order in which figures/illustrations appear in the manuscript.

Page Numbering and Running Head: The text of the manuscript should be prepared with each page numbered, including tables, figures/illustrations, references, and if appropriate, appendices. A short (30 characters or less) descriptive running title should appear at the top right hand margin of each page of the manuscript.

Acknowledgments: Acknowledgments should be typewritten (double-spaced) on a separate sheet of paper. Appropriate acknowledgment for any type of sponsorship, donations, grants, technical assistance, and to professional colleagues who contributed to the work, but are not listed as authors, should be noted.

References: References are to be listed consecutively in alphabetical order, then chronologically for each author. Authors should consult the APA publication manual (4th Edition) for methods of citing varied sources of information. Journal names and appropriate volume number should be spelled out and italicized. All literature, tests and assessment tools, and standards (ANSI and ISO) must be listed in the references. All references should be double-spaced.

Potential Conflicts of Interest and Dual Commitment

As part of the submission process, the author(s) must explicitly identify if any potential conflict of interest, or dual commitment, exists relative to the manuscript and its author(s). Such disclosure is requested so as to inform C JSLPA that the author or authors have the potential to benefit from publication of the manuscript. Such benefits may be either direct or indirect and may involve financial and/or other nonfinancial benefit(s) to the author(s). Disclosure of potential conflicts of interest or dual commitment may be provided to editorial consultants if it is believed that such a conflict of interest or dual commitment may have had the potential to influence the information provided in the submission or compromise the design, conduct, data collection or analysis, and/or interpretation of the data obtained and reported in the manuscript submitted for review. If the manuscript is accepted for publication, editorial acknowledgement of such potential conflict of interest or dual commitment may occur when publication occurs.

Participants in Research Humans and Animals

Each manuscript submitted to CJSLPA for peer-review that is based on work conducted with humans or animals must acknowledge appropriate ethical approval. In instances where humans or animals have been used for research, a statement indicating that the research was approved by an institutional review board or other appropriate ethical evaluation body or agency must clearly appear along with the name and affiliation of the research ethics and the ethical approval number. The review process will not begin until this information is formally provided to the Editor.

Similar to research involving human participants, CJSLPA requires that work conducted with animals state that such work has met with ethical evaluation and approval. This includes identification of the name and affiliation of the research ethics evaluation body or agency and the ethical approval number. A statement that all research animals were used and cared for in an established and ethically approved manner is also required. The review process will not begin until this information is formally provided to the Editor.

Renseignements à l'intention des collaborateurs

La Revue canadienne d'orthophonie et d'audiologie (RCOA) est heureuse de se voir soumettre des manuscrits de recherche portant sur la communication humaine et sur les troubles qui s'y rapportent, dans leur sens large. Cela comprend les manuscrits portant sur les processus normaux et désordonnés de la parole, du langage et de l'audition. Nous recherchons des manuscrits qui n'ont jamais été publiés, en français ou en anglais. Les manuscrits peuvent être tutoriels, théoriques, synthétiques, pratiques, pédagogiques ou empiriques. Tous les manuscrits seront évalués en fonction de leur signification, de leur opportunité et de leur applicabilité aux intérêts de l'orthophonie et de l'audiologie comme professions, et aux sciences et aux troubles de la communication en tant que disciplines. Par conséquent, tous les manuscrits sont évalués en fonction de leur incidence possible sur l'amélioration de notre compréhension de la communication humaine et des troubles qui s'y rapportent. Peu importe la catégorie, tous les manuscrits présentés seront soumis à une révision par des collègues afin de déterminer s'ils peuvent être publiés dans la RCOA. La Revue a récemment établi plusieurs catégories de manuscrits afin de permettre la meilleure diffusion possible de l'information portant sur la communication humaine et les troubles s'y rapportant. Les nouvelles catégories de manuscrits comprennent :

Tutoriels : Rapports de synthèse, traités ou exposés de position portant sur un sujet particulier dans un cadre théorique ou clinique.

Articles : Manuscrits conventionnels traitant de recherche appliquée ou expérimentale de base sur les questions se rapportant à la parole, au langage ou à l'audition et faisant intervenir des participants humains ou animaux.

Comptes rendus cliniques : Comptes rendus de nouvelles procédures ou méthodes ou de nouveaux protocoles cliniques portant particulièrement sur une application directe par rapport aux questions d'identification, d'évaluation et de traitement relativement à la parole, au langage et à l'audition.

Comptes rendus sommaires : Semblables aux notes de recherche, brèves communications portant sur des conclusions préliminaires, soit cliniques soit expérimentales (appliquées ou fondamentales), pouvant mener à une étude plus poussée dans l'avenir. Ces comptes rendus se fondent typiquement sur des études à petit « *n* » ou pilotes et doivent traiter de populations désordonnées.

Notes de recherche : Brèves communications traitant spécifiquement de travaux expérimentaux menés en laboratoire. Ces comptes rendus portent typiquement sur des questions de méthodologie ou des modifications apportées à des outils existants utilisés auprès de populations normales ou désordonnées.

Comptes rendus d'expérience : Comptes rendus décrivant sommairement la prestation de services offerts en situations uniques, atypiques ou particulières; les manuscrits de cette catégorie peuvent comprendre des comptes rendus de dépistage, d'évaluation ou de traitement.

Courrier des lecteurs : Forum de présentation de divergences de vues scientifiques ou cliniques concernant des ouvrages déjà publiés dans la Revue. Le Courrier des lecteurs peut avoir un effet sur notre façon de penser par rapport aux facteurs de conception, aux confusions méthodologiques, à l'analyse ou l'interprétation des données, etc. Comme c'est le cas pour d'autres catégories de présentation, ce forum de communication est soumis à une révision par des collègues. Cependant, contrairement aux autres catégories, on recherchera la réaction des auteurs sur acceptation d'une lettre.

Présentation de manuscrits

On demande aux collaborateurs de faire parvenir par voie électronique un fichier électronique incluant leurs manuscrits, y compris tous les tableaux, figures ou illustrations et références, en format MS Word ou WordPerfect à : phyllis.schneider@ualberta.ca. L'envoie des manuscrits par voie électronique est la méthode préférée pour la soumission, pourtant les manuscrits peuvent toujours être soumis en envoyant 5 copies imprimées à:

Phyllis Schneider, Ph.D.
Rédactrice en chef, Revue canadienne d'orthophonie
et d'audiologie
Dept. of Speech Pathology and Audiology
University of Alberta
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On doit joindre aux exemplaires du manuscrit une lettre d'envoi qui indiquera que le manuscrit est présenté en vue de sa publication. La lettre d'envoi doit préciser que le manuscrit est une œuvre originale, qu'il n'a pas déjà été publié et qu'il ne fait pas actuellement l'objet d'un autre examen en vue d'être publié. Les manuscrits sont reçus et examinés sur acceptation de ces conditions. L'auteur (les auteurs) doit (doivent) aussi fournir une attestation en bonne et due forme que toute recherche impliquant des êtres humains ou des animaux a fait l'objet de l'agrément d'un comité de révision déontologique. L'absence d'un tel agrément retardera le processus de révision. Enfin, la lettre d'envoi doit également préciser la catégorie de la présentation (i.e. tutoriel, rapport clinique, etc.). Si l'équipe d'examen juge que le manuscrit devrait passer sous une autre catégorie, l'auteur-contact en sera avisé.

Toutes les présentations doivent se conformer aux lignes de conduite présentées dans le publication *Manual of the American Psychological Association (APA)*, 5th Edition. Un accusé de réception de chaque manuscrit sera envoyé à l'auteur-contact avant la distribution des exemplaires en vue de la révision. La *RCOA* cherche à effectuer cette révision et à informer les auteurs des résultats de cette révision dans les 90 jours de la réception. Lorsqu'on juge que le manuscrit convient à la *RCOA*, on donnera 30 jours aux auteurs pour effectuer les changements nécessaires avant l'examen secondaire.

L'auteur est responsable de toutes les affirmations formulées dans son manuscrit, y compris toutes les modifications effectuées par les rédacteurs et réviseurs. Sur acceptation définitive du manuscrit et immédiatement avant sa publication, on donnera l'occasion à l'auteur-contact de revoir les épreuves et il devra signifier la vérification du contenu dans les 72 heures suivant réception de ces épreuves.

Organisation du manuscrit

Tous les textes doivent être dactylographiés à double interligne, en caractère standard (police de caractères 12 points, non comprimée) et sur papier 8 ½" X 11" de qualité. Toutes les marges doivent être d'au moins un (1) pouce. L'original et quatre (4) copies du manuscrit doivent être présentés directement au rédacteur en chef. L'identification de l'auteur est facultative pour le processus d'examen : si l'auteur souhaite ne pas être identifié à ce stade, il devra préparer trois (3) copies d'un manuscrit dont la page couverture et les remerciements seront voilés. Seuls les auteurs sont responsables de retirer toute information identificatrice éventuelle. Tous les manuscrits doivent être rédigés en conformité aux lignes de conduite de l'APA. Ce manuel est disponible dans la plupart des librairies universitaires et peut être commandé chez les libraires commerciaux. En général, les sections qui suivent doivent être présentées dans l'ordre chronologique précisé.

Page titre : Cette page doit contenir le titre complet du manuscrit, les noms complets des auteurs, y compris les diplômes et affiliations, et l'adresse complète de l'auteur-contact. Une adresse de courriel est également recommandée.

Abrégé : Sur une page distincte, produire un abrégé bref mais informateur ne dépassant pas une page. L'abrégé doit indiquer l'objet du travail ainsi que toute information pertinente portant sur la catégorie du manuscrit.

Mots clés : Immédiatement suivant l'abrégé et sur la même page, les auteurs doivent présenter une liste de mots clés aux fins de constitution d'un index.

Tableaux : Tous les tableaux compris dans un même manuscrit doivent être dactylographiés à double interligne sur une page distincte. Les tableaux doivent être numérotés consécutivement, en commençant par le Tableau 1. Chaque tableau doit être accompagné d'une légende et doit servir à compléter les renseignements fournis dans le texte du manuscrit plutôt qu'à reprendre l'information contenue dans le texte ou dans les tableaux.

Illustrations : Toutes les illustrations faisant partie du manuscrit doivent être incluses avec chaque exemplaire du manuscrit. Chaque manuscrit doit contenir des copies claires de toutes les illustrations pour le processus de révision. Il faut envoyer un fichier électronique pour chaque image et graphique en format JPEG, TIFF, AI, PSD, GIF, EPS ou PDF, compression minimale 300 ppp. Pour les autres types d'illustrations informatisées, il est recommandé de consulter le personnel de production de la RCOA avant la préparation et la présentation du manuscrit et des figures et illustrations s'y rattachant.

Légendes des illustrations : Les légendes accompagnant chaque figure et illustration doivent être dactylographiées à double interligne sur une feuille distincte et identifiées à l'aide d'un numéro qui correspond à la séquence de parution des figures et illustrations dans le manuscrit.

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Remerciements : Les remerciements doivent être dactylographiés à double interligne sur une feuille distincte. L'auteur doit reconnaître toute forme de parrainage, don, bourse ou d'aide technique, ainsi que tout collègue professionnel qui ont contribué à l'ouvrage mais qui n'est pas cité à titre d'auteur.

Références : Les références sont énumérées les unes après les autres, en ordre alphabétique, suivi de l'ordre chronologique sous le nom de chaque auteur. Les auteurs doivent consulter le manuel de l'APA (5ᵉ Édition) pour obtenir la façon exacte de rédiger une citation. Les noms de revues scientifiques et autres doivent être rédigés au long et imprimés en italiques. Tous les ouvrages, outils d'essais et d'évaluation ainsi que les normes (ANSI et ISO) doivent figurer dans la liste de références. Les références doivent être dactylographiées à double interligne.

Conflits d'intérêts possibles et engagement double

Dans le processus de présentation, les auteurs doivent déclarer clairement l'existence de tout conflit d'intérêts possibles ou engagement double relativement au manuscrit et de ses auteurs. Cette déclaration est nécessaire afin d'informer la RCOA que l'auteur ou les auteurs peuvent tirer avantage de la publication du manuscrit. Ces avantages pour les auteurs, directs ou indirects, peuvent être de nature financière ou non financière. La déclaration de conflit d'intérêts possibles ou d'engagement double peut être transmise à des conseillers en matière de publication lorsqu'on estime qu'un tel conflit d'intérêts ou engagement double aurait pu influencer l'information fournie dans la présentation ou compromettre la conception, la conduite, la collecte ou l'analyse des données, ou l'interprétation des données recueillies et présentées dans le manuscrit soumis à l'examen. Si le manuscrit est accepté en vue de sa publication, la rédaction se réserve le droit de reconnaître l'existence possible d'un tel conflit d'intérêts ou engagement double.

Participants à la recherche – êtres humains et animaux

Chaque manuscrit présenté à la RCOA en vue d'un examen par des pairs et qui se fonde sur une recherche effectuée avec la participation d'être humains ou d'animaux doit faire état d'un agrément déontologique approprié. Dans les cas où des êtres humains ou des animaux ont servi à des fins de recherche, on doit joindre une attestation indiquant que la recherche a été approuvée par un comité d'examen reconnu ou par tout autre organisme d'évaluation déontologique, comportant le nom et l'affiliation de l'éthique de recherche ainsi que le numéro de l'approbation. Le processus d'examen ne sera pas amorcé avant que cette information ne soit formellement fournie au rédacteur en chef.

Tout comme pour la recherche effectuée avec la participation d'êtres humains, la RCOA exige que toute recherche effectuée avec des animaux soit accompagnée d'une attestation à l'effet que cette recherche a été évaluée et approuvée par les autorités déontologiques compétentes. Cela comporte le nom et l'affiliation de l'organisme d'évaluation de l'éthique en recherche ainsi que le numéro de l'approbation correspondante. On exige également une attestation à l'effet que tous les animaux de recherche ont été utilisés et soignés d'une manière reconnue et éthique. Le processus d'examen ne sera pas amorcé avant que cette information ne soit formellement fournie au rédacteur en chef.

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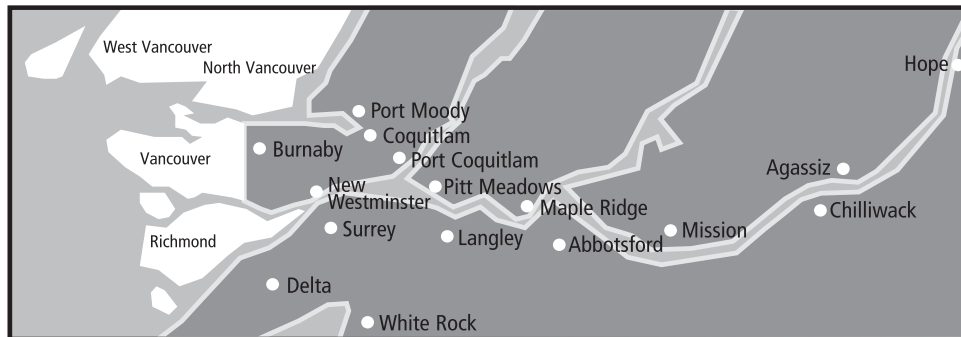
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DTHR CAREERS

Speech-Language Pathologist - Community
Wetaskiwin
Bulletin #07-REH-1170

The David Thompson Health Region is seeking a Speech-Language Pathologist to become an integral part of the Speech-Language Pathology team at the Wetaskiwin Community Health Centre. You will travel to schools in and around Wetaskiwin to provide speech-language assessment and intervention to a wide range of clients. This challenging role requires strong assessment, communication, organizational and problem-solving skills while working both independently and as part of a team. The successful candidate will possess a master's degree in speech-language pathology and must be registered with the Alberta College of Speech-Language Pathologists and Audiologists (ACSLPA). Work experience in a supervisory role is an asset. You must have a valid driver's licence and access to a reliable vehicle.
Hours of work: Regular full time position, Monday to Friday from 8:15 a.m. to 4:30 p.m.

Speech-Language Pathologist – Community
Red Deer
Bulletin #07-REH-1196

The David Thompson Health Region is seeking a Speech-Language Pathologist to become an integral part of the Speech-Language Pathology team based out of the 49th St. Community Health Centre. You will travel to schools in and around Red Deer to provide speech-language assessment and intervention to a wide range of clients. This challenging role requires strong assessment, communication, organizational and problem-solving skills while working both independently and as part of a team. The successful candidate will possess a master's degree in speech-language pathology and must be registered with the Alberta College of Speech-Language Pathologists and Audiologists (ACSLPA). Work experience in a supervisory role is an asset. You must have a valid driver's licence and access to a reliable vehicle.
Hours of work: Temporary full-time position until June 30, 2008, Monday to Friday from 8:30 a.m. to 4:45 p.m.

Speech-Language Pathologist
Red Deer Regional Hospital Centre
Bulletin #07-REH-1174

The David Thompson Health Region is seeking a Speech-Language Pathologist to become an integral part of the Speech-Language Pathology team at the Red Deer Regional Hospital Centre. You will travel to several communities around the health region to provide speech-language/dysphagia assessment and intervention to a wide range of clients. This challenging role requires strong assessment, communication, organizational and problem-solving skills while working both independently and as part of a team. The successful candidate will possess a master's degree in speech-language pathology and must be registered with the Alberta College of Speech-Language Pathologists and Audiologists (ACSLPA). Work experience in a supervisory role is an asset. You must have a valid driver's licence and access to a reliable vehicle.
Hours of work: Temporary full-time position starting November 1, 2007 until October 31, 2008, Monday to Friday from 8 a.m. to 4:15 p.m.

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