CANADIAN JOURNAL OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

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REVUE CANADIENNE D'ORTHOPHONIE ET D'AUDIOLOGIE

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The Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) is the only national body that supports and represents the professional needs of speech-language pathologists, audiologists and supportive personnel inclusively within one organization. Through this support, CASLPA champions the needs of people with communications disorders. The association was founded in 1964 and incorporated under federal charter in 1975. CASLPA's periodical publications program began 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.

The *Canadian Journal of Speech-Language Pathology and Audiology* is supported by a grant in Aid to Scholarly Journals, provided by the Canadian Social Sciences and Humanities Research Council (grant # 651-2008-0062), for the period January 2009 to December 2011.

CASLPA Vision and Mission

Vision

The Canadian Association of Speech-Language Pathologists and Audiologists ...the national voice and recognized resource for speech-language pathology and audiology.

Mission

The Canadian Association of Speech-Language Pathologists and Audiologists ...supporting and empowering our members to maximize the communication and hearing potential of the people of Canada.

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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

La Revue canadienne d'orthophonie et d'audiologie est appuyée par une subvention d'Aide aux revues savantes accordée par le Conseil de recherches en sciences humaines du Canada (subvention no. 651-2008-0062), pour la période de janvier 2009 à décembre 2011.

ACOA : VISION ET MISSION

Vision

L'Association canadienne des orthophonistes et audiologistes : porte-parole national et ressource reconnue dans le domaine de l'orthophonie et de l'audiologie.

Mission

L'Association canadienne des orthophonistes et audiologistes appuie et habilite ses membres en vue de maximiser le potentiel en communication et en audition de la population canadienne.

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Les articles et les archives de la RCOA sont maintenant disponibles au publique à www.cjslpa.ca

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Toutes les demandes visant à faire paraître de la publicité dans la RCOA doivent être adressées au Bureau national. L'acceptation d'une annonce publicitaire ne signifie absolument pas que l'ACOA fait la promotion du produit, du service ou de la compagnie. L'ACOA se réserve le droit de rejeter une annonce si le message, l'organisation, le produit ou le service n'est pas compatible avec la mission, la vision ou les valeurs de l'ACOA. L'ACOA n'assume pas la responsabilité de l'exactitude des déclarations des annonceurs.

Réviseurs de la RCOA 2011

Mridula Sharma, Dave Moore, Piers Dawes, Patricia Cleave, May Bernhardt, Megan Hodge, Tara Whitehill, Rodney Gabel, Kara Beck, Susan Felsenfeld, Tim Saltuklaroglu, Laura Plexico, Tony Leroux, Prudence Allan, Jessica Ball, Diane Pesco, Sharla Peltier, Carla Johnson, Catherine Dench, Suzanne Urbanczyk, Alexandra D'Arcy, Jill Weeres, Bradley McPherson, Margaret Cheesman, JB Orange, Guylaine Le Dorze, Isabelle Barrière, Pascal Lefebvre, Heather Clark, Gary McCullough, Johanna-Pascale Roy, Lucie Ménard, Andrea MacLeod, Pam Millett, Josée Lagacé, Mary Ann Evans, Rena Krakow, Michael Kiefte, Lorienne Jenstad, Linda Garcia, Chantal Laroche, Rachel Caissie, Liz Smith, Joanne Cleland.

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TABLE OF CONTENTS

TABLE DES MATIÈRES

From the Editor

SPRING ISSUE

As I start my role as the new editor of the Canadian Journal of Speech-Language Pathology and Audiology (CJSLPA), I would like to express my appreciation to the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) for having confidence in me, and for the opportunity to lead CJSLPA for the next three years. My experiences as author, reviewer, and past associate editor for CJSLPA have been very positive and have helped me feel somewhat at home with the journal and, hopefully, will also provide me with a useful foundation during my tenure as editor. I am grateful to Tim Bressman, our past editor, who has worked with me over the past few months to make this transition as seamless as possible for the journal's readership. I also appreciate that Tim will continue to work with the editorial team at CJSLPA for the next couple of months. I would like to thank Tim for a tremendous job over the past four years; we have seen CJSLPA flourish under his leadership and progress to the status of a full online journal, available to a broad international readership. As we move forward, this achievement should create much more exposure for our Canadian journal.

Following in Tim's footsteps is somewhat humbling but I know I will have the opportunity to work with a wonderful group of colleagues from across the country - individuals who are contributing their time and expertise to CJSLPA. With this issue, we welcome back Associate Editors, Andrea Macleod, Navid Shahnaz and Benoît Jutras and we say thank you to two Associate Editors, Vincent Gracco and Joël Macoir, who have completed their terms. I am pleased to welcome two new associate editors to the team. Michael Kiefte, who is a full professor in the School of Human Communication Disorders at Dalhousie University, will oversee submissions in English pertaining to "speech" and Louise Duchesne, an assistant professor at the Université du Québec à Trois-Rivières, will manage French submissions in speech and language. Glen Nowell and Candace Myers will be staying on the team for book reviews and material reviews, and resource reviews. In recent months, I have begun working with the publications team at CASLPA and am confident that, with their expertise and our fine editorial team, we will continue to be proud of our journal.

Now that the journal is fully online, I will be working with the publications team to move to a paperless online manuscript submission and review process. Therefore, we will receive and process all manuscripts in our electronic web-based system and invite all authors to submit their work at www.cjslpa.coverpage.ca. We would also like to invite all of our reviewers and new reviewers interested in providing their expertise to register with the web-based system. We are thankful to our many reviewers who help us maintain high standards of review in a timely manner.

Knowledge translation has become topical in recent years and one of the very finest ways to transfer knowledge is through the scientific review process. With online publishing, not only is the knowledge available to fellow researchers, practitioners, and students but also to the consumers of our services. A journal cannot exist without its authors; therefore, I encourage you to think of CJSLPA when considering avenues for translating your research and clinical findings. Let's take this opportunity to make CJSLPA an even higher quality source of information.

This spring issue is a fine example of what the authors who support CJSLPA have to offer; with topics covering diverse areas in speech, language, and hearing. The first paper, presented as a tutorial on 'Motivational Interviewing' (McFarlane), provides evidence and guidance relative to effective counseling and communication skills in clinical practice. (D'Souza et al.) shed light on the state of service delivery in speech-language pathology to clients from linguistically diverse milieus in Canada. The third paper (Barbara et al.) highlights the interdisciplinary interests in our field and reports on the accuracy of self-reported acute otitis media and the implications for medical research. The final paper in this issue (Bressman et al.) describes prosthodontic management of patients with hypernasality through a description of two cases. In this issue, Regina Jokel provides a book review of Mild Traumatic Brain Injury: Episodic Symptoms and Treatment, written by Richard J. Roberts and Mary Ann Roberts.

I look forward to working with the speech-language pathology and audiology community to continue making CJSLPA a successful scientific journal. I welcome your comments and ideas, your participation in the review process, and, very importantly, your manuscripts.

Elizabeth Fitzpatrick, Ph.D.
Editor
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Mot de la rédactrice en chef

NUMÉRO DE PRINTEMPS

Comme je débute mon rôle en tant que nouvelle rédactrice en chef de la Revue canadienne d'orthophonie et d'audiologie (RCOA), j'aimerais exprimer ma gratitude envers l'Association canadienne des orthophonistes et audiologistes (ACOA) de m'avoir accordé sa confiance et la chance de diriger la RCOA pour les trois prochaines années. Mes expériences en tant qu'auteure, lectrice critique et autrefois rédactrice en chef adjointe de la RCOA ont été très positives et m'ont aidée à me sentir relativement à l'aise avec la revue, et j'espère, me fourniront une fondation durant mon mandat de rédactrice en chef. Je suis également reconnaissante envers Tim Bressman, notre ancien rédacteur en chef, qui a travaillé avec moi au cours des derniers mois pour rendre la transition aussi harmonieuse que possible pour les lecteurs de la revue. Je suis heureuse que Tim continuera à travailler avec l'équipe de rédaction de la RCOA pendant les prochains mois. J'aimerais remercier Tim pour son travail remarquable au cours des quatre dernières années; nous avons vu la RCOA s'épanouir sous sa direction et faire la transition pour devenir une revue entièrement en ligne et accessible par un large lectorat international. À mesure que nous avançons, cette réalisation devrait engendrer beaucoup plus de visibilité pour notre revue canadienne.

Il est un peu intimidant de prendre la relève de Tim, mais je sais que j'aurai la chance de travailler avec un merveilleux groupe de collègues de partout au pays – des personnes qui contribuent leur temps et leur expertise à la RCOA. Pour ce numéro, j'aimerais accueillir à nouveau les rédacteurs en chef adjoints, soit Andrea Macleod, Navid Shahnaz et Benoît Jutras, ainsi que remercier deux rédacteurs en chef adjoints qui ont terminé leur mandat, soit Vincent Gracco et Joël Macoir. Je suis également fière d'accueillir deux nouveaux rédacteurs en chef adjoints au sein de l'équipe. Michael Kiefte, qui est professeur titulaire à la School of Human Communication Disorders de la Dalhousie University, sera responsable des soumissions en anglais portant sur la parole, et Louise Duchesne, professeure adjointe à l'Université du Québec à Trois-Rivières, s'occupera des soumissions en français portant sur la parole et le langage. Glen Nowell et Candace Myers continueront leur travail au sein de l'équipe en tant que responsables de l'évaluation des ouvrages écrits et des ressources. J'ai commencé à travailler avec l'équipe des publications de l'ACOA il y a quelques mois, et je suis persuadée que, grâce à leur expertise et à notre excellente équipe de rédaction, vous pourrez continuer d'être fiers de votre revue.

Maintenant que la revue est entièrement en ligne, je vais collaborer avec l'équipe des publications pour faire la transition vers un processus de soumission de manuscrits et d'examen en ligne et sans papier. Par conséquent, nous recevrons et traiterons tous les manuscrits dans notre système électronique sur le Web, et nous invitons tous les auteurs à soumettre leurs ouvrages à www.cjslpa.coverpage.ca. Nous aimerions également inviter tous nos évaluateurs, ainsi que les nouveaux évaluateurs intéressés à partager leur expertise, à s'inscrire à l'aide de notre système sur le Web. Nous sommes reconnaissants envers nos nombreux évaluateurs, grâce à qui nous pouvons maintenir un niveau relevé de révision, et ce dans des délais favorables.

Le transfert des connaissances est devenu un sujet à la mode au cours des dernières années, et l'une des meilleures façons de transmettre des connaissances est le processus d'examen scientifique. Grâce à la publication en ligne, les connaissances sont non seulement accessibles par les autres chercheurs, les praticiens et les étudiants, mais également par les consommateurs de nos services. Une revue ne peut pas exister sans ses auteurs; je vous encourage donc à considérer la RCOA pour faire connaître vos résultats de recherche et cliniques. Profitons de l'occasion pour faire de la RCOA une source d'information de qualité supérieure.

Ce numéro du printemps est un excellent exemple de ce qu'ont à offrir les auteurs appuyant la RCOA; leurs sujets couvrent divers domaines de la parole, du langage et de l'audition. Le premier article, un tutoriel sur la « Technique d'entrevue motivationnelle » (McFarlane), présente des données probantes et des directives pour utiliser des habiletés efficaces de counseling et de communication en pratique clinique. D'Souza et al. ont mis en lumière l'ampleur de la prestation de services en orthophonie aux clients locuteurs de langues diverses au Canada. Le troisième article (Barbara et al.) démontre les intérêts interdisciplinaires dans notre domaine et fait rapport de la précision de l'autodéclaration d'otites moyennes aiguës, ainsi que des répercussions pour la recherche médicale. Le dernier article de ce numéro (Bressman et al.) illustre à l'aide de deux descriptions de cas la gestion de l'hypernasalité par le moyen de prothèses vélopalatines. Enfin, dans ce numéro, Regina Jokel offre une évaluation de l'ouvrage *Mild Traumatic Brain Injury:*

Episodic Symptoms and Treatment, rédigé par Richard J. Roberts et Mary Ann Roberts.

J'ai bien hâte de travailler avec les membres de la communauté de l'orthophonie et de l'audiologie pour que la RCOA continue d'être une revue scientifique fructueuse. Je vous invite à partager vos commentaires et vos idées, à participer au processus d'évaluation, et surtout, à nous transmettre vos manuscrits.

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Motivational Interviewing: Practical Strategies for Speech-Language Pathologists and Audiologists

Technique D'entrevue Motivationnelle : des Stratégies Pratiques pour les Orthophonistes et les Audiologistes

KEY WORDS
COMMUNICATION
COUNSELING
MOTIVATIONAL INTERVIEWING
CLIENT-CENTERED PRACTICE
SPEECH-LANGUAGE PATHOLOGY
AUDIOLOGY

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Abstract

Effective counseling and communication skills are essential in the disciplines of speech-language pathology and audiology, yet many clinicians receive limited exposure to counseling skills in their training programs or professional development opportunities. There have been advances in evidence-based counseling practices in rehabilitation settings. This tutorial will discuss Motivational Interviewing (MI), with specific focus on the disciplines of speech-language pathology and audiology. It will discuss the background and evidence supporting MI use, and provide guidance for basic techniques that can be implemented immediately into clinical practice. Resources for continued learning are also included.

Abrégé

Des habiletés efficaces en counseling et en communication sont essentielles pour les disciplines de l'orthophonie et de l'audiologie, mais de nombreux cliniciens ont une exposition limitée aux techniques de counseling lors de leurs programmes de formation ou de leurs activités de perfectionnement professionnel. Des progrès ont été réalisés en ce qui a trait aux pratiques de counseling fondées sur les données probantes en réadaptation. Ce tutoriel présentera une technique d'entrevue motivationnelle (Motivational Interviewing (MI)) et sera particulièrement axé sur les disciplines de l'orthophonie et de l'audiologie. Nous examinerons les antécédents de cette technique et les données probantes en appuyant l'utilisation, et nous présenterons des techniques de base pouvant être mises en oeuvre immédiatement dans la pratique clinique. Nous fournirons aussi des ressources pour poursuivre l'apprentissage.

MOTIVATIONAL INTERVIEWING TUTORIAL OUTLINE

"Why didn't I say that?" This question probably enters the minds of many clinicians as they reflect on their communication and counseling interactions with clients and their families. This question was also the title of a tutorial on counseling in speech-language pathology (Vargo & McFarlane, 1994). That document highlighted the importance of counseling skills in our professions, and lamented the lack of coursework on counseling provided by most training programs and the lack of confidence in counseling skills reported by clinicians (Culpepper, Mendel, & McCarthy, 1994). Unfortunately, the situation has not resolved; in a recent survey, 60% of clinicians in their clinical fellowship year in American programs reported that counseling was not an integral component of their graduate programs or clinical practica (Philips & Mendel, 2008). While the paucity of counseling training may not yet meet the need of our professions, there have been substantial advancements in evidence-based practice related to counseling. In a review of counseling theories and their application to rehabilitation counsellors, five criteria were identified as critical for application of counseling in rehabilitation (Olney, Gagne, White, Bennett & Evans, 2009). The approach should be: 1) goal-oriented, with a specific outcome targeted for the counseling interaction; 2) collaborative, with the client and clinician sharing decision-making; 3) client centered, as evidenced by skilled listening and clinician responses contingent on the client perspective; 4) brief, with the clinician using techniques that are effective in small doses; and 5) evidence based, with techniques that research has shown to be effective. This review of counseling theories concluded that one approach to counseling, Motivational Interviewing (MI), fit all five criteria (Olney et al., 2009).

This tutorial will provide an introduction to MI, with specific focus on the disciplines of speech-language pathology and audiology. It will discuss the background and evidence supporting MI use, and provide guidance for basic techniques that can be implemented immediately into clinical practice. Resources for continued learning are also included.

REFLECTION

Before providing the background and techniques of MI, it will be helpful for the reader to reflect on their typical communication patterns with clients. Appendix A contains three brief scenarios to assist with your initial reflections. Provide responses to those scenarios before continuing with this tutorial.

Responses to client statements like those in Appendix A typically fall into one of five categories: providing information, providing suggestions, asking questions, reflecting client comments or saying something "supportive". Categorize your responses within these categories. You may have used more than one category in each response. Identifying your typical response patterns will assist you in selecting goals for development as you proceed through this tutorial.

MI BACKGROUND

MI is defined by Miller and Rollnick (2002) as a "client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (p. 25). MI is a person-centered approach consistent with Rogers (1992) but includes goal-directed aspects also found in approaches like Solution-Focused Therapy and Cognitive-Behavioral Therapy (Olney et al., 2009). Unique to MI is an emphasis on recognizing, eliciting and supporting discussion of change with clients (change talk). MI has a philosophy, theoretical framework and a broad range of techniques to assist clinicians and counsellors in developing effective communication strategies to support clients through change.

The fundamental spirit of MI has three elements: collaboration, evocation and autonomy (Miller & Rollnick, 2002). *Collaboration* is a recognized component of patient-centered intervention. Collaborative interactions acknowledge that both participants have knowledge and perspectives to be considered. Clinicians who are effective collaborators in their clinical interactions do not rely on their authority or expertise to influence client decisions. Instead, they are interested in client perspectives and work effectively to learn about those perspectives (Moyers, Martin, Mauel, Miller, & Ernst, 2010). *Evocation* represents the clinician's acknowledgement that reasons for change, and decision for change, resides with the client. The evocative clinician works skilfully to elicit and reinforce consideration of change and plans for change from the client. Finally, respect for the *autonomy* of the client is highlighted, along with the responsibility of the clinician to convey that autonomy. Clinicians who are skilled in conveying autonomy can not only acknowledge it, but expand their clients' perceptions of control and self-efficacy. When the spirit of MI is present, the techniques of MI become part of a grounded and principled approach.

MI was originally developed for addictions counseling (Rollnick & Miller, 1995). The evidence supporting its effectiveness in that context resulted in a rapid growth in use of MI and extensive application in a diverse range of settings and client types (Resnicow et al., 2002). MI approaches have expanded to such varied areas as cardiovascular health (Beckie, 2011; Brodie & Inoue, 2005), diabetes (West, DiLillo, Bursac, Gore, & Greene,

2007), diet (Brug et al., 2007), brain injury (Bombardier & Rimmele, 1999), and health promotion (Bennett, Lyons, Winters-Stone, Nail, & Scherer, 2007). MI has also been adapted to be an "add-on" to other healthcare services and for use by those whose primary role is not as counsellor, with research support for its effectiveness in these contexts (Dunn, Deroo, & Rivara, 2001).

Despite the varied uses and adaptations of MI, systematic reviews and meta-analyses have found positive outcomes resulting from its use. Rubak, Sandbok, Lauritzen and Christensen (2005) found a positive effect of MI in 74% of the randomized controlled trials included in their analysis. No negative effects were found. The most recent meta-analysis (Lundahl, Kunz, Bownell, Tollefson, & Burke, 2010) examined outcomes related to substance abuse, increasing "healthy" behaviours, risk reduction and measures of emotional health. They concluded that, "MI does exert small but significant positive effects across a wide range of problem domains, although it is more potent in some situations compared to others, and it does not work in all cases" (p. 151). In fact, either no effect, or a negative effect was noted in 25% of the studies reviewed. Examination of these results did not reveal any definite factors that may predict positive outcomes. Despite this, the authors supported the use of MI in health care and concluded that MI may be more "cost effective" as it is typically more efficient and its effects are found over a shorter treatment period than other interventions (Lundahl et al., 2010). Results also indicated that the format of MI delivery, whether it was used alone or as part of another health program, did not appear to affect results (Lundahl et al., 2010).

MI has evidence supporting its use in a variety of clinical settings and can be included within other rehabilitation programs. Although there are few reports of its use in communication disorders (Behrman, 2006), its adaptability and categorization as goal oriented, collaborative, client-centered, brief, and evidence-based make it a good fit for speech-language pathologists (S-LPs) and audiologists.

APPLICATIONS RELEVANT TO SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

Medley and Powell (2010) suggest that MI can be used throughout the rehabilitation process to encourage a "therapeutic alliance", facilitate goal setting and encourage engagement in therapy. One or all of these purposes will be part of any service provided by S-LP s and audiologists. Examples of applications to clients typically served by S-LP s and audiologists are presented below.

MI's application to services for those with traumatic brain injury (TBI) has been explored by several authors (Bell et al., 2004; Giles & Manchester, 2006; Medley & Powell, 2010). It has been effective in ameliorating the lack of engagement in rehabilitation common in treatment of individuals with brain injury and other areas of deficit (Medley & Powell, 2010). One application of MI for TBI clients was use of telephone interventions using MI techniques as part of follow up for clients. The telephone interviews occurred six times over a nine-month period beginning soon after the TBI and resulted in significantly less depression in those that received the intervention (Bombardier et al., 2009).

A similar result was found in a randomized control trial providing MI sessions to stroke survivors to assist them in adjustment (Watkins, et al., 2007). Clients were provided with up to four individual MI sessions, 30-60 minutes in length. Measures taken three months post-stroke indicated that MI had a positive effect on "mood". Researchers also reported a "protective effect" of MI against depression.

Behrman (2006) explored applications of MI in voice therapy. MI was proposed as a supplement to a voice therapy program, and used throughout intervention to assist with treatment adherence. Initial results indicate that MI "holds promise as an approach to address patient adherence to vocal behavioural change" (Behrman, 2006, p. 215).

Many S-LPs and audiologists work extensively with children and their families. Although there are no studies of MI use in pediatric practice in these disciplines, there have been reports and studies from other health care providers. MI has been used in programs providing support and education to parents of children with health or psychosocial needs (Gance-Cleveland, 2007). Its use in parent education contexts supports a move from the education and persuasion typical of an expert approach towards a more family-centered approach with a focus on supported problem-solving. Ingoldsby (2010) reviewed methods for supporting family engagement and retention in mental health programs for their children. They reported good outcomes from programs utilizing MI as measured by improved motivation and greater attendance at education sessions. Sindelar, Abrantes, Hart, Lewander and Spirito (2004) also reviewed MI use in pediatric settings and concluded that MI supported current patient-centered approaches to healthcare and was an appropriate method for use by pediatricians and other health providers.

Evidence from a variety of settings supports the use of MI by non-counsellors as a part of their rehabilitation or educational services. Miller and Rollnick (2002) emphasize that effective application of MI requires an understanding of the substance of the approach, not

just mechanical application of specific techniques. The substance includes the general principles presented in the next section.

MI PRINCIPLES

MI is more than just a collection of techniques. The essence of MI is described through four guiding principles that are used to encourage active participation in change: express empathy, develop discrepancy, roll with resistance and support self-efficacy (Miller & Rollnick, 2002).

Express Empathy

Empathy is a key concept in helping professions and is emphasized in humanistic approaches to counseling (Miller & Rollnick, 2002; Luterman, 2008). The expression of empathy is accomplished through reflective listening where the clinician "clarifies and amplifies the person's own experiencing and meaning" (Miller & Rollnick, 2002, p. 7). The deliberate use of reflective listening to develop and communicate accurate empathy is an approach used throughout MI as the foundation on which other principles and skills are layered. A sense of acceptance is essential to effective reflection and expression of empathy.

Develop Discrepancy

Although acceptance is a key concept in MI, it is also recognized that the client may need to make modifications to his/her behaviours or perspectives in order to make positive health choices. These modifications can be prompted when the clinician guides the client to see the discrepancies between his/her current behaviour and goals, and/or values. Discrepancy leads the client to verbalize reasons for change and methods for change.

Roll with Resistance

Informing and persuading are techniques often used in counseling interactions with clients. Unfortunately, those techniques reinforce the expert role of the clinician and can result in resistance from the client (Luterman, 2008). In fact, Miller and Rollnick (2002) suggest that resistance from the client is a signal for clinicians to change their communication techniques. Rolling with Resistance acknowledges that resistance is a natural part of the change process. Rather than persuading or educating, the clinician shows respect for the client and emphasizes their autonomy to reduce resistance. Discussion will then be focused on supported problem-solving. Careful listening and reflecting of resistant statements can lead to statements of need for changes and possible solutions.

Support Self-Efficacy

Self-efficacy in this context represents the client's confidence in their ability to make a change or follow through with a change plan. This belief is related to positive treatment outcomes (Miller & Rollnick, 2002), and is an essential component in the change process. In order to support self-efficacy, it is also important for the clinician to perceive the client as capable of change.

Application of MI involves layering specific communication skills and techniques onto a framework of MI spirit and general principles. Key skills for use are discussed below.

KEY SKILLS

The key skills in MI overlap with other counseling and communication frameworks. In fact, clinicians exposed to these skills often state, "I already do this." (Rosengren, 2009). The difference is that MI is an integrated, goal-oriented approach and guides skillful, strategic use of communication techniques to achieve specific therapeutic outcomes. The key skills of MI as presented by Miller and Rollnick (2002) are: Open Questions (O), Affirmations (A), Reflections (R), and Summaries (S). The acronym OARS is used to highlight the skills. As questioning is an overused strategy in S-LP (Luterman, 2008), and reflections are a fundamental skill of MI, this tutorial will emphasize reflections. The information shared below is from a compilation of sources including Miller and Rollnick (2002), Rosengren (2009) and the author's own experiences in clinical application of MI and MI instruction for students and clinicians.

The following scenario will be used to highlight some of the different types of open questions and reflections presented in this tutorial:

> Mary is the mother of a 3-year-old boy (Ryan) who has just been diagnosed with severe speech and language delay and suspected developmental delay. Ryan is also demonstrating aggression with other kids. The S-LP has recommended enrolment in an early education program, which would provide interdisciplinary preschool experience four days per week. She has also talked about service options within the community. Finally, she has recommended referrals for further testing with occupational therapy, physiotherapy and psychology. On a follow-up visit, Mary appears very upset and says the following:
>
> > *"I've talked with my family about this and they think we should just wait a bit and see if he gets better on his own. My husband and parents were really upset that we were "labelling" Ryan. I can definitely see that he is behind other kids, but they just don't think it's that bad. I am really frustrated by his speech and I know he is frustrated that he can't tell us what he wants but I guess*

we will just have to be more patient and let him grow out of this."

Open Questions (O)

Open questions are those which allow the client to determine the nature of the response; they set the stage for the client to provide information that is important to them. By contrast, a closed question narrows response choices and is typically used to gather factual information that is important to the clinician. For example, when asking a parent about their commitment to completing homework assignments the clinician could say, "How many times a week will you be able to practice?" (closed question), or "How might home practice fit into your family schedule?" (open question). Questioning is a communication strategy used often by S-LPs and audiologists to gather information during information-getting interviews. We can also use open questions to encourage clients to generate goals, rationale for change and strategies for change. With reflections, most clinicians could benefit from increasing the number that they use. With questions, it is not an increase in number that is the goal, rather a focus on using questions for new purposes. The following "tips for questions" will assist clinicians in using questions more effectively.

Don't ruin a perfectly good question. It is not unusual to see clinicians and students provide their client with a great open question, and then tag on a closed question. For example, "How does your family react when there is a difference of opinion in the family? Would it help if I explained things to them?", limits the possibility of getting a more complex answer from the client. The tag questions can still be used, but should be saved for follow-up after the client has had an opportunity to respond to the initial open question.

Use questions to set an agenda in a patient-centered way. Questions can be used to ensure that conversations are directed towards topics that the client perceives as most important. For example, rather than stating, "Today we are going to discuss ...", the clinician can say, "We have some time today to discuss your assessment, what things are most important for you to know?"

Combine reflections and questions. A combination of reflections and questions can be a very effective communication strategy. In this format, the clinician provides a reflection of the client statement and then uses a follow-up question to move the conversation in the direction of change. For example, in response to Mary, the clinician could use a reframing reflection with a follow-up question as follows: "You and your family need some more time to consider how intervention might fit into Ryan's education. What information would be helpful?"

Use hypothetical questions. Hypothetical questions can be used to encourage deep exploration and to guide the client to verbalize areas for change and reasons for change (Miller & Rollnick, 2002). They can also be used in conjunction with reflections. In response to Mary, a hypothetical question could be, "If Ryan doesn't grow out of it, what might the effects be on his education and relationships?" Other possible hypothetical questions that encourage consideration of change are presented in Table 1.

Table 1

Hypothetical question examples

"If you continue with things as they are, what do you think might happen?"
"If this pen were a magic wand and could change one thing (but couldn't change the fact that Ryan is having speech and behaviour difficulties), what one thing would you change?"
"If you were in my position, advising someone like you, what would you suggest?"
"If you decided to try an education program, what might some of the benefits be?"
"If you decided that education was something you wanted to try, what support would you need to get your family on-side?"

Use key questions. A "key" question in MI can be used to move from exploration of thoughts and ideas towards *change talk*. One example of a key question for the scenario with Mary might be, "You have a discrepancy between what you think is best for your son and the wishes of other members of your family (reflection). What now? (key question)". Other examples of key questions would be, "What will you do between now and the next time we meet?", and "What are the first steps in accomplishing your goals?".

"Tell me more." This is a generic statement that functions as an open question. It can be used by clinicians when they are having difficulty generating a more specific open question. It can also be used to keep the conversation moving forward while the clinician formulates a reflection for a challenging situation.

Affirmations (A)

Affirmations are genuine statements of appreciation and recognition of client skills. Affirmations are not just compliments. Compliments often connote that the speaker is evaluating and passing judgement. In contrast, affirmations represent factual statements that highlight

strengths in others. Examples of affirmations for Mary might be, "You are acknowledging the concerns of your family and continuing to consider what you think is best for Ryan; this is a difficult task." Or "You really care about your son and are taking this decision very seriously." In MI, affirmations can be used to increase the client's sense of self-efficacy, which is an important condition for change.

Reflections (R)

Reflections are a key element of expressing empathy. Reflections convey to clients that they have been listened to, which facilitates a therapeutic alliance. Reflections are included in many communication enhancement approaches, but are very difficult to do well. An awareness of the various types of reflections and their uses will assist clinicians in using a variety of reflections effectively. Target levels for the ratio of reflections to questions is 1 to 1 for beginning proficiency and two reflections to each question for "competence" (Moyers et al., 2010). Clinicians typically fall well short of this mark, with two questions for each reflection (Rosengren, 2009; Baer et al., 2009).

Simple reflections involve paraphrasing or restating the client's utterance, often using many of the same words. A simple reflection for Mary could be, "Your family is concerned about labelling Ryan and so you've decided to wait before starting treatment." Simple reflections can convey active listening, but if they are the only type of reflection used, the conversation will quickly sound repetitive and redundant.

Complex reflections are ones which add substantial meaning or interpretation to the client's utterances. In an MI framework, complex reflections can be used to assist the client in acquiring a deeper level of understanding. A selection of complex reflections and their uses are presented below (Miller & Rollnick, 2002).

Reflecting affect. There is often a great deal of emotion present during assessment and intervention in rehabilitation disciplines. This emotion may be an undercurrent in the statements or questions from clients. Reflecting affect is one way of conveying to the client that you have received the emotional content of their words. A reflection of affect for Mary could be, "You are feeling conflicted about your concerns for your son and the feelings of other members of your family."

Hypothesis. This type of reflection moves conversations forward by making hypotheses about what the meaning of a statement might be. For the scenario provided, a hypothesis reflection could be, "It sounds like members of your family have differing ideas about what the best course of action is."

Double-sided reflection. This type of reflection is a key strategy in MI. It addresses ambivalence directly by highlighting for the client disparities in their behaviours and their goals, or differences in statements that they are providing. Double-sided reflections fit into the framework of *on one hand* and *on the other hand*. It can be helpful to think in those terms when generating this type of reflection. A recommended double-sided reflection for Mary would be, "Your family is concerned about the effects of labelling Ryan and you have concerns about his communication and his behaviour." The order of the two sides is important. It is recommended that you start the reflection with the statement that indicates the status quo – the thoughts that are resistant to change. The reflection should end with the desire to change, the reasons for change or ideas about change. In this order, the comments supporting change are those mentioned last. This approach can lead to further discussion about change, rather than a focus on resistance.

Reframing reflection. Reframing can be used to encourage motivation by rephrasing client statements with ones that are more amendable to change. For example, a client's comment that, "This is too hard, I just can't do it any more," could be reframed by stating, "You are needing a break from this right now." Mary's statements could be reframed to support continued consideration of intervention by saying, "You and your family need some more time to consider how intervention might fit into Ryan's education."

There are other types of complex reflections. The ones presented here are intended to provide a variety for initial practice.

Summaries (S)

Summaries consolidate information and discussion for the client and the clinician. They can enhance understanding by drawing attention to important ideas or by highlighting change talk. Clinicians can support clients' perception of their self-efficacy by focusing their summaries on the more positive aspects of the conversation, highlighting client strengths. There are three broad types of summaries. Collecting summaries consolidate discussion and help the conversation move forward. Linking summaries highlight connections for clients by relating one idea to another. These links can highlight similarities in areas of discussion or discrepancies. Transitional summaries can be used by clinicians to communicate that information has been understood and to signal a change in the focus of conversation (Miller & Rollnick, 2002).

TIPS FOR APPLICATION OF MI

When exposed to the OARS techniques, clinicians will sometimes wonder how the provision of information to clients fits into the framework. It is helpful to make

a distinction between providing information to educate and providing information as a form of motivation or counseling. It is appropriate to use information to educate and possible to do so in a means consistent with MI spirit. Rollnick, Miller and Butler (2008) highlight two areas for MI applications in healthcare; determining the priorities of the client and conveying "autonomy". These considerations can guide clinicians when they are in the position of needing to provide information, advice and suggestions to their clients.

A simple technique to convey autonomy is to always seek the permission of the client before providing education or information, for example, "I have some information about hearing aid use in young children. Would it be all right if I shared that with you?" Seeking "permission" is also recommended before setting an agenda, or providing advice and suggestions, for example "I have seen clients with similar difficulties. Would you be interested in hearing about things that have been helpful for them?"

As clinicians are increasing their use of MI skills, it is also important that they reduce the use of verbal behaviors inconsistent with MI. Apodaca and Longabaugh (2009) summarized evidence from a review of studies and found that lower levels of such "MI inconsistent" behaviours were associated with higher levels of client engagement and more positive outcomes. Behaviors considered inconsistent with MI are advising without permission, confronting, and directing.

FURTHER LEARNING

Miller and Moyers (2006) describe an eight stage process in acquisition of MI skills. The first two stages were the focus of this tutorial: conveying MI spirit and learning client-centered communication through OARS. The next three stages are: recognizing change talk and resistance, eliciting and strengthening change talk, and rolling with resistance. These stages assist clinicians in using their OARS skills to specifically focus on change. Familiarity with techniques to elicit change talk and the stages of change (Prochaska, Norcross, & DiClemente, 1994) are key components of an MI approach and are valuable additions to the skill and knowledge base for S-LPs and audiologists. The final stages of acquisition are: developing a change plan, consolidating commitment and transitioning between MI and other counseling approaches.

As with other complex clinical skills, reading tutorials and workbooks alone is insufficient for long-lasting behaviour change. The acquisition of MI skills and effective training methods have been investigated extensively (Lane, Johnson, Rollnick, Edwards & Lyons, 2003; Martino, Haeseler, Belitsky, Pantalon, & Fortin, 2007; Rosengren, 2009). The current recommendation for training is participation in a two-day workshop with follow-up coaching and practice (Rosengren, 2009). This format provides opportunities to learn and practice OARS skills but also explore techniques specific to eliciting change talk. Some health regions within Canada have developed MI training modules. For those that are unable to attend a workshop through their work setting, the MI website provides resources, articles and notices of workshops (www.motivationalinterview.org). Formation of an MI learning group is another way for interested clinicians to continue skill development. The workbook by Rosengren (2009) provides practical activities for development of key skills and could be used in conjunction with a learning group to facilitate organization, practice and discussion. Ongoing learning and reflection can begin by going back to the scenarios in Appendix A and editing your responses to be more in line with MI principles and techniques.

Communication and counseling skills are part of the scope of practice for S-LPs and audiologists (American Speech-Language-Hearing Association, 2007; Canadian Association of Speech-Language Pathologists and Audiologists, 2008). They are used with clients and families across disorder areas, ages and work sites. Effective counseling and communication skills can enhance clinical interactions from initial meetings through discharge. Counseling with techniques, spirit and principles of MI is a method of supporting clients as they envision what is possible and make plans to achieve their goals.

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APPENDIX A

Reflection Exercise

Read each of the paragraphs below and imagine that you are in a conversation with the individual portrayed. Provide a written response 1-2 sentences in length.

Scenario #1

During a session, a teenage fluency client says to you: "I hate going to school. I don't understand what is going on in most of my classes and I am too embarrassed to ask questions. There are a few people who talk to me, but most people just avoid me. I just can't do it anymore. I want to drop out of school."

Your response:

_____

_____

Scenario #2

During a session a client's spouse says to you: "I am feeling really overwhelmed. As the sole caregiver I am trying to do the best I can, but it is just not enough. By the end of the day I am exhausted, and I often don't have a chance to work on your suggestions with my wife. My wife is so important to me, and I feel like I am letting her down. As much as I try, I just can't do it all."

Your response:

_____

_____

Scenario #3

During a session a mother says to you: "My son had a huge temper tantrum. He was throwing his toys around the room, screaming at the top of his lungs, and when I came close to him he started swinging at me. He broke his toy truck and a mirror. He was out of control. I don't know how to handle him".

Your response:

_____

_____

Survey of Canadian Speech-Language Pathology Service Delivery to Linguistically Diverse Clients

Sondage sur la Prestation de Services en Orthophonie au Canada à des Clients Locuteurs de Diverses Langues

Claudette D'Souza
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KEY WORDS
LANGUAGE
CULTURE
SERVICE DELIVERY
SURVEY
LINGUISTIC DIVERSITY
BILINGUALISM
ASSESSMENT
INTERVENTION
SPEECH-LANGUAGE PATHOLOGY

Abstract

An online survey of speech-language pathologists (S-LPs) in Canada was conducted to determine the state of S-LP service delivery to linguistically diverse clients. Data from 384 respondents from across Canada were analyzed. Results indicated that a majority of S-LP respondents provide services to linguistically diverse clients; however, more than half provide services only in the language(s) they, the clinicians, speak. Several barriers to service delivery were identified as pervasive including not speaking the language(s) of their client; limited access to clinicians who did speak their client's language(s), and limited access to several key supports and resources for overcoming some of these barriers such as interpreters or assessment tools in the client's language(s). Clinicians who spoke two or more languages reported assessing and treating clients in all the clients' languages more often than did monolingual English clinicians. As well, more monolingual English respondents than speakers of two or more languages reported that not speaking the clients' language(s), not having access to interpreters, and a lack of knowledge about second language acquisition were barriers to appropriately assessing and treating linguistically diverse clients. Comparisons to data from surveys conducted in the United States (U.S.) found few differences between findings in the U.S. and findings in Canada except that a higher percentage of Canadian S-LPs reported using dynamic assessment, naturalistic observations, and language sampling. Results from this study emphasize the need to increase the number of bilingual S-LPs in Canada and to increase S-LP access to supports and resources relevant to a linguistically diverse clientele.

Abrégé

Nous avons effectué un sondage en ligne auprès d'orthophonistes du Canada afin de déterminer l'ampleur de la prestation de services en orthophonie à des clients locuteurs de langues diverses. Nous avons analysé les données fournies par 384 répondants provenant de partout au Canada. Les résultats indiquent que la majorité des orthophonistes ayant répondu offrent des services à des clients parlant diverses langues; toutefois, plus de la moitié n'offrent des services que dans la langue qu'ils (les cliniciens) parlent. Plusieurs obstacles entravant la prestation de services ont été notés comme étant significatifs, y compris ne pas parler la langue de leurs clients; un accès limité à des cliniciens parlant la langue du client, et un accès limité à plusieurs appuis clés et ressources pour surmonter certains de ces obstacles, par exemple des interprètes ou des outils d'évaluation dans la langue du client. Les cliniciens parlant deux langues ou plus ont indiqué qu'ils évaluaient et traitaient toutes les langues des clients plus souvent que les cliniciens parlant seulement l'anglais. De plus, un plus grand nombre de répondants unilingues anglais que de répondants locuteurs de deux langues ou plus ont indiqué que de ne pas parler la langue des clients, de ne pas avoir accès à des interprètes et d'avoir un manque de connaissances concernant l'acquisition d'une langue seconde constituaient des obstacles entravant leur capacité d'évaluer et de traiter de façon appropriée leurs clients locuteurs de langues diverses. Une comparaison de données recueillies lors de sondages menés aux États-Unis a révélé peu de différence entre les résultats aux États-Unis et ceux au Canada, sauf qu'un plus grand pourcentage d'orthophonistes canadiens ont indiqué utiliser l'évaluation dynamique, l'observation naturaliste et les échantillons de langage. Les résultats de cette étude mettent en lumière le besoin d'accroître le nombre d'orthophonistes bilingues au Canada et d'améliorer l'accès des orthophonistes aux appuis et aux ressources pertinents pour travailler auprès d'une population avec une grande diversité linguistique.

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In 1971, Canada adopted multiculturalism as its official policy (Citizenship and Immigration Canada, 2008), reflecting Canadians' belief that Canada must support and promote citizens of all racial and ethnic origins. Diversity across the country is rapidly growing (Statistics Canada, 2006). While diversity should be celebrated, ensuring that all individuals in a diverse population have equal access and equal quality of service is a formidable challenge. It is critical that speech-language pathologists (S-LPs), the professionals responsible for treating individuals with communication disorders, accurately assess and appropriately treat linguistically and culturally diverse clients in order to meet the needs of all clients, regardless of their language or cultural backgrounds. In this study, we analyzed the challenges S-LPs in Canada encounter when assessing and treating culturally and linguistically diverse clients and how clinicians overcome those challenges. By culturally and linguistically diverse we mean those who are bilingual, non-standard dialect users, or monolingual in a language that the clinician does not speak. We hope that the information we provide in this paper will help to guide future policy and practices for this important population.

Appropriate assessment and treatment of culturally and linguistically diverse clients in speech-language pathology is difficult and requires considerable knowledge and skill which can challenge even the most seasoned clinician. For example, one key assessment goal is to distinguish between a *communication difference and a communication disorder* (Battle, 2002; Crago & Westernoff, 1997; Payne & Taylor, 2007). If this distinction is not made accurately then diagnoses and treatment decisions will not be based on accurate information. As well, research suggests that clinicians should assess and treat bilingual clients in both the language(s) the client uses (e.g., Kayser, 2003; Roberts, 2002; Westernoff, 1994). However, a lack of appropriate assessment instruments often makes it difficult to complete assessments in languages other than English (Centeno, 2009; Kohnert, Kennedy, Glaze, Kan, & Carney, 2003; Kritikos, 2003; Roseberry-McKibbin, Brice & O'Handlon, 2005). Indeed, the number of clinical resources available in English is far greater than the number available in other languages (Huang, Hopkins, & Nippold, 1997; Langdon & Wiig, 2009; Spinelli, 2008; Terrell & Terrell, 1983). Even when the language of a test is appropriate, the normative sample may not include individuals who match the client with respect to dialect and culture, rendering interpretation of results questionable (Garcia & Desrochers, 1997; Taylor, 1986; Thordardottir, 2006). For example, English standardized tests of speech and language are often developed in the U.S. and rarely include Canadians, bilinguals, or individuals from other language and cultural groups (Adler, 1990, 1991; Juárez, 1983; Westernoff, 1991) in their normative samples. Consequently, even bilinguals who are typically developing and have equivalent skills in both their languages may perform below monolingual norms on a standardized test and be identified as impaired (Genesee, Paradis, & Crago, 2004).

Alternatives to Standardized Tests

Given the problems associated with standardized testing of linguistically diverse individuals, several alternatives have been suggested. Caesar and Kohler (2007) have advocated for a descriptive approach involving the use of language sampling, interviews, direct observations, and rating scales. Gutiérrez-Clellen and Simon-Cereijido (2009) found that analyzing language samples of Spanish-English bilingual children in both languages helped identify language impairments with greater accuracy than standardized tests. Peña, Iglesias, and Lidz (2001) found that a dynamic assessment approach was more effectively able to differentiate between a language difference and a language disorder than a static measure of language ability in preschoolers. A detailed case history including knowledge of the languages used by the client and the contexts in which they are used has also been shown to be useful (Langdon, 2008; Roseberry-McKibbin, 1994). In addition, Roseberry-McKibbin stressed the importance of assessing communication in both functional and natural contexts. In all such cases, interpretation depends on knowledge of developmental norms that are often not available. Nevertheless, in working with linguistically diverse clients, when valid standardized tools are not available, alternatives include non-standardised, naturalistic and dynamic assessment.

Another difficulty encountered when assessing culturally or linguistically diverse clients is that clinicians may not speak the language(s) of the client. Of course, a first alternative in addressing this issue would be referral to another clinician who does speak the language of the client, but this might not always be possible. In circumstances where it is not, the use of interpreters or translators has been recommended (e.g., American Speech-Language-Hearing Association (ASHA), 1985, 2004; Kambanaros & van Steenbrugge, 2004; Westernoff, 1991). Kambanaros and van Steenbrugge have advised S-LPs to ensure that the interpreter is well trained and knowledgeable about the typical responses and behaviours that are expected. The interpreter should also be trained in the importance of the evidence in the diagnosis of a communication disorder or they may adversely influence the assessment and intervention process (Kambanaros & van Steenbrugge, 2004). Clearly there might be challenges in adhering to these recommendations.

Surveys of S-LP Practice with Culturally or Linguistically Diverse Clients

Several survey studies have been conducted in the U.S. to investigate S-LP service delivery to culturally and linguistically diverse clients (Caesar & Kohler, 2007; Centeno, 2009; Kritikos, 2003; Roseberry-McKibbin & Eicholtz, 1994; Roseberry-McKibbin et al., 2005). Across studies, the percentage of clinicians with at least one linguistically diverse client on their caseload ranged from 46% (Roseberry-McKibbin & Eicholtz, 1994) to 95% (Kritikos, 2003). In contrast, the percentage of respondents with knowledge of a language other than English ranged from 6% (Caesar & Kohler, 2007) to 55% (Kritikos, 2003). As well, there was a mismatch between the most commonly reported languages spoken by clinicians and those spoken by their clients. The top three languages reported by clinicians were Spanish, French, and German (Kritikos, 2003), while the top three languages reported on caseloads were Spanish, Chinese, and Korean (Kritikos, 2003), or Spanish, Arabic, and Chinese (Caesar & Kohler, 2007). This mismatch suggests that S-LPs in the U.S., as a group, are not as linguistically diverse as the clients they serve, nor do they speak the languages most commonly represented on their caseloads.

Across the U.S. studies, barriers were identified to providing appropriate services to linguistically diverse clients and these were quite similar. The most frequently encountered problems for clinicians were: a) lack of knowledge of the client's language, b) lack of assessment and treatment instruments in languages other than English, c) lack of developmental norms in other languages, and d) lack of availability of other professionals (including S-LPs) with knowledge of the client's language (Centeno, 2009; Kohnert et al., 2003; Kritikos, 2003; Roseberry-McKibbin & Eicholtz, 1994; Roseberry-McKibbin et al., 2005). The barriers to service delivery in the U.S. reported in these surveys did not change considerably over the 15-year span within which these studies were published.

With respect to assessment practices with linguistically diverse clients, instead of assessing in both client languages, a large proportion of U.S. clinicians reported assessing bilingual language learners solely in English (Caesar & Kohler, 2007). In addition, contrary to ASHA (2004) guidelines, many S-LPs reported using English standardized tests (Caesar & Kohler, 2007; Centeno, 2009) more often than alternative, informal procedures. While language sampling was used by 33% (Caesar & Kohler, 2007) to 39% (Centeno, 2009) of respondents, and 33% collected a language acquisition history (Centeno, 2009), no respondents reported using dynamic assessment (Caesar & Kohler, 2007). A large proportion of respondents in various surveys reported employing the services of an interpreter in assessing and treating linguistically diverse clients (Caesar & Kohler, 2007; Centeno, 2009; Kostich & Weiss, 2007; Roseberry-McKibbin & Eicholtz, 1994). While the use of interpreters therefore appears to be a common strategy when working with linguistically diverse clients, interpreter availability varies depending on language, and the incorporation of interpreters into the clinical process requires additional time on the part of the clinician (Kostich & Weiss, 2007). Of concern was that more than 70% of monolingual and bilingual respondents in the study by Kritikos (2003) reported feeling *not competent* or *only somewhat competent* in working with an interpreter to assess a client who spoke a language that they did not. In addition, Kostich and Weiss (2007) found that more than 30% of respondents to their survey indicated that they had never received training in how to utilize interpreters in service delivery. In summary, it would appear that clinicians in the U.S. are still struggling to implement recommended practices for working with a linguistically diverse population.

The Canadian Context

The Canadian context differs in many ways from that of the U.S. Canada has two official languages, English and French, but it is also home to 6.1 million individuals who speak neither English nor French as a first language (Statistics Canada, 2006). Both English and French are official languages in New Brunswick and the three territories. Nunavut also officially recognizes the Inuit Language, the North West Territories officially recognizes nine other languages in addition to English and French, while Quebec is the only province in Canada where the French-speaking population outnumbers the English-speaking population (Statistics Canada, 2006). Dialectal variation is present, particularly in the Atlantic provinces (Kiefte & Kay-Raining Bird, 2009) and the dialects are distinct from those in the U.S. The 700,000 Aboriginal people in Canada speak more than 50 different indigenous languages as well as varieties of English and French that are influenced by these languages (Ball & Bernhardt, 2008). As well, French immersion programs are available to children throughout Canada and have been in existence for over 30 years to encourage French-English bilingualism.

Within Canada, there is a recognized shortage of appropriate French assessment tools (Boudreault, Cabirol, Poulin-Dubois, Sutton, & Trudeau, 2007; Garcia & Desrochers, 1997). Outside of Quebec and New Brunswick, French-speakers seeking speech-language pathology services may share the same problems as speakers of any non-official language due to a shortage of French-speaking clinicians. For example, they risk being

incorrectly diagnosed by a clinician who does not speak French or does not have an awareness of the cultural and linguistic differences associated with the language (Garcia & Desrochers, 1997). As well, the validity of available French tests, for use with both monolingual and bilingual speakers of French in Canada, has been questioned (Thordardottir et al., 2011).

Given the particulars of the Canadian context, we might wonder what barriers there are to S-LPs' provision of services to linguistically diverse clients in Canada. While we might look to findings from the U.S. (Caesar & Kohler, 2003; Centeno, 2009; Kritikos, 2003; Kohnert, et al., 2003; Roseberry-McKibbin & Eicholtz, 1994; Roseberry-McKibbin et al., 2005) as a starting point, the uniqueness of the Canadian context encourages us to look specifically to research conducted here in Canada. To date, only two studies have surveyed S-LPs' provision of services to linguistically diverse clients in Canada (Ball & Lewis, 2011; Kerr, Guildford, & Kay-Raining Bird, 2003). Kerr et al. surveyed standardized test usage of 144 Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) members working with children. Thirty-percent reported working primarily with children who spoke French, and another 35% reported working primarily with children who spoke neither English nor French as a first language. Forty-five percent reported using English tests in assessing non-native speakers of English; 43% interpreted the tests using their original norms. In response to these statistics, Kerr et al. (2003) argued that a lack of appropriate assessment tools in other languages is a barrier faced by S-LPs in Canada as well as those in the U.S. Of the 70 clinicians surveyed by Ball & Lewis (2011), less than 50% reported feeling well-prepared to work with Aboriginal children, even after two years of experience, and 80% reported feeling that a whole new approach to service delivery was needed. These two studies provide us with a preliminary status of barriers to S-LP service to linguistically diverse clients, but, given the studies' focus on standardized testing and people of Aboriginal descent respectively, we clearly need a more comprehensive survey.

The purpose of the study reported here, then, was to expand our understanding of the challenges faced by S-LPs across Canada working with linguistically diverse clients of all ages. We used a survey instrument to do so. Specifically, we sought to: a) assess the current status of speech-language pathology services to linguistically diverse clients in Canada in the language(s) they speak; b) examine the barriers that S-LPs face in providing such services; c) determine the manners in which these barriers are overcome; and d) investigate the relationships between the clinicians' language use and variables such as caseload composition, rating of barriers faced, and availability and use of supports/resources.

METHOD

Participants and Recruitment

The 384 participants in this study were practicing S-LPs across Canada with current caseloads who completed an online survey accessed through Opinio, a survey system supported by Dalhousie University, where the research was conducted. The national association, CASLPA, provincial/territorial regulatory bodies (e.g., College of Audiologists and Speech-Language Pathologists of Ontario), and provincial/territorial associations (e.g., Speech and Hearing Association of Nova Scotia) made the link to the survey available to participants. This link was made available in one or more of the following ways: a direct email to all S-LP members with details of the study and a web link to the survey; inclusion of the web link within a monthly email to S-LP members; or inclusion of the web link on the members-only section of the association's website. A reminder notice was sent two months after first contact via the same routes to increase response rates.

The survey was made available in French or English and was open for responses for 10 weeks. A total of 394 surveys were completed. (The survey was accessed 668 times reflecting the fact that many clinicians did not complete the survey when first accessing it). Of the surveys completed, 10 did not meet the eligibility requirements – the respondents were not practicing S-LPs in Canada with a current caseload. These were not analyzed further. Of the remaining 384 surveys, 308 were completed in English and 76 were completed in French. According to the Canadian Institute for Health Information (CIHI, 2007), there are 6,661 S-LPs in Canada. However, it is not possible to determine the number of S-LPs who actually saw the notices regarding the survey distributed by the national and/or provincial associations and/or regulating bodies. Consequently, a response rate cannot be calculated.

Survey Design

A 26-item survey questionnaire was developed (see Appendix A). To establish validity of the instrument, the questionnaire was pilot-tested with one experienced speech-language pathologist in each of the following provinces/territories: Nova Scotia, New Brunswick, Quebec, Ontario, British Columbia, and Northwest Territories. Participants in the pilot-testing component of this study completed the survey and then provided feedback via phone or email regarding the organization, clarity, and appropriateness of the items on the

questionnaire. The survey was modified to its final form in response to this feedback and the original pilot participants were asked to review the changes to ensure that their concerns were addressed.

Similar to the surveys administered by Caesar and Kohler (2007), Kohnert et al. (2003), Kritikos (2003), and Roseberry-McKibbin et al. (2005), questions about demographic information (#2-12), caseloads (#13-19), barriers (#24) to offering speech-language pathology services to linguistically diverse individuals, and supports/resources available to overcome those barriers (#21-22) were included.

Demographic items. Participants were asked to specify their years of experience in the field, and the location and setting of practice. They were also asked to report the languages they spoke, and to rate their proficiency in each language on a Likert-like scale (*excellent; very good; good; fair; poor, very poor*).

Caseloads. Respondents were asked to indicate their caseload size, the most frequent five languages represented on their caseloads, the number of clients speaking each language, and the types of disorders represented on their caseload. Clinicians were also asked about their current clinical experience and practice with linguistically diverse individuals (Caesar & Kohler, 2007; Kohnert et al., 2003; Kritikos, 2003; Roseberry-McKibbin et al., 2005).

Barriers. Respondents were asked to rate the frequency with which they encountered potential barriers to providing services to linguistically diverse clients on a Likert-like scale (*very frequent; frequent; somewhat frequent; somewhat infrequent; infrequent*). Potential barriers and rating scales were adapted from the surveys conducted by Kohnert et al. (2003), Kritikos (2003), and Roseberry-McKibbin et al. (2005)

Supports/Resources. Clinicians were also asked about their access to and use of six supports/resources identified in the literature as key to overcoming some of the barriers associated with service delivery to linguistically diverse clients (e.g., Crago & Westernoff, 1997; Hoff, 2005; Nicoladis & Genesee, 1997; Payne & Taylor, 2007; Westernoff, 1991).

Analysis

The data were downloaded from Opinio into the Statistical Package for the Social Sciences (SPSS; v.17 for Windows) for analysis. The number and percentage of individuals responding to each question or selecting an option for each question were tallied. Chi-square tests were used to compare the percentage of participants responding to various questions or to a known distribution; significance was set at $p < .05$ a priori.

RESULTS

Demographics

Geographic area. All provinces and territories except the Yukon were represented in the sample, with the majority of respondents reporting work settings in Ontario (41.1%) or Quebec (21.9%). A chi-square goodness-of-fit test indicated that the sample distribution was not representative of the distribution of S-LPs in provinces across the country (CIHI, 2007), $\chi 2\,(9, n = 379) = 108.6, p > .05$. The provinces of Alberta, British Columbia, and Manitoba were significantly under-represented, and New Brunswick, Nova Scotia, and Prince Edward Island were significantly over-represented. No comparison data were available on the number of S-LPs in the territories.

Linguistic background. There were 32 languages reported spoken by participants, with the top five being: English (n = 383); French (n = 285); Spanish (n = 61); German (n = 27); and Italian (n = 15). The majority of respondents reported English (n = 286) or French (n = 89) as their first language; however, Romanian, Spanish, Mandarin, Estonian, Portuguese, Russian, and Serbian were also listed as first languages. Of the 84 respondents (21.9%) who listed knowledge of only one language, all were monolingual English speakers. Monolingual English respondents were distributed across all provinces except Quebec and the territories. Three hundred respondents (78.1%) listed knowledge of two or more languages; 188 were reportedly bilingual, 112 multilingual; 285 reported knowledge of both French and English. Of the 293 who indicated where they had learned their second language, 50 (17.1%) indicated that they learned it at home, 208 (71.0%) learned it in school, and 35 (11.9%) learned it in a country where that language was spoken.

Experience and education. The number of years of S-LP experience ranged from 0 to 39 years (M =11.6, *SD* = 8.9), with about half of respondents (195, 50.8%) reporting 10 or more years of experience, and half (189, 49.2%) reporting less than 10 years. Clinicians with 10 or more years of experience and those with less than 10 years of experience were evenly represented with respect to linguistic background. In the sample, 374 (97.4%) respondents had a Masters degree in speech-language pathology; 286 (76.5%) completed their program in English, 86 (23.0%) in French, and one each in Portuguese and Romanian. In addition, two of the respondents with a master's degree also reported holding a doctoral degree in speech-language pathology.

Work. Respondents were asked to report both the total percentage of a Full Time Equivalent (FTE) they worked and the percentage of the total work time that they spent in a variety of work settings (e.g., school,

clinic, etc.; see Appendix A, question 8). Most (283, 74.0%) reported that they worked full time (i.e., 1 FTE; range = 10-102%, *M* = 91.8%, *SD* = 17%). Many (145, 37.8%) also indicated that they worked in more than one setting. The largest percentage of respondents reported working in the schools (154, 40.1%), although clinics, hospitals or rehabilitation centres were also frequently identified as work settings and all options provided in this question were represented. Respondents were asked specifically whether they provided English as a Second Language (ESL), French as a Second Language (FSL) or Accent Reduction (AR) services in their clinical practice. Only a small number did (38, 9.9%; 26, 6.8%, and 13, 3.4% respectively).

Caseloads

Several questions regarding caseload make-up (#13-15), required respondents to indicate the number of clients within a particular category (e.g., the number of adults and children on their caseloads) that they had seen in the last 12 months. However, 35.1% of respondents had difficulty estimating these numbers, and discrepancies from 1 to 500 were noted between subcategory numbers and totals reported. As a result, the decision was made to analyze the number of respondents who indicated working with a particular category of client rather than the number of clients reported in each category.

Respondents reported on the linguistic make-up of their caseloads (Table 1). In terms of the languages of the clients, overall, monolingual English clients were represented on 84.4% of all caseloads, while monolingual French clients and clients who were monolingual in another language were present on 38.3% and 35.7% of caseloads, respectively (Table 1). In terms of the language of the respondents, chi-square revealed that a larger proportion of monolingual English respondents reported having monolingual English clients on their caseloads than did respondents with knowledge of two or more languages, $\chi 2$ (1, n = 384) = 19.1, $p < .001$. In contrast, a greater proportion of respondents with knowledge of two or more languages reported having monolingual French clients, $\chi 2$ (1, n = 384) = 44.1, $p < .001$, clients with non-standard French dialects, $\chi 2$ (1, n = 384) = 6.5, $p = .011$, sequential bilinguals, $\chi 2$ (1, n = 384) = 9.4, $p = .002$, and simultaneous bilinguals, $\chi 2$ (1, n = 384) = 12.5, $p < .001$ on their caseloads. Considering the age range of the caseloads, there were 235 (61.2%) respondents with exclusively pediatric caseloads; 45 (11.7%) with only adult caseloads; and 104 (27.1%) with mixed pediatric-adult caseloads.

Table 1

Number and Percentage of Respondents who Reported Having Various Clients on their Caseload

	Respondents					
	Total (n = 384)		Monolingual English (n = 84)		Two or more languages (n = 300)	
Clients	**#**	**%**	**#**	**%**	**#**	**%**
Monolingual English speakers	324	84.4%	84	100%	240	80.0%
Monolingual French speakers	147	38.3%	6	7.1%	141	47.0%*
Monolingual in another language	137	35.7%	29	34.5%	108	36.0%
Speakers of a non-standard English dialect	70	18.2%	15	17.9%	55	18.3%
Speakers of a non-standard French dialect	22	5.7%	0	0.0%	22	7.3%*
Sequential bilinguals	263	68.5%	46	54.8%	217	72.3%*
Simultaneous bilinguals	254	66.1%	42	50.0	212	70.7%*

Notes: Sequential bilinguals = learned a first language from birth and a second language after 3 years of age; Simultaneous bilinguals = learned two languages at the same time, beginning before 3 years of age; * = Chi-square indicates percentage of monolingual and multilingual respondents significantly different at p< .05

The number of languages reported spoken by clients on any single respondent's caseload ranged from 1 to 40 (M = 4.7, *SD* = 4.4), with 314 (81.8%) respondents reporting that two or more languages were represented on their caseloads. A total of 87 client languages were reported across the sample. After English (n = 268) and French (n = 190), the five most common languages represented were: Spanish (n = 97); Arabic (n = 63); Urdu (n = 41); Mandarin (n = 35); and Punjabi (n = 34).

Chi-square revealed that a larger proportion of respondents who spoke two or more languages reported assessing and treating in all the languages spoken by the client, $\chi 2$ (1, n = 384) = 7.24, p = .007. Conversely, a larger proportion of monolingual English respondents reported assessing and treating only in the language they themselves spoke, $\chi 2$ (1, n = 384) = 4.93, p = .026.

In examining S-LPs' practices with linguistically diverse clients, only responses from the 344 respondents who reported that they did work with linguistically diverse clients were analysed. There were 40 respondents who indicated that they did not work with linguistically diverse clients. Of the 344 respondents who reported working with linguistically diverse clients, 82 (23.8%) indicated that they assessed and treated linguistically diverse clients in all the languages spoken by the client; 70 (20.3%) indicated that they assessed and treated in the client's strongest language; and 192 (55.8%) indicated that they assessed and treated only in the languages they, the clinician, spoke.

Barriers

The 344 respondents who worked with linguistically diverse clients were asked to rate the frequency with which they encountered certain barriers in assessing and treating linguistically diverse clients. Table 2 shows the number of respondents who indicated encountering a given barrier *very frequently, somewhat frequently,* or *frequently*, both for the overall sample and for those who were monolingual English or had knowledge of two languages. Overall, the three barriers rated by the largest number of respondents as frequently to very frequently encountered were a *lack of appropriate less biased assessment instruments* (276, 80.2%), *a lack of availability of other S-LPs who speak the client's language(s)* (251, 73.0%) and *don't speak the language of the client being assessed* (248, 72.1%). This pattern was also seen when examining the responses of clinicians with knowledge of two or more languages. However, the pattern of responses differed for monolingual English respondents. Not surprisingly, the barrier rated by the largest number of monolingual English respondents as frequently to very frequently encountered was: *don't speak the language of the client being assessed* (60, 80.3%). Chi-square comparisons identified significant differences in the proportion of monolingual English respondents and respondents with two or more languages reporting frequently to very frequently encountering three of the listed barriers: *Don't speak the language of the client being assessed*, $\chi 2$ (1, n = 344) = 5.72, p = .016; *Lack of availability of interpreters who speak the client's language*, $\chi 2$ (1, n = 344) = 5.21, p = .022; and *lack of knowledge about second language acquisition*, $\chi 2$ (1, n = 344) = 4.45, p = .034. In all cases, a larger proportion of monolingual English respondents than speakers of two or more languages reported frequently facing each of these three problems.

Table 2

Number and Percentage of Respondents Working with Linguistically Diverse Clients who Reported Facing Barriers Very Frequently, Frequently, or Somewhat Frequently in Serving Linguistically Diverse Clients

	Respondents					
	Total (n = 344)		Monolingual English (n =72)		Two or more languages (n = 272)	
Barriers	**#**	**%**	**#**	**%**	**#**	**%**
Lack of appropriate less biased assessment instruments	276	80.2%	52	72.2%	224	82.4%
Lack of availability of other speech-language pathologists who speak the client's language(s)	251	73.0%	58	80.6%	193	71.0%

Don't speak the language of the client being assessed	248	72.1%	60	83.3%	188	69.1%*
Lack of knowledge of developmental norms in the client's language	234	68.0%	50	69.4%	184	67.6%
Lack of knowledge about the client's culture	194	56.4%	41	56.9%	153	56.3%
Difficulty distinguishing a language difference from a language disorder	158	45.9%	29	40.3%	129	47.4%
Lack of time to administer appropriate assessment.	153	44.5%	27	37.5%	126	46.3%
Lack of availability of interpreters who speak the client's language(s)	132	38.4%	36	50.0%	96	35.3%*
Lack of knowledge about bilingualism or bilingual development	97	28.2%	26	36.1%	71	26.1%
Lack of knowledge about second language acquisition	95	27.6%	27	37.5%	68	25.0%*

Note: Sequential bilinguals = learned a first language from birth and a second language after 3 years of age; Simultaneous bilinguals = learned two languages at the same time, beginning before 3 years of age; * = Chi-square indicates percentage of monolingual and multilingual respondents significantly different at p< .05

Supports/Resources

Respondents who reported working with linguistically diverse clients were asked to identify whether they had access to various supports or resources. About a quarter (24.7 to 27%) of all respondents reported having *no access* to four of the six supports/resources: bilingual S-LPs; assessment tools in the client's language(s); speech and language norms in the client's language(s); and training to work with linguistically diverse clients. In contrast, almost all clinicians reported having access to cultural information. Chi-square results indicated a larger proportion of monolingual English respondents reported no access to assessment tools in the client's language(s), $\chi 2\ (1, n = 344) = 7.63, p = .005$ and no access to speech and language norms in the client's language(s), $\chi 2\ (1, n = 344) = 5.05, p = .024$ than did respondents with knowledge of two or more languages (Table 3).

Table 3

Number and Percentage of All Clinicians (n=344) and those who were Monolingual English or Spoke Two or More Languages who Reported having No Access to Various Supports/Resources

	Respondents					
	Total (*n* = 344)		Monolingual English (*n* =72)		Two or more languages (*n* = 272)	
Supports/Resources	**#**	**%**	**#**	**%**	**#**	**%**
Interpreters	53	15.4%	14	19.4%	39	14.3%
Bilingual S-LPs	85	24.7%	22	30.6%	63	23.2%

Assessment tools in the client's language(s)	90	26.2%	28	38.9%	62	22.8%*
Speech and language norms in the client's language(s)	93	27.0%	27	37.5%	66	24.3%*
Cultural knowledge	24	6.9%	3	4.2%	21	2.6%
Training to work with linguistically diverse clients	82	23.8%	16	22.2%	66	24.3%

Notes: * = Chi-square indicates percentage of monolingual and multilingual respondents significantly different at p< .05

When clinicians had access to listed resources, they were asked to rate the frequency (*always, frequently, infrequently, never*) with which they used them when working with linguistically diverse clients. Cultural data, interpreters, and training were most often used *always* or *frequently*. In addition, in comparison to monolingual English respondents, a significantly larger proportion of respondents with knowledge of two or more languages reported *always* or *frequently* using: bilingual S-LPs, $\chi 2$ (1, n = 344) = 11.65, p < .001; assessment tools in the client's language(s), $\chi 2$ (1, n = 344) = 10.16, p = .001; speech and language norms in the client's language(s) $\chi 2$ (1, n = 344) = 7.74, p = .005; and training to work with linguistically diverse clients, $\chi 2$ (1, n = 344) = 4.2, p = .040 (Table 4).

Table 4

Number and Percentage of Respondents who Reported having Both Access to Various Resources/Supports and Using them "Always" or "Frequently"

	Respondents					
	Total (n = 344)		Monolingual English (n = 872)		Two or more languages (n = 272)	
Supports/Resources	**#**	**%**	**#**	**%**	**#**	**%**
Interpreters	123/291	42.3%	22/58	40.0%	101/233	43.3%
Bilingual S-LPs	64/259	24.7%	3/50	6.0%	61/209	29.2%*
Assessment tools in the client's language(s)	66/254	26.0%	3/44	6.8%	63/210	30.0%*
Speech and language norms in the client's language(s)	56/251	21.8%	3/45	6.7%	53/206	25.7%*
Cultural knowledge	240/320	75.0%	49/69	71.0%	191/251	76.1%
Training to work with linguistically diverse clients	111/262	42.4%	17/56	30.4%	94/206	45.6%*

Notes: Percentages are based on total number responding to the item (n) minus respondents reporting no access to the support/resource; * = Chi-square indicates percentage of monolingual and multilingual respondents significantly different at p< .05

Assessment Strategies

Respondents were asked to rate their frequency of use of various assessment strategies when working with linguistically diverse clients, using the same rating scale as described for use of supports (see Table 5). A large majority of respondents reported *always* or *frequently* using naturalistic observations (91.8%), language samples (85.8%), and dynamic assessments (71.8%). Chi-square revealed significant differences between monolingual respondents and respondents with two or more languages in the use of standardized tests in French, $\chi 2$ (1, n = 344) = 23.68, $p < .001$; standardized tests in the client's strongest language, $\chi 2$ (1, n = 344) = 12.88, $p < .001$; and standardized tests translated into the client's strongest language, $\chi 2$ (1, n = 344) = 126.47, $p < .001$. In all three cases, significantly fewer monolingual English respondents reported using these tests than respondents with two or more languages.

Table 5

Number and Percentage of Respondents who Reported Always or Frequently Using a Particular Assessment Strategy with Linguistically Diverse Clients

	Respondents					
	Total (n = 344)		Monolingual English (n = 72)		Two or more languages (n = 272)	
Assessment Strategy	**#**	**%**	**#**	**%**	**#**	**%**
Standardized tests in English	226	65.7%	48	66.7%	178	65.4%
Standardized tests in French	71	20.6%	0	0.0%	71	26.1%*
Standardized tests in the client's strongest language	58	16.9%	2	2.8%	56	20.6%*
Standardized tests translated into the client's strongest language	79	22.9%	7	9.7%	72	26.5%*
Standardized tests adapted for a particular client	107	31.1%	16	22.2%	91	33.5%
Naturalistic observations	316	91.8%	67	93.1%	249	91.5%
Language samples	295	85.8%	61	84.7%	234	86.0%
Dynamic assessments	247	71.8%	50	69.4%	197	72.4%

Notes: * = Chi-square indicates percentage of monolingual and multilingual respondents significantly different at p< .05

DISCUSSION

The purpose of this study was to examine the current state of services provided by S-LPs in Canada in serving linguistically diverse clients, the challenges they face and the manner in which those challenges are overcome. Data from 384 respondents were analyzed. The S-LPs who responded to this survey reported working with a variety of linguistically diverse clients, including monolingual speakers of French or another language other than English, bilinguals, and speakers of nonstandard dialects. Together, S-LPs reported speaking 32 different languages with some proficiency, with one clinician reporting proficiency in five languages. An even wider variety of languages (87) were reported spoken by their clients, with individual clinicians reporting up to 40 different languages being spoken by clients on their caseloads. Thus, while the group of clinicians in this sample had a considerable degree of language capacity, ultimately, there was a mismatch between the languages they spoke and those spoken by their clients.

A mismatch between clinician and client languages, of course, presents challenges to assessment and intervention that must be overcome if linguistically diverse clients are to receive services. First, clinicians are encouraged in the literature to assess and treat bilingual clients in both their language(s) (e.g., Kayser, 2002; Roberts, 2002; Westernoff, 1994). These services can be made available directly or with assistance from trained interpreters. Of the 344 clinicians who reported providing services to linguistically diverse clients, about a quarter reported they assessed and treated all of the client's language(s)[1]. Without assessing each language a client uses, it is impossible to get an accurate sense of their language abilities. That being said, the feasibility or even advisability of treating all languages in multilingual clients has not been adequately addressed in the literature and should be studied. Further, our understanding of how treatment in one language affects learning in other languages (i.e., positive transfer) is limited and needs further study. More than half of the respondents in the present study reported assessing and treating *only* in the languages that they themselves spoke, which is contrary to best practice. This suggests that speech-language pathology services in the client's language(s) are not available to many linguistically diverse clients. While it is possible that clinicians are not aware of what is best practice, it is more likely that clinicians have limited access to the supports/resources for implementing best practice, such as access to bilingual S-LPs or interpreters. Other data from this survey support this notion. For example, in the present study, 72% of clinicians with linguistically diverse clients on their caseloads reported that not speaking the language(s) of their clients was frequently a barrier to service delivery. An almost equal number reported that they were unable to access a clinician who could speak their client's language(s). CASLPA suggests that, when a professional does not speak a client's language, referral to a clinician who does speak the language is appropriate (Crago & Westernoff, 1997). It would appear that most clinicians in this study were aware that this would be a preferred choice, but did not have that option. The need for recruiting more S-LPs who speak languages other than English is highlighted with these findings.

There is a documented dearth of assessment tools in languages other than English (Huang, et al., 1997; Langdon & Wiig, 2009; Spinelli, 2008; Terrell & Terrell, 1983), including French (Garcia & Desrochers, 1997). Therefore, it is not surprising that the barrier reported by the largest percentage of respondents who had linguistically diverse clients on their caseloads was a lack of availability of appropriate less-biased assessment instruments. This absence or lack has a serious impact on the ability of clinicians to accurately diagnose communication disorders in linguistically diverse clients. The consequence is that linguistically diverse clients may be over-diagnosed and unnecessarily placed on caseloads (Adler, 1990; Ball & Bernhardt, 2008; Kritikos, 2003; Pray, 2003; Terrell & Terrell, 1983), or, perhaps worse, they may be under-diagnosed and have a communication disorder that is dismissed as a communication difference (Flipsen, 1992; Holland, 1983; Tonkovich, 2002). Clearly, it is critical that assessment instruments be developed that can be used validly and reliably for diagnostic purposes with linguistically diverse clients.

In addition to assessment tools, clinicians who reported providing services to linguistically diverse clients also reported an absence of necessary developmental information that can be used to interpret language sample data and to plan for intervention with linguistically diverse clients. Almost 25% of these clinicians reported that they did not have access to speech and language norms in the client's language(s) and 68% reported that the lack of knowledge of developmental information is a barrier to service delivery. The clinicians in this study see a critical need for both of these resources.

Resources and supports key to addressing some of the difficulties associated with providing appropriate service delivery to linguistically diverse clients have been identified in the literature (e.g., Hoff, 2005; Juárez, 1983; Kambanaros & van Steenbrugge, 2004) and by ASHA (2003, 2004, 2005) and CASLPA (Crago & Westernoff, 1997). In particular, working with well-

1 Note that respondents were asked to indicate if they did the following: "I assess/treat in all the languages that the client speaks."

trained interpreters is a vital alternative for clinicians given that many S-LPs do not speak the languages spoken by their clients (Crago et al., 1991; Kambanaros & van Steenbrugge, 2004; Westernoff, 1991). While almost 85% of respondents with linguistically diverse clients on their caseloads reported having access to interpreters, less than half reported using them *always* or *frequently* when working with linguistically diverse clients.

There are several reasons why clinicians may not use an interpreter when one is available. One reason could be a lack of training in how to utilize them (Kostich & Weiss, 2007; Kritikos, 2003). Successful incorporation of interpreters into the clinical process is dependent upon the clinician ensuring that the interpreter has: a) native proficiency in the client's language(s); b) knowledge of professional terminology, assessment and treatment principles; and c) basic interview skills (ASHA, 2004). Clinicians may not have the time or opportunity to train an interpreter and may therefore not feel they are helpful. Other reasons for not using professional interpreters may be an inability to cover the financial costs associated with their use or the lack of availability of a professional interpreter for the particular client language. In the absence of a professional interpreter, a clinician may use a client's family member or other staff members as an alternative during assessment and treatment. However, this is not necessarily ideal (Kambanaros & van Steenbrugge, 2004), as information can be unknowingly altered or omitted by such interpreters, particularly in the case of family members, even after training. Given the documented usefulness of interpreters in working with linguistically diverse clients and the fact that they are not available to all clinicians who need them, greater access to interpreters and training in their appropriate use is warranted.

Knowledge about a client's culture can be an excellent resource for clinicians. Almost all clinicians reported having access to cultural information, and of these, approximately 75% reported using this information *always* or *frequently*. In contrast, approximately 75% also reported that they had *no access* to training to work with linguistically diverse clients. Thus, while it seems that clinicians are able to obtain some background cultural knowledge to assist them in working with many clients, continuing education opportunities do not appear to be easily available. This would suggest that new avenues for obtaining this knowledge need to be developed.

Between 72% and 92% of clinicians reported using naturalistic observations, language samples, or dynamic assessments frequently when assessing linguistically diverse clients. Such strategies are vital to any assessment, and are particularly important in the absence of valid standardized tools (e.g., ASHA, 2003; Gutiérrez-Clellen & Simon-Cereijido, 2009; Peña, Iglesias, & Lidz, 2001). Clearly, a large majority of respondents to this survey were aware of the importance of these less formal assessment procedures. The information gathered through such procedures would be more adequately interpreted if the S-LP could make comparisons to speech and language developmental information specific to a client's language. However, as stated previously, these norms are often not available.

Contrasting Monolingual and Multilingual Clinicians

As a group, clinicians who were monolingual English speakers differed from those who spoke two or more languages in their responses to the survey questions. First, fewer monolingual English speaking clinicians reported having clients who were monolinguals in a language other than English, non-standard French dialect speakers or bilinguals on their caseloads. It is possible that monolingual English clinicians may work more often in communities with high numbers of monolingual English speakers, and therefore they may not encounter as many linguistically diverse clients.

In terms of service provision, relative to monolingual English respondents, a significantly larger proportion of clinicians who spoke two or more languages reported assessing and treating clients in all the languages spoken by the client. Conversely, a significantly larger proportion of monolingual English respondents reported assessing and treating clients only in the language they themselves spoke. Several factors may account for these findings. First, since they do not speak another language, monolingual English clinicians may be more likely to refer linguistically diverse clients to other clinicians who do, rather than treat the client themselves. However, since monolingual English S-LPs report referring to bilingual S-LPs less often than clinicians who speak two or more languages even though both groups of respondents report equivalent access to bilingual clinicians, this is not a likely explanation. Alternatively, monolingual English speaking S-LPs may have less access to other supports/resources needed to provide appropriate services in all the client's language(s). This appears to be a more likely explanation as monolingual English speaking clinicians reported they have no access to assessment tools in the client's language or speech and language norms in the client's language more often than did clinicians who speak two or more languages. It is also possible that, because of their own monolingual backgrounds, monolingual English clinicians may be less aware of the necessity to assess and treat in the language the client speaks. However, given that these clinicians are able to identify barriers to appropriate service delivery such as not having assessment tools or

developmental information in the client's language, it is more likely the case that monolingual English clinicians are aware of the need to assess and treat in the client's language(s), but may lack the knowledge, skills and/or resources required to do so appropriately. Indeed, if there are fewer linguistically diverse clients in a catchment area, there would likely be fewer resources to assess and treat them at the facility where the S-LP works.

In comparison to the monolingual English clinicians, a significantly larger proportion of clinicians with knowledge of two or more languages reported *always* or *frequently* using bilingual S-LPs, assessment tools in the client's language(s), speech and language norms in the client's language(s), and training to work with linguistically diverse clients. The difference between the two groups may best be attributed to the accessibility issues just discussed. It is also possible that clinicians who are bilingual can use their own personal knowledge of the impact of linguistic diversity to assist them in making appropriate decisions about speech and language assessment and treatment.

There was no difference between monolingual English speaking clinicians and clinicians who know two or more languages in their access to or use of interpreters—approximately 85% of both groups reported having access to interpreters although only about 40% in each group reported using them frequently or very frequently. Clearly, knowledge of two or more languages does not guarantee that a clinician will know the client's particular language(s). Since S-LPs who know two or more languages report serving linguistically diverse clients more often, then the need for interpreters in this group is higher.

Comparisons to Previous Surveys

Several similar surveys have been conducted in the U.S. as far back as 1994 (Centeno, 2009; Kohnert et al., 2003; Kritikos, 2003; Roseberry-McKibbin & Eicholtz, 1994; Roseberry-McKibbin et al., 2005). Only two such studies have been conducted in Canada, excluding this one. Both Canadian studies (Kerr et al. 2003; Ball & Lewis, 2011) were narrower in scope than the present study and surveyed S-LPs' provision of services to linguistically diverse pediatric clients only. Results from the present study expand on our understanding of the Canadian context and indicate that the challenges surrounding service delivery to linguistically diverse clients are not limited to the pediatric population and are similar in many ways in Canada and the U.S.

Comparing service availability between the two countries, we see a similar mismatch between the languages spoken by clinicians and those spoken by clients. Similar to findings in the survey conducted by Kritikos (2003), in the present study the most commonly reported languages spoken by clinicians and those spoken by their clients differed. After English and French, the five most common languages spoken by clinicians in the present study were Spanish, German, Italian, ASL, and LSQ (Quebec Sign Language). In contrast, the five most common languages represented on caseloads, after English and French, were Spanish, Arabic, Urdu, Mandarin, and Punjabi. This suggests that, despite the linguistic diversity of clinicians both in Canada and the U.S., the types of languages spoken are not the same as those most represented on caseloads. The problem is most obvious when the number of clinicians reporting that they are able to speak a particular language is contrasted with the number of clinicians reporting they have clients who speak that language: Arabic 5 versus 65, Urdu 0 versus 41, Mandarin 4 versus 35 and Punjabi 0 versus 34 respectively. Clearly it is critical to recruit more clinicians who speak those languages most often encountered on caseloads such as Arabic, Urdu, Mandarin and Punjabi. Interestingly, in the present study more Canadian clinicians reported speaking French (285) than having clients who spoke French (190) which suggests that many French-speaking clients in Canada are indeed being serviced in French, although even in this case not all clinicians who reported have French-speaking clients also reported speaking the language.

With respect to the barriers faced in providing appropriate services to linguistically diverse clients, the pattern of responses in the present study is in accordance with the findings of U.S. studies (Kohnert et al., 2003; Kritikos, 2003; Roseberry-McKibbin et al., 2005). Similar differences in the pattern of responses produced by monolingual English respondents and respondents with knowledge of two or more languages was noted by Kritikos (2003), with the most frequently reported barrier to service delivery for monolingual clinicians being a lack of knowledge of the client's language(s).

Assessment strategies used by clinicians appear to differ in Canada and the U.S. Caesar and Kohler (2007) reported lower use of informal methods to assess bilingual students' language abilities compared to the present study. Only 33% of U.S. S-LPs reported using language sampling and 10% reported engaging in naturalistic observations, while dynamic assessment was not used (Caesar & Kohler, 2007). In contrast, approximately 90% of clinicians in the present study reported using naturalistic observations, 85% reported taking language samples, and 70% reported using dynamic assessments. This suggests that Canadian clinicians may be more knowledgeable about and comfortable with the use of alternative assessment methods than their U.S. counterparts.

Limitations and Future Research

Response rate could not be accurately calculated because of the nature of participant recruitment. The survey was made available to potential participants through website postings and emails to membership lists, depending upon the organization that assisted in the recruitment. It is impossible to determine how many S-LPs actually saw the invitation to participate. Despite this, since there are 6,661 S-LPs in Canada (CIHI, 2007) and 384 surveys were completed, this suggests that the sample size for this survey is relatively small compared to the population of clinicians in Canada. Nonetheless, all regions of Canada were represented in the sample and the more populated provinces had larger numbers of survey respondents suggesting that the sample was representative of the general geographic distribution of S-LPs across the country (CIHI, 2007). In addition, 84 monolingual English speakers and 300 speakers of two or more languages participated, allowing us to compare the responses of these two groups. Both of these groups of respondents were also geographically distributed across provinces and territories in a manner that is reflective of the linguistic make-up of the general population in each province territory (i.e., no monolingual English respondents from Quebec). Another factor increasing the representativeness of the sample was that approximately half of all respondents had less than 10 years of experience and half had 10 or more years of experience, a distribution that emerged within each province and territory. These demographic attributes suggest that results from this survey may be generalized to the larger population of S-LPs across Canada, and in particular, conclusions may be drawn regarding the practices of monolingual English clinicians and clinicians with knowledge of two or more languages across Canada.

Conclusions and Recommendations

CASLPA published a position paper in 1997 outlining the need for change to better serve Canada's increasingly diverse population. Data from the present survey suggest many of the challenges recognized then remain 15 years later. As well, despite the contextual differences, the challenges that clinicians experience appear to be similar in the U.S. and Canada with respect to service delivery to linguistically diverse clients.

In general, it appears that Canadian clinicians responding to this survey were aware of the complexities involved in providing appropriate services to linguistically diverse clients. They are currently often using resources, supports, and strategies recommended for appropriate service delivery. Data from the current study, however, suggest that clinicians may benefit from continuing education in a variety of topics. More education should be provided on best practice with linguistically diverse clients, particularly highlighting the importance of assessing and treating in the client's language(s). Monolingual clinicians in particular may benefit from such training. As it is unlikely that clinicians will speak the language(s) of every client they work with, training could also be provided on the effective use of interpreters in providing services to linguistically diverse clients. Training of this type may increase the use of interpreters by clinicians who have access to them.

There is much that can be done to ensure that clients have access to services in their own language(s). Results from this study suggest that increasing the number of bilingual S-LPs in general is one strategy that will be helpful, especially since these clinicians seem to be more likely to use recommended strategies for assessment and intervention. It would also be useful, however, to target specific languages when recruiting bilingual S-LPs. In particular, there appears to be a critical need to recruit clinicians who speak Chinese dialects, Urdu, Arabic and Punjabi to university training programs and clinical positions in Canada. Being bilingual does not guarantee that the clinician will speak the language(s) of the client. Consequently, speech-language pathology regulatory bodies and associations/organizations must work to increase the availability of supports/resources necessary for service provision to linguistically diverse clients.

The need for the development of assessment tools for linguistically diverse clients in the Canadian context is warranted, despite the use of alternative assessment strategies such as language sampling, dynamic assessment, and naturalistic observations. Without such standardised tools, the quality of service delivery to linguistically diverse clients is compromised. Similarly, there is a critical need for developmental information and speech and language norms for the wide variety of languages represented on clinicians' caseloads. These would compliment some of the informal assessment strategies currently being used.

Well-trained interpreters are required, given their documented usefulness in the literature (Crago et al., 1991; Kambanaros & van Steenbrugge, 2004; Westernoff, 1991). Interpreters should have not only proficiency in the client's language, but also excellent interviewing skills, a knowledge of speech and language terminology, and an understanding of assessment and treatment principles (ASHA, 2004). If such interpreters were readily available to clinicians, perhaps their frequency of use would increase. Regulatory bodies and associations/organizations must work towards alleviating the financial costs associated with using interpreters.

The role of an S-LP is to support speech, language, and

communication in their clients. Therefore, it is essential that S-LPs find ways to ensure that the diversity of clients does not prevent access to quality service delivery. This study indicates that accurate assessment and appropriate treatment of linguistically diverse clients remains a challenge. It is a challenge that S-LPs must meet.

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APPENDIX A

Survey of Speech-Language Pathology Service Delivery

Q1. Are you a practicing speech-language pathologist in Canada with a current caseload?

___Yes

___No

Q2. How many years in total have you been working as a speech-language pathologist?

_____ years

Q3. Highest degree in Speech-Language Pathology (i.e., Communication Sciences and Disorders) completed:

___ Bachelors

___ Masters

___ Ph.D.

(*If 'Bachelors', participants skip Q4-Q6*)

Q4. Year Masters degree in speech-language pathology received:

_____

Q5. What was the language of instruction in your Master's program?

___ English

___ French

___ Other (please specify): _____

Q6. Where do you currently work?

_____(Province/Territory)

City/Town:_____

Q7. What percent of a full time equivalent (FTE) do you currently work (e.g., 2 days per week = 40%)?

_____%

Q8. What percent of full-time equivalent (FTE) do you currently work in the following settings? If "Other", please specify in the space provided.

Clinic	_____%
Community centre	_____%
Private practice	_____%
Preschool	_____%
School (elementary, middle school, high school)	_____%
College or University	_____%
Hospital	_____%
Rehabilitation centre	_____%
_____	_____%

Q9. List all languages you speak from most proficient (#1) to least proficient and rate your proficiency in each. (*Drop-down menu for proficiency rating - Excellent, Very good, Good, Fair, Poor, Very poor*)

	Language, *please specify*	**Reading proficiency**	**Writing proficiency**	**Speaking fluency**	**Listening ability**
1					
2					
3					
4					
5					

Q10. If you indicated that you speak more than one language, where did you first learn your second language?

___ At home
___ At school
___ In a country where that language is spoken
___ N/A

(*If "N/A", participants skip Q11 and Q12*)

Q11. At what age did you begin to use your second language in each of the following contexts? Leave blank if not applicable.

At home	_____ years
At school	_____ years
In a country where that language is spoken	_____ years

Q12. How did you learn your second language? (*Only one answer possible*)

___ From formal classroom instruction
___ Mostly formal classroom instruction but some interaction as well
___ Equally both
___ Mostly interaction with people, but some formal classroom instruction as well
___ From interacting with people

Q13. Over the past 12 months, estimate the number of your clients who were:

Children _____
Adults _____

Q14. Over the past 12 months, estimate the number of your clients with the following as their *primary* disorder. If 'Other', please specify in the space provided.

Articulation/phonology _____
Language _____
Motor speech _____
Dysphagia _____
Voice/resonance _____
Fluency _____
_____ _____

Q15. Over the past 12 months, estimate the number of your clients who were:

Monolingual English speakers _____
Monolingual French speakers _____
Monolingual in another language _____
Speakers of a non-standard English dialect _____
Speakers of a non-standard French dialect _____

Individuals who learned their first language from birth and then learned a second language after 3 years of age. _____
Individuals who learned two languages at the same time, beginning before 3 years of age. _____

Q16. Do you offer any of the following services in your clinical practice?
Check all that apply.

___ ESL services
___ FSL services

___ Accent reduction services

___ None of the above

Q17. Over the past 12 months, how many First Nations/Aboriginal clients were on your caseload?

_____

Q18. How many different languages are represented on your current caseload?

_____

Q19. Name the languages most commonly spoken by clients on your current caseload (maximum of 5).

Language, *please specify*	**Number of clients on your current caseload speaking that language**

Q20. Which strategy do you typically employ when working with linguistically diverse clients?

Linguistically diverse clients are clients who are bilingual, or non-standard dialect users, or monolingual in a language that you do not speak.

___ I assess/treat only in the languages I speak

___ I assess/treat in the client's strongest language

___ I assess/treat in all the languages that the client speaks

___ I do not work with linguistically diverse clients

(*If "I do not work with linguistically diverse clients", participants skip Q21-Q25*)

Q21. Please specify the frequency that you use the following supports or resources in working with linguistically diverse clients. If you do not have access to a given support or resource, select "N/A". If "Other supports/resources are used, please specify and rate frequency in the space provided.

	Always	**Frequently**	**Infrequently**	**Never**	**N/A**
Interpreters					
Bilingual S-LPs					
Assessment tools in the client's language(s)					
Speech and language norms in the client's language(s)					
Cultural knowledge					
Training to work with linguistically diverse clients					

Q22. What supports or resources do you find particularly useful in working with a linguistically diverse client population and why?

_____

_____

_____

Q23. How often do you use the following assessment strategies when identifying communication disorders in linguistically diverse clients?

	Always	Frequently	Infrequently	Never	N/A
Standardized tests in English					
Standardized tests in French					
Standardized tests in the client's strongest language					
Standardized tests translated into the client's strongest language					
Standardized tests adapted for a particular client					
Naturalistic observations					
Language samples					
Dynamic assessments					

Q24. Please rate the barriers that you currently face when assessing and treating linguistically diverse clients.

	Very frequent	Somewhat frequent	Frequent	Somewhat infrequent	Very infrequent
Lack of appropriate less biased assessment instruments					
Don't speak the language of the client being assessed					
Lack of knowledge about the client's culture					
Lack of knowledge about bilingualism or bilingual development					

Lack of knowledge about second language acquisition					
Lack of availability of other speech-language pathologists who speak the client's language(s)					
Difficulty distinguishing a language difference from a language disorder					
Lack of availability of interpreters who speak the client's language(s)					
Lack of knowledge of developmental norms in the client's language					
Lack of time to administer appropriate assessment.					

Q25. Do you have any suggestions about how any of these barriers could be overcome?
Please describe briefly.

Q26. Any other comments?

Self and Parental Report of Physician-identified Acute Otitis Media (AOM) in a Rural Sample

Autodéclarations et déclarations parentales d'otites moyennes aiguës identifiées par un médecin dans un échantillon de population rurale

KEY WORDS
ACUTE OTITIS MEDIA
SELF-REPORT
MEDICAL RECORDS

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Abstract

Acute otitis media (AOM) is a leading cause of family medicine consultations. Rates of AOM are traditionally determined by review of medical charts, which can be costly and time consuming. This information can also be obtained directly from patients (or parents) by self-administered surveys or personal interview. To ensure the quality of self-reported AOM as a proxy for physician-recorded diagnosis, we assessed its accuracy compared to medical report documentation. Self (and maternal) reports of AOM at outpatient consultations at family practice clinics and hospital emergency departments were collected prospectively by interview from participants in the Hutterite Influenza Prevention Study. Similar data were also collected by fax requests for medical record information to the medical facilities. We calculated AOM reporting by each data source. Sensitivity, specificity, predictive values and likelihood ratios of self-reported AOM using medical record documentation as the gold standard were determined. Compared to the medical records, the proportion of AOM cases was underestimated by participants (22% versus 16%), but this difference was not significant (p = 07). Self-report of AOM was a very specific measure (93%), but had lower sensitivity (47%) than medical records. Positive predictive value was moderate at 64% but negative predictive value was good at 86%. The positive likelihood ratio was 6.7, while the negative likelihood ratio was 0.57. Self-report of AOM in our sample had high specificity and good negative predictive value. However, reliance on self-report without verification by medical record may result in a number of false negatives, which may affect enrolment eligibility or outcome analyses in medical research.

Abrégé

Les otites moyennes aiguës (OMA) sont la cause la plus fréquente de consultation des médecins de famille. Les taux d'OMA sont traditionnellement déterminés grâce à l'examen de dossiers médicaux, ce qui peut être coûteux et nécessiter beaucoup de temps. Or, cette information peut également être obtenue directement auprès des patients (ou de leurs parents) grâce à des sondages autoadministrés ou à des entrevues personnelles. Afin de déterminer à quel point les auto-déclarations d'OMA peuvent servir d'indicateur des diagnostics établis par les médecins, nous avons comparé la précision de ces auto-déclarations à la documentation dans les dossiers médicaux. Des auto-déclarations (et déclarations par la mère) d'OMA lors de consultations comme patients externes dans une clinique familiale et des salles d'urgence en hôpital ont été recueillies de façon prospective grâce à des entrevues auprès de participants à l'étude sur la prévention de la grippe dans la communauté huttérienne. Des données semblables ont également été recueillies par le moyen de demandes d'information du dossier médical transmises par télécopieur aux établissements médicaux. Nous avons ensuite calculé le taux d'OMA pour chaque source de données. Nous avons déterminé les niveaux de sensibilité et de spécificité, les valeurs prédictives et les rapports de vraisemblance pour les OMA autodéclarées en utilisant la documentation des dossiers médicaux comme norme d'excellence. Comparativement aux dossiers médicaux, la proportion de cas d'OMA était sous-estimée par les participants (22 % contre 16 %), mais cette différence n'était pas significative (p = 07). L'autodéclaration d'OMA était une mesure très spécifique (93 %), mais avait une moins grande sensibilité (47 %) que la revue des dossiers médicaux. La valeur prédictive positive était modérée, soit de 64 %, mais la valeur prédictive négative était bonne, à 86 %. Le rapport de vraisemblance positive était de 6.7, alors que le rapport de vraisemblance négatif était de 0.57. L'autodéclaration des OMA dans notre échantillon avait un haut niveau de spécificité et une bonne valeur prédictive négative. Toutefois, l'utilisation de l'autodéclaration sans vérification du dossier médical pourrait mener à un certain nombre de faux négatifs, ce qui pourrait nuire à l'admissibilité des participants ou à l'analyse des résultats en recherche médicale.

Acute otitis media (AOM) is a frequent complication of influenza virus infection and a leading cause of family physician visits (Charles, Pan, & Britt, 2004; Heikkinen & Chonmaitree, 2003; Heikkinen et al., 2004; Monto, Gravenstein, Elliott, Colopy, & Schweinle, 2000; Vergison et al., 2010). Medical records and parent report (for children) or self-report are common data sources for epidemiological studies of AOM. Medical chart review, commonly used for assessing medical events, can be costly, labour-intensive and time-consuming (Phillips et al., 2005). For province-wide or nation-wide studies where study participants access different medical services across large geographic areas, multiple personnel must obtain the data. However, the advantage of medical record review is that it removes the burden of data collection from research participants to the research team (Fukuoka, Dracup, Ohno, Kobayashi, & Hirayama, 2005).

When it is not possible to perform clinical tests or consultations, individuals' self-reports are used to measure disease status (Strauss, Rindskopf, Deren, & Falkin, 2001). Information is often obtained directly from research participants by self-administered surveys or personal interview (Okura, Urban, Mahoney, Jacobsen, & Rodeheffer, 2004). Self-report has disadvantages; it can be inaccurate because participants may not be aware of their diagnoses, may misunderstand their diagnoses, may not recall their diagnoses, or may simply not be willing to report (Goldman, Lin, Weinstein, & Lin, 2003). However, self-report can be relatively cost efficient and organizationally straightforward to implement, especially in large community samples (Englert et al., 2010; Newell, Girgis, Sanson-Fisher, & Savolainen, 1999).

Errors in self-reports of disease status can lead to errors in epidemiological estimates, such as prevalence and relative risks related to exposures that are being studied, flawed research conclusions and inadequate health care planning (Paganini-Hill & Chao, 1993). There are reports on the predictive value of parental reports of otitis media in infants under the age of 27 months using otoscopy, tympanometry, and audiometry as the "gold standard". These studies focused on parental recognition of otitis media before screening and evaluation, rather than validation of physician identification of otitis media cases (Anteunis, Engel, Hendriks, & Manni, 1999; J. Engel, Anteunis, Volovics, Hendriks, & Marres, 2000; J. A. Engel, Anteunis, Volovics, Hendriks, & Manni, 1999). The validity of retrospectively reported otitis media, or childhood history of otitis media, has also been addressed in the research literature (Alho, 1990; Anteunis, Engel, Hendriks, & Manni, 1999; Daly, Lindren, & Giebenk, 1994; J. Engel, Anteunis, Volovics, Hendriks, & Marres, 2000; J. A. Engel, Anteunis, Volovics, Hendriks, & Manni, 1999).

The Hutterite Influenza Prevention Study is a cluster randomized controlled trial (RCT) of vaccinating healthy children in Hutterite communities against influenza. Because viral upper respiratory infections commonly precede the onset of AOM (Heikkinen & Chonmaitree, 2003; Heikkinen et al., 2004; Monto et al., 2000), study RCT participants were monitored for physician-diagnosed AOM as a potential sign or complication of influenza (Loeb et al., 2010). Using data from the RCT, we investigated how well self-(or parental) reports of AOM corresponded with physician identification in the medical records. To our knowledge, a prospective study evaluating self-reported (or parent-reported) physician diagnosis of AOM as a proxy for medical record data has not been reported in the literature.

METHODS

Study design and population

The present study is a cross-sectional analysis of data collected from the Hutterite Influenza Prevention Study. Hutterites are a communal religious group who live in self-governing, mostly thriving, technologically advanced, farming colonies and seek to actively detach themselves from the impact of the outside world. Participants from 49 Hutterite colonies participated in the trial; 22 in Alberta, 22 in Saskatchewan, and two colonies in Manitoba. Children, between the ages of 36 months and 15 years, were randomly assigned, according to colony and in a blinded manner, to receive either a standard dosing of inactivated trivalent influenza vaccine or hepatitis A vaccine. All colony members were then monitored during the influenza season for signs of respiratory-related illness. Details of the Hutterite randomized controlled trial (RCT) are described elsewhere (Loeb et al., 2010).

Self-report of AOM

Self-report data were collected by study diaries (completed by a family representative) and in-person interviews by trained research nurses from December 28, 2008 to June 23, 2009. During this period, RCT participants used family diaries to record influenza-related signs and symptoms on a daily basis. The study diaries contained checklists of 11 signs and symptoms, (fever, cough, runny nose, sore throat, headache, sinus problems, muscle ache, fatigue, ear ache, chills and ear infection). Participants and mothers (of infants) were instructed that ear infection was a physician diagnosis and distinguished from the subjective symptom of earache; that is, ear infection should be reported on the day that it was diagnosed by a health care provider at a medical consultation. Each family was given similar thermometers to take oral temperatures whenever a family

member experienced any symptoms. Fever was defined as a temperature >38 degrees Celsius.

Research nurses visited the Hutterite colonies twice per week to check diary entries and interviewed individual participants (or mothers of babies and young children) regarding outpatient health care visits made for their symptoms, including medical visit date, physician name, health care facility, location (town or city, and address, if possible), and whether antibiotics were prescribed at the consultation. This surveillance approach ensured a limited time period between medical visits and verification of self-report data, e.g., one to three days on average; and up to seven days if a participant was away from the colony at the time of the nurse visit and data were obtained at the next visit.

Physician requests for medical record information

Written permission was obtained from study participants and parents to request influenza-related medical record information from health care providers visited during study surveillance. The Canadian Medical Directory (2009 edition) and online physician registries were used to obtain contact information of physicians for whom participants had provided incomplete addresses. For each reported medical visit, a one-page "Patient Information Request" form was faxed to the medical facility asking for individual patient record data regarding diagnosis (influenza, otitis media or other respiratory illness (Table 1). The procedure was approved by the institutional review boards at McMaster University, the University of Calgary, the University of Saskatchewan, and the University of Manitoba.

Faxed requests for information were sent to medical facilities. Reminders were faxed after one month if a response had not been received. A response indicating that there was "no visit" was followed up by (at least one) fax to an alternative medical facility, based on feedback from the original responder or geography. Participation by health care provider or medical institution was voluntary. Physicians were blind to patient's self-reported data. In cases where a copy of the patient record, rather than the completed form, was faxed back, one investigator (AB) transferred the medical record information to the study form. All faxes were sent between March and September 2009.

Statistical analyses

Descriptive statistics were used to examine the study sample demographics. Individual two-by-two contingency tables were calculated for AOM reporting by data source. We calculated the proportion of participants with AOM according to the medical record information and the self-reported data. For self-report, we looked at AOM (or physician-identified ear infection) reported on the family diary (and verified by nurse interview) on the day of the medical visit; that is, we looked at same-day reporting of AOM by both data sources.

Table 1

Request for Medical Record Information Form

The Hutterite Influenza Study is being conducted by researchers from McMaster University to better understand whether immunizing school-age children against influenza can protect high-risk members of their community.

Your patient, identified on the attached consent form, has agreed to participate in this study and has given us consent to contact you about his/her recent visit to you for treatment of respiratory infection symptoms.

1. What was actual date of the patient's visit?		
2. What were the patient's symptoms? Check all that apply.	☐ Fever (≥38° C)	☐ Muscle aches
	☐ Cough	☐ Fatigue
	☐ Runny nose	☐ Ear ache
	☐ Sore throat	☐ Chills
	☐ Headaches	☐ Other, specify:
	☐ Sinus problems	
3. What was the diagnosis?	☐ Pneumonia	
	☐ Otitis media	
	☐ Other, specify:	

For the primary analysis the medical report was considered the gold standard, since participants were specifically asked to report "physician-identified" or "physician-diagnosed" ear infection. Our medical record information came from different sources with different methods of documentation. We did not elicit information regarding the methods of determining or documenting AOM and we did not evaluate the quality, accuracy or comprehensiveness of the medical records. Therefore, the medical record was used as a proximate measure of the gold standard in the analyses.

Validity of self-report in comparison to medical record documentation was assessed by calculating the following estimates: sensitivity (correctly reported positive participant reports/all positive medical records); specificity (correctly reported negative participant reports/all negative medical records); positive predictive value (correctly reported positive participant reports/all positive self-reports); negative predictive value (correctly reported negative participant reports/all negative self-reports); likelihood ratio for a positive test (sensitivity/1 – specificity); and likelihood ratio for a negative test (1 – sensitivity/specificity). Higher specificity and fewer false positive reports can lead to a higher likelihood ratio for a positive test and lower likelihood ratio for a negative test, both of which indicate better precision of reporting (Haynes, Sackett, Guyatt, & Tugwell, 2006).

Total agreement (number of concordant pairs/total sample) and kappa coefficient (and standard deviation) were computed. Kappa measures the strength of agreement beyond that expected solely by chance (observed agreement – chance agreement/1 – chance agreement), where 0 = chance agreement and 1 = perfect agreement (Cohen, 1960). To test for differences in mean number of reports per source, we used the paired Student's t-test.

Statistics were also calculated in four strata defined by sex, age group, level of risk for influenza complications, and number of sick days. The association between the stratification variables and agreement was further investigated using logistic regression analysis. The dependent variable was agreement, coded as 1 for agreement (if the participant and medical report both reported the presence of AOM or both reported the absence of AOM) or 0 for disagreement. All analyses were conducted using the Statistical Package of the Social Sciences (SPSS) version 16.0 for Windows (SPSS Inc., Chicago, IL). Significance levels were set at $p < 0.05$.

RESULTS

Characteristics of the participant sample

Of the 3,274 participants in the trial, 252 (8%) reported at least one outpatient medical visit during the study influenza season. Six participants were unable to provide sufficient identifying information for the doctor or medical facility to be contacted. Therefore, requests for medical record information were faxed for 246 reported medical visits. The first medical visit reported by participants and confirmed by medical record information were included in the sample, resulting in 176 (70%) unique medical visits (Figure 1).

The mean age of the 176 participants was 24 years; 63 (36%) were under the age of seven years, and 46 (26%) were between the ages of 23 and 49 years. Over half of the sample (99, 56%) resided in Saskatchewan, 63 (36%) in Alberta and 12 (8%) in Manitoba. There were more females (110, 63%) than males and 63 (39%) were considered at high risk for influenza complications (Table 2). Medical visits were made between January and June 2009.

Characteristics of the medical facilities

Three hundred and six initial faxes were sent to the physician offices or medical facilities; 131 fax reminders and 34 additional follow-up requests were also sent. A small number (n=11, 6%) from hospital emergency departments, opted to fax back a copy of the patient record for the specified visit; the information was then transferred to the study form by the first author (AB) (Table 2). Among the non-responders were two medical offices in Saskatchewan that declined participation in the study; 26 (10%) participants visited one of the two offices.

The 176 participants primarily visited family practice offices (80%), while almost a fifth of the sample (17%) accessed a hospital emergency department. Of the 176 medical visits, 167 (95%) were made to family doctors or general practitioners. Eighty nine individual health care providers were visited at 42 medical centres, 13 hospital emergency departments and two walk-in clinics. Almost half of the sample (48%) visited a medical facility in an urban centre, defined as an area that has more than 400 people per square kilometre and more than 1,000 people residing there (Statistics Canada 2002, 2005). Fifty-six percent sought medical care in their home province of Saskatchewan and only 8% lived and accessed medical care in Manitoba (Table 2). In total, participants visited 32 towns, cities or villages across the three provinces for medical care.

AOM reporting by data source

The proportion of physician-identified AOM (22%) was underestimated by participant self-report (16%) by 6%. This difference was not significant (95% CI -4.0 to 11.8, $p = 0.068$ (Table 3).

Of the 38 cases of AOM documented in the medical record, 28 (74%) were six years old or younger. Of the

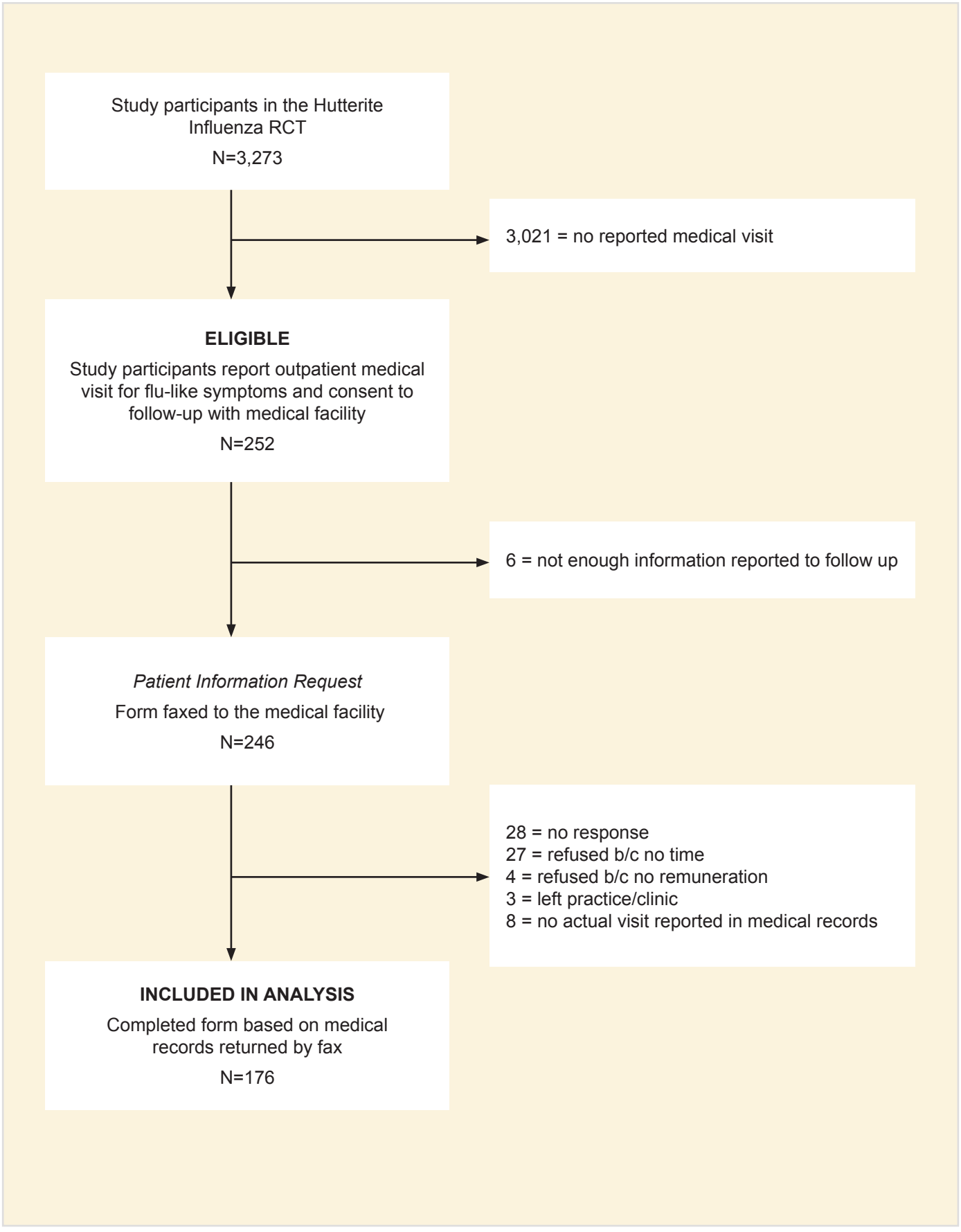

Figure 1
Flow diagram of participants included in the study analyses

Table 2

Baseline demographic information of the 176 participants and characteristics of the participating medical facilities

Characteristic	No (%)
Participant	
Age groups, years	
Less than 7	63 (35.8)
7-15	27 (15.3)
16-22	13 (7.4)
23-49	46 (26.1)
50-64	15 (8.5)
65 and older	12 (6.8)
Mean age, years (SD)	23.7 (22.6)
Province	
Alberta	63 (35.8)
Saskatchewan	99 (56.3)
Manitoba	14 (8.0)
Female	110 (62.5)
High risk for influenza complications	68 (38.6)
Medical facilities	
Type of health care service	
Family practice/medical centre	140 (80.0)
Hospital emergency department	30 (17.0)
Walk-in clinic	6 (3.4)
Speciality of health care provider	
Family medicine/general practice	167 (94.9)
Emergency medicine	5 (2.8)
Pediatrician	2 (1.1)
Nurse practitioner	2 (1.1)
Urban area*	84 (47.7)
Fax response	
Completed form	165 (94)
Medical record	11 (6)

*Urban area = (population density = >400 people per sq. km) + (population = > 1,000 people) {859 Statistics Canada, 2003}

Table 3

Characteristics of reported acute otitis media (AOM) by data source

Patient characteristic	Presence of AOM	
	Medical record report n=38	Self- or maternal report n=28
Age, years, n (%)		
< 2	16 (42.1)	7 (25.0)
2-7	12 (31.6)	11 (39.3)
Sex, male	25 (65.7)	16 (57.1)
Prescription for antibiotics	34 (89.5)	27 (96.4)
Amoxicillin	23 (67.6)	13 (48.1)
Azithromycin	2 (5.9)	4 (14.8)
Amoxicillin/clavunate	3 (8.8)	2 (7.4)
Cefprozil	2 (5.9)	3 (11.1)
Ciproflaxin	2 (5.9)	1 (3.7)
Symptomatic	37 (97.4)	27 (96.4)
Fever	27 (71.1)	6 (21.5)
Earache	25 (65.8)	8 (28.6)
Cough	23 (60.5)	17 (60.7)
Runny nose	15 (39.5)	11 (39.3)
Sore throat	13 (34.2)	6 (21.4)
Self-reported sick days at medical visit		
1 - 3	15 (38.5)	12 (42.9)
4 or more	20 (52.6)	14 (50.0)

28 cases of AOM self-reported cases, 18 (64%) were six years old or younger (Table 3). Of the 63 (36%) children under the age of seven in the sample, 28 (44%) had a classification of AOM in the medical record; and 18 (28.6) self-reported AOM. All but one (37, 97%) of the documented AOM cases and the self-reported cases (27, 96%) were symptomatic at the time of the medical visit. The most frequently reported symptoms were fever, earache, cough and runny nose. Physicians reported that 90% (34 out of 38) of AOM cases were prescribed antibiotics. According to the research participants, all 28 cases were given a prescription and 27 (96%) provided the name of the antibiotic (Table 3).

Assessment of self-reported AOM

Using medical record documentation as the gold standard, self-report of AOM was a very specific measure (93%), but had lower sensitivity (47%) (Table 4). The high specificity indicates the participant's very good ability to accurately report not having AOM. However, the sensitivity means that participant self-report failed to identify more than half of AOM cases documented in the medical records. The probability of medical documentation of AOM in a participant, who reported AOM, or positive predictive value, was moderate with an estimate of 64%. That is, the medical records confirmed 64% of the self-report of AOM. The probability of not having AOM according to the medical records in a participant, who did not report the diagnosis, or negative predictive value, was good at 86%. The likelihood ratio of having AOM was 6.7 and the likelihood ratio of not having the AOM was 0.57, indicating moderate exactness with the medical record. The kappa estimate was 0.44, which according to Landis and Koch (1977) indicates moderate agreement. Prerequisites for high kappa are good agreement and a fairly even distribution between positive versus negative responses. That is, the kappa coefficient is sensitive to both prevalence and bias

(Feinstein & Cicchetti, 1990; Sim & Wright, 2005).

Indices for self-reported AOM were not affected by age, sex, number of sick days or influenza risk status. The results of logistic regression analyses showed that none of the variables examined were significantly associated with agreement.

DISCUSSION

We found good agreement (83%) between self-(and maternal) reported AOM and documentation in the medical record. Our estimates indicated that participants were quite good at identifying they did "not" have AOM, but poorer at identifying the actual diagnosis of AOM assuming medical record was the gold standard. Specificity of self-report remained high across all stratified variables (>89%). The overall sensitivity was modest (47%) and the positive predictive value was a moderate 64%. That is, 47% of participants with AOM documented in their medical records reported the diagnosis and 64% of participants with self-(or maternal) reported AOM had confirmation of diagnosis from medical record abstraction.

The low sensitivity and moderate positive predictive value may have resulted from limitations at each source. By having the physician or medical facility staff complete the "request for information" forms, we avoid errors associated with researcher reliability, legibility, and interpretability (Horowitz, 1986). Studies have shown that illegibility and conflicting data in a single medical note occur frequently. We also avoided researcher errors related to the ability to read the medical record and abstract subject information without bias (Nagurney et al., 2005). This method made it possible to obtain medical chart data from multiple medical practices and hospitals in various geographic areas across three provinces without being exceedingly labour-intensive and costly. However, medical records are not the perfect criterion standard for the presence of AOM. Several studies have found non-reporting and misreporting in medical records (Marrie, Durant, & Sealy, 1987; Bush, Miller, Golden, & Hale 1987). One study found underreporting in general practice records for chronic conditions and multiple health problems presented at one medical visit (Jordan, Jinks, & Croft, 2006). Busier physicians may record less in the medical record or delay recording, leading to recall bias (Ferrante et al., 2008). The process of abstracting information from the medical chart itself is also subject to imprecision (Pakhomov, Jacobsen, Chute, & Roger, 2008). We cannot assume that data were abstracted in a consistent manner across clinical sites. Furthermore, medical records accessed for this analysis were not written or kept for the purposes of this study (Fathelrahman, 2009) and, therefore, are subject to information bias. Documentation may have been guided by institutional policy, physician training and physician preference, rather than research purposes (Kimberlin & Winterstein, 2008).

Clinicians were not asked to provide information about how the diagnosis was made. According to the American Academy of Pediatrics, otitis media is confirmed if all of the following three criteria are present: 1) recent or abrupt onset of symptoms, 2) the presence of middle ear effusion (defined by one of the following: bulging of the tympanic membrane, limited or absent mobility of the tympanic membrane, air fluid level behind the tympanic membrane, otorrhea), 3) evidence of middle ear inflammation (either distinct erythema of the tympanic membrane or distinct otalgia) (American Academy of Pediatrics, Subcommittee on Management of Acute Otitis Media, 2004). We cannot determine whether physicians followed these or other criteria to diagnose AOM. We also did not assess what procedure was used in determining AOM, such as visualization (otoscopic examination) or functional testing of the eardrum (tympanetry, acoustic reflex) (Vergison et al., 2010). The majority of clinicians in our sample were family doctors or general practitioners; diagnostic ability, training and certainty may differ within this group and from other health care professionals (Froom, 1990; Linsk & Cooke, 2004; Nozza, Bluestone, Kardatzke, & Bachman, 1994). Given these possible limitations, documentation in the medical record was used as a proximate measure of the gold standard. Therefore, reproducibility, rather than accuracy, of self-report, was examined.

Self-reported information can be also imprecise for various reasons, including underreporting, lack of motivation to report accurately, and poor compliance. It is possible self-report data may be systematically biased. For example, it may be that the Hutterites, because they have limited formal education and low health care literacy, were more likely to make errors in reporting the details of their medical visits. Another explanation is that clinicians provided insufficient information about AOM or communicated ineffectively so that patients or their parents misunderstood or quickly forgot the diagnosis (Westbrook, McIntosh, Rushworth, Berry, & Duggan, 1998). However, it is unknown exactly what physicians communicated to patients.

The two sources of data assessed in this study are forms of self-reports. Unlike survey methods that result in "unfiltered" self-reports, both medical record and participant data were filtered through the additional questioning of the physician or research nurse (Corser et al., 2008). The adequate capture of self-report data relied on both the participant's reporting and the research nurse's recording of the information. Likewise, the adequate

capture of clinical data required the patient's reporting and the health care provider's documentation of the information (Babcock, Merz, Dubberke, & Fraser, 2008). However, the contexts and perspectives of self-reports are different (Kraemer et al., 2003). Differences in physician elicitation of health information can be compared to the RCT's focus on consistent and systematic collection of specific events.

In many studies, participants are asked if they have a medical problem, but not whether it has been identified by a health care professional (Okura et al., 2004). In this study, participants were asked about physician identification of AOM immediately following the medical visit. Unlike research using retrospective questionnaires, we attempted to monitor events as they occurred as close to "real time" as feasible. However, there is still the potential for recall bias between the actual visit and reporting for events for the study. Severity and recurrence of AOM may also have impacted reporting and agreement between sources, but this was not assessed.

AOM is a common infection for which antibiotics are prescribed, especially in children (Autret-Leca, Giraudeau, Ployet, & Jonville-Bera, 2002; Nyquist, Gonzales, Steiner, & Sande, 1998). Data regarding antibiotic prescriptions were collected from participants following medical visits. Almost all participants (96%) who reported AOM also reported getting an antibiotic prescription. Receipt of a prescription for antibiotics may have served as a prompt for AOM reporting.

To compare data sources, we limited the analyses to participants whose physician or hospital had provided medical record information, i.e., participants who had data from both sources. Thirty percent of the fax requests were not completed; responding physicians or medical facilities may differ from non-responders, resulting in self-selection bias. It is possible that agreement between sources would be different for these participants with missing medical record data.

Research on health services utilization by Hutterite colony members is lacking in the medical literature. This study contributes to the knowledge of this understudied group. Despite the inclusion of medical records abstracted from diverse medical facilities, generalizability may be limited by utilizing a homogeneous cohort; it is possible that agreement with the medical record may vary for other outpatient populations. However, we suspect that the underestimation of the incidence of AOM is likely to be generalizable to other non-Hutterite patient groups and with research methodologies that are less stringent than our surveillance methods; however such study designs may result in lower specificities or negative predictive values.

Research studies commonly have access to only one source of data and may not compare reporting to other data sources. The two data sources in this study provided insights into the congruence between two methods. Our findings suggest that AOM reports from study participants may not be entirely accurate and may result in a number of false negatives without supplemental data collected from medical records. Reliance on self-report without comparison to medical records may lead to errors in determination of AOM rates and may affect enrollment eligibility or outcome analyses in research studies. The decision regarding which source of data to use will depend on the outcome of interest; whether findings are used for clinical decision making, population surveillance, outcome studies or other research purposes, availability of resources; and whether a false positive or false negative is of more concern (Ferrante et al., 2008).

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Prosthodontic management of hypernasality: Two very different cases

Gestion de l'hypernasalité à l'aide de prothèses vélopalatines: deux cas très différents

KEY WORDS
CLEFT PALATE
HEAD AND NECK CANCER
PALATAL LIFT PROSTHESIS
SPEECH BULB PROSTHESIS
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BIOFEEDBACK

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Abstract

This study describes two cases of structurally related hypernasality that were treated with speech bulb prostheses. The first case, a young woman with hypernasality of unknown etiology, was treated with a combined palatal lift and speech bulb in order to improve velopharyngeal closure and oral-nasal balance in speech. In order to help her maximize the benefit of the prosthesis, the patient practiced with online nasalance and pitch biofeedback. However, it was only when she resorted to a vocal play manoeuvre that she was able to consistently improve her velopharyngeal closure with the speech bulb. The second case had undergone radiation therapy for a brain stem tumour, resulting in a velar paralysis. The patient was first treated with a standard acrylic speech bulb prosthesis, which lead to only moderate improvement of her speech. An experimental prosthesis with a flexible silicone end piece was created in order to achieve a greater occlusion of the velopharyngeal opening. The two cases illustrate that speech bulbs are currently not being used to their full potential and that more research is needed to improve both the behavioural interventions and the prosthesis design to achieve consistent success for all patients.

Abrégé

Cette étude décrit deux cas d'hypernasalité à base structurelle traitée à l'aide d'une prothèse vélopalatine obturatrice. Le premier cas, une jeune femme avec une hypernasalité dont l'étiologie est inconnue, a été traitée à l'aide d'une combinaison d'une prothèse vélopalatine élévatrice avec obturateur pour améliorer sa fermeture vélopharyngée et son équilibre oral-nasal pendant la parole. Afin de l'aider à maximiser les avantages de sa prothèse, la patiente a effectué des exercices de rétroaction biologique en ligne de la nasalance et de la fréquence. Cependant, ce n'est que quand elle a eu recours à une manoeuvre de jeu vocal qu'elle a été en mesure d'améliorer de façon consistante sa fermeture vélopharyngée avec sa prothèse obturatrice. Le deuxième cas est une patiente qui avait reçu de la radiothérapie pour une tumeur au tronc cérébral et qui avait par conséquent une paralysie du vélum. La patiente a initialement été traitée à l'aide d'une prothèse obturatrice standard en acrylique, mais cet appareillage n'a mené qu'à une amélioration modérée de sa parole. Une prothèse expérimentale avec un embout flexible en silicone a été créée pour l'aider à produire une meilleure occlusion de l'ouverture vélopharyngée. Ces deux cas démontrent que les prothèses obturatrices ne sont pas actuellement utilisées à leur plein potentiel et qu'il existe un besoin de recherche pour améliorer tant les interventions comportementales que les conceptions de prothèses de façon à atteindre un succès répété avec tous les patients.

INTRODUCTION

The velopharyngeal mechanism is responsible for the regulation of the oral-nasal flow of air and acoustic energy in speech. Successful oral-nasal balance is an important prerequisite for intelligible and socially acceptable speech. Patients with hypernasal resonance disorders may experience social stigmatization (Kummer, 2008). Hypernasal resonance can be a consequence of various structural, neurological and functional etiologies.

The velopharyngeal closure mechanism is complex and relies on a number of muscles for its function. According to the seminal description by Fritzell (1969), the levator veli palatini elevates the velum and pulls it in a cranio-dorsal direction towards the posterior pharyngeal wall. Activity of the palatopharyngeus medializes the lateral pharyngeal walls, which narrows the pharyngeal space (Moon, Smith, Folkins, Lemke, & Gartlan, 1994). Hypernasal patients, most notably those with cleft palate, also sometimes exhibit muscle bulges in the posterior pharyngeal wall. This phenomenon is called 'Passavant's ridge' and is attributed to the pharyngeal constrictor muscles (Glaser, Skolnick, & Shprintzen, 1979). The uvular muscle contracts the velum along its length and contributes to the elevation of the posterior velum towards the posterior pharyngeal wall (Azzam & Kuehn, 1977; Huang, Lee, & Rajendran, 1997).

Clinical research using transnasal endoscopy has found four typical patterns of velopharyngeal closure. Croft, Shprintzen and Rakoff (1981) described a coronal closure pattern (characterized by mainly velar elevation), a sagittal pattern (characterized by approximation of the lateral pharyngeal walls), and a circular pattern (characterized by joint movement of the velum and the lateral pharyngeal walls). The authors also found a variation that was observed in patients with cleft palate. This fourth pattern was characterized by circular closure with a Passavant's ridge.

The effective treatment of hypernasal resonance disorders poses significant challenges. Many patients, such as head and neck cancer patients with velar resections or neurological patients with paralyses, will not be able to control their velopharyngeal closure mechanism at all. Other patients, such as hypernasal patients with a repaired cleft palate, will have better potential for velopharyngeal closure. However, while the structures contributing to velopharyngeal closure are highly sensitive to touch (which may trigger a gag reflex), they offer almost no proprioceptive information. This means that the speaker has virtually no information about the position and the movement of the velopharyngeal sphincter. As a result, teaching velopharyngeal closure to a patient with a hypernasal resonance disorder is difficult and may not always lead to a successful outcome (Ruscello, 1997). A major focus of the treatment of hypernasality has been to change the geometry of the velopharynx, with either surgical or prosthodontic interventions. The goal of these procedures is to reduce the size of the velopharyngeal gap, with the hope that the client will then find it easier to achieve velopharyngeal closure (Kummer, 2008; Peterson-Falzone, Hardin-Jones, & Karnell, 2001).

The surgical approaches for the treatment of hypernasal resonance disorders are primarily used for patients with cleft palate and comprise velopharyngeal operations such as pharyngeal flaps or pharyngoplasties (Peterson-Falzone et al., 2001). However, surgical therapy may not be feasible or desirable for all patients. Another, less commonly used approach to treat patients with hypernasality of different aetiologies is prosthodontic treatment. There are two types of prosthodontic appliances to support velopharyngeal closure. Palatal lifts are shoehorn-shaped appliances that serve to elevate a velum that is sufficiently long but does not elevate sufficiently. Speech bulbs (also sometimes called pharyngeal obturators) are used to partially fill the velopharyngeal space when there is insufficient velar tissue. The patient can use the lateral and posterior pharyngeal walls to make contact with the speech bulb to close off the nasopharynx. The two designs may be combined to maximize the effectiveness of the appliance (Esposito, Mitsumoto, & Shanks, 2000). Compared to surgical interventions, prosthodontic interventions are less invasive, less expensive and easily reversible.

Neither palatal lifts nor speech bulbs can be made so big that they would fill the velopharynx completely because this would interfere with the nasal air passage, make speech hyponasal, and cause discomfort during swallowing (Esposito et al., 2000). Therefore, in many cases, speech therapy has a vital role following the fitting of a palatal appliance, when the patient has to learn to actively use the appliance. However, behavioural modification of the velopharyngeal closure mechanism is notoriously difficult. Velopharyngeal closure is a complex, non-volitional movement. While one can clearly determine the position of the tongue tip in one's own mouth, the state of the velopharyngeal sphincter is inaccessible to introspection and voluntary control.

Despite the prosthodontist's and the speech-language pathologist's best efforts, many patients will only make moderate improvement after a palatal appliance has been fitted. The appliance will passively take up velopharyngeal space and mildly reduce the hypernasality. Patients who can actively use the appliance by closing their velopharyngeal sphincter around it will often be able

to achieve a near-normal oral-nasal balance in speech. However, it is often difficult to optimize the device for both speech and swallowing.

Speech-Language Pathologists struggle to find ways to facilitate velopharyngeal learning for patients with hypernasal resonance disorders. Kummer (2008) stresses the role of biofeedback in the therapy of hypernasality. The techniques she discusses range from simple paper air paddles and listening tubes to visual biofeedback using a nasometer. The biofeedback allows the patient to anchor him- or herself in a different perceptual modality.

This paper describes two case studies of hypernasal patients who were fitted with speech bulb/ palatal lift appliances. The first case illustrates how a palatal lift appliance and different biofeedback techniques can be used successfully to significantly reduce a patient's hypernasality. The second case describes a scenario in which a re-design of the palatal lift appliance was used to help a hypernasal patient who could not be expected to make active use of the appliance.

CASE DESCRIPTION 1: JASMINE

Jasmine (name changed), was a 19-year-old female patient. She spoke fluent English with the accent that is typical for Southern Ontario. The patient was also fluent in two other languages. Jasmine was referred to the fourth author because of persistent hypernasality of unknown etiology. The patient reported that she had been hypernasal all her life. Her velum looked normal but did not elevate sufficiently on oral inspection. In order to evaluate the velopharyngeal sphincter in greater detail, a multi-view videofluoroscopic exam with barium contrast was conducted. The anterior-posterior view demonstrated active lateral pharyngeal walls that approximated moderately well during speech. In the lateral view (Figure 1), the velum appeared sufficiently long. The anterior portion of the velum elevated during speech production but the posterior aspect (around the uvula) sagged on elevation. Velopharyngeal closure was complete during swallowing. While the imaging data appeared consistent with occult submucous cleft palate, no definite diagnosis was reached and a genetic test for 22q11 microdeletion syndrome with the fluorescence in situ hybridization technique (FISH; Driscoll et al., 1993) was negative. Jasmine reported that at least one other member of her extended family presented with a similar form of hypernasality but no additional family members were evaluated.

Since Jasmine did not wish to undergo surgery, she was referred to the second author for prosthodontic treatment. The second author decided to construct a combined speech bulb/ palatal lift prosthesis that

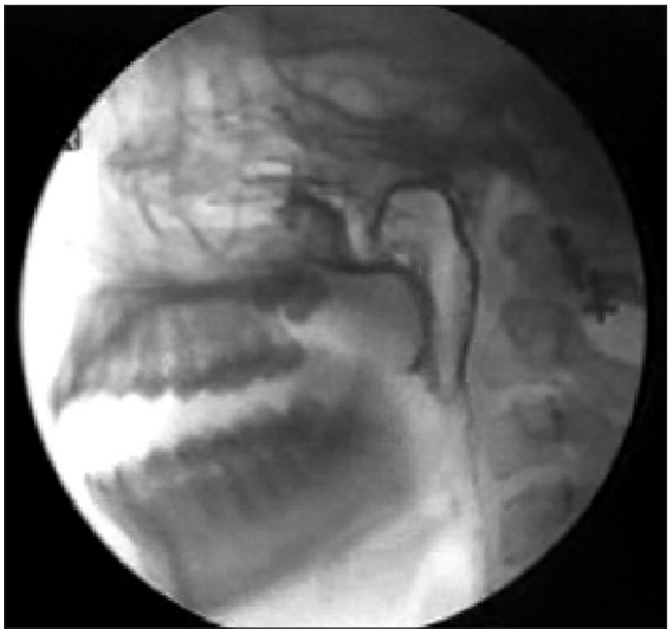

Figure 1. Lateral videofluoroscopic view of Jasmine's vocal tract. This frame demonstrates maximum velar elevation during speech. Despite the maximum elevation, there is a considerable gap between the velum and the posterior pharyngeal wall. The velum also does not show the knee-shaped posterior eminence that often accompanies velar elevation in normal speakers.

elevated the velum along its whole length (Figure 2). The bulb extension at the end of the lift appliance was designed to provide additional mass in the centre of the velopharyngeal tract. This prosthesis was fabricated and adjusted over a series of appointments using nasoendoscopic assessment. When a satisfactory shape had been reached, Jasmine was seen by the first author for an acoustic and perceptual appraisal at the Voice and Resonance Laboratory at the University of Toronto.

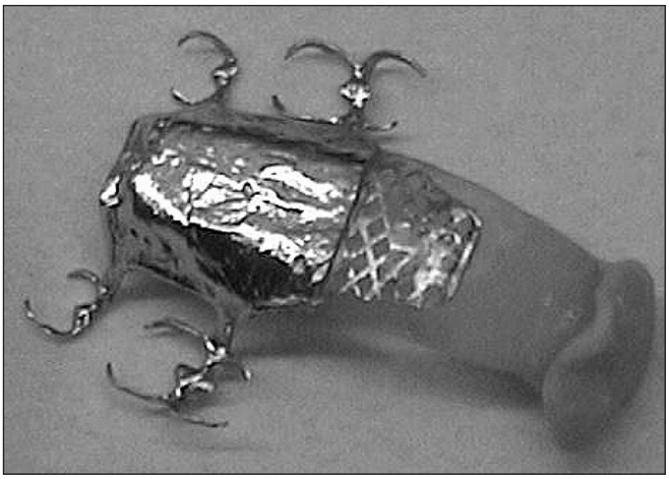

Figure 2. Jasmine's combined palatal lift/speech bulb appliance. The anterior part of the appliance was designed to minimize its long-term effects on the gums around the teeth. The uvula fit into the 'notch' on the anterior side of the bulb, which also gives an indication of the size of the gap to the posterior wall of the pharynx.

Jasmine's nasal resonance was evaluated using the NasalView nasometer (Tiger DRS, Seattle, WA 98125). The NasalView (Awan, 2001) allows the clinician to evaluate the oral-nasal balance of a speaker. The measurements are made with a sound separation plate with separate microphones for the nose and the mouth. The separate sound signals from the mouth and the nose are recorded to a computer and analyzed. The NasalView software allows the experimenter to display the sound signals and measure the 'nasalance' of the speaker (i.e., the proportion of nasal to oral resonance). Research has demonstrated that nasalance values are closely related to a speaker's perceived nasal resonance (Hardin, Van Denmark, Morris, & Payne, 1992).

First, Jasmine's nasal resonance without the prosthesis was determined. It was found that her nasalance score for the Zoo Passage (Fletcher, 1978) was 52%. The normal scores for this passage when measured with the NasalView have been reported to be around 21-23% with a standard deviation of 5% (Awan, 2001; Bressmann, 2005). The Zoo Passage is a standard text passage without nasal consonants, which is used for the assessment of hypernasal resonance disorders. Jasmine's scores were more than double the expected, which confirmed the perceptual impression of severe hypernasality. The recording was repeated with the prosthesis in place. Her nasalance values improved to 47%. Perceptually, a slight improvement was noted but Jasmine was still severely hypernasal.

While minor improvement was noted with the prosthesis, the overall result was not satisfactory. To help the patient further reduce the hypernasality, the real-time biofeedback feature of the NasalView was used. In this mode, a nasalance trace is displayed on the computer screen (Figure 3). Jasmine was instructed to 'move the line towards the bottom of the screen when you speak'. She wore the prosthesis during these exercises. Jasmine achieved a little improvement on some of the sustained vowels but was not able to consistently transfer this improvement to words or sentences.

During a second session of nasalance feedback, Jasmine was instructed to try different forms of vocal play. If patients can imitate different voice qualities or get into a vocal character, this can sometimes facilitate the modification of the voice or the nasal resonance. Jasmine struggled with this exercise. She found it difficult to raise or lower her habitual pitch and loudness for speaking, let alone change her resonance. However, the exercise prompted her to demonstrate a vocal quality, which she referred to as her 'baby voice'. Jasmine reported that she sometimes used this vocal character with family and friends (mainly for comic relief). The 'baby voice' was characterized by a high pitch (264 Hz, as opposed to her regular fundamental frequency of 220 Hz), a rough voice quality, and pronounced pharyngeal constriction. Perceptually, this resulted in a child-like voice quality. When Jasmine used her 'baby voice' without the prosthesis in place, her nasalance values dropped immediately to 39%. Initially, she had a difficult time producing the 'baby voice' with the prosthesis in place. Jasmine experienced gagging and discomfort, probably because the pharyngeal constriction associated with the 'baby voice' brought the pharyngeal walls in contact with the acrylic speech bulb.

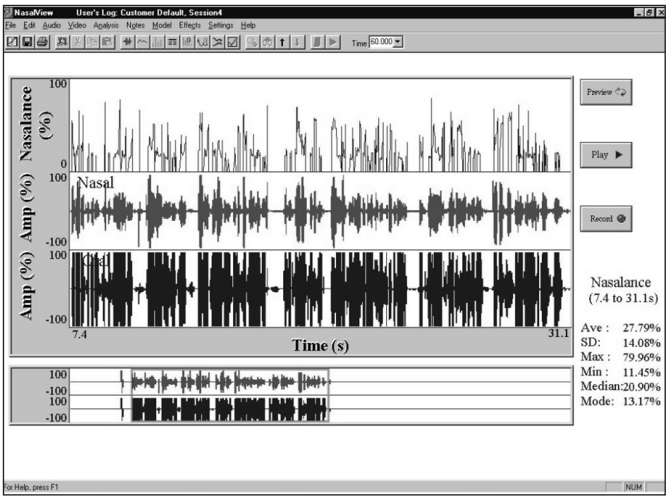

Figure 3. Screenshot from the NasalView software, showing Jasmine's production of the Zoo Passage during the final session. The patient is wearing the speech bulb/palatal lift appliance and constricting her pharyngeal walls. The nasalance trace is displayed together with the oral and nasal sound signals.

By the third session, Jasmine's pharynx was desensitized and she was able to produce the 'baby voice' with the prosthesis in place. However, her voice was still rough and her fundamental frequency was unacceptably high. When a sound recording was played back to her, Jasmine agreed that the quality and pitch of the voice were undesirable. However, she was initially unable to lower her voice while still maintaining the pharyngeal constriction. The Real Time Pitch module of the MultiSpeech software (MultiSpeech 3700, KayPentax, NJ 07035-1488) was used to provide her with online feedback about the fundamental frequency of her voice. The Real Time Pitch software displays the fundamental frequency of the speaker as a line on the computer screen. With this visual feedback, Jasmine was quickly able to lower her fundamental frequency to her habitual pitch.

For the rest of the third session, Jasmine practiced wearing the prosthesis while constricting her pharynx without raising her fundamental frequency. She was provided with online visual feedback from the NasalView. A nasalance recording demonstrated a value of 28% nasalance for the Zoo Passage. Perceptually, Jasmine was

as close to normal as could reasonably be expected after only three sessions of training. She was able to transfer the new vocal quality to phonetically balanced reading passages and spontaneous speech towards the end of the session. However, she continued to experience difficulties with quick nasal to oral transitions where it often took her a short moment to constrict her pharynx again. Given Jasmine's rapid progress, it was likely that further biofeedback sessions could have helped to further improve and consolidate her oral-nasal balance. Unfortunately, she was scheduled to return to her native country and therapy could not be continued.

Jasmine was seen again at the Voice and Resonance Laboratory during a visit to Toronto six months later. At that time, new nasalance recordings with the NasalView were made to check her progress. The recordings showed a score of 23% nasalance for the Zoo Passage with the prosthesis in place. This indicated that Jasmine had not lost the skill of constricting her pharynx and lowering her pitch with the prosthesis in place. However, she had not improved her nasal-oral transitions in phonetically balanced reading passages and spontaneous speech. Jasmine had not sought the help of a Speech-Language Pathologist in her home country and admitted to not practicing regularly. Nevertheless, she reported that people were able to understand her more easily with the prosthesis in place and that she felt more confident about her speech. Overall, she expressed satisfaction with the treatment.

CASE DESCRIPTION 2: LISA

Lisa (name changed), a 17-year-old female patient, underwent a resection of a brain stem tumour, which, as a side effect of the radiation therapy, resulted in a flaccid paralysis of the velum and pharynx. The patient was hypernasal and her velum did not elevate sufficiently on oral inspection. Because the nature and the extent of the velar paralysis were readily apparent, videofluoroscopic and endoscopic exams were not undertaken.

Owing to the extent and nature of velar paralysis, Lisa was not a good candidate for pharyngeal flap surgery. Therefore, she was referred to the third author for prosthodontic treatment. The third author constructed a combined speech bulb/ palatal lift prosthesis that elevated the velum along its whole length (Figure 4), similar to the prosthesis made for Jasmine.

Lisa's nasal resonance was evaluated using the NasalView. Her nasal resonance when reading the Zoo Passage without the prosthesis was 58%. The recording was repeated with the prosthesis in place. Her nasalance values improved to 55%. Perceptually, a slight improvement was noted but Lisa was still severely hypernasal.

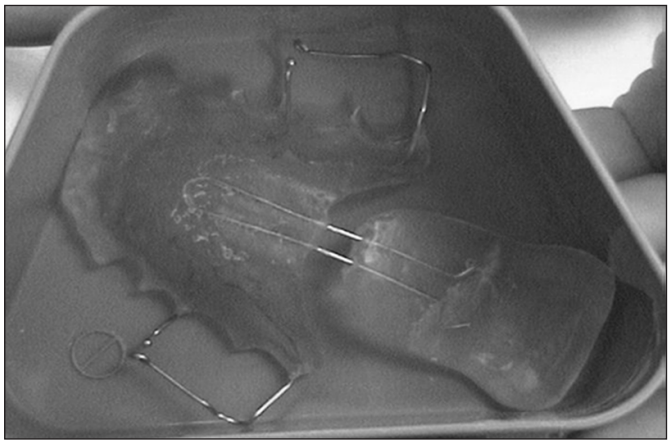

Figure 4. Lisa's combined palatal lift/ speech bulb appliance.

Because the patient experienced persistent hypernasality with the prosthesis, it was decided to redo the prosthesis with a different material to achieve a better occlusion of the velopharyngeal sphincter. Vogel, Sauermann & Ziegler (1996) first described a redesigned palatal lift appliance with a soft silicone end piece. Vogel (2001) demonstrated the usefulness of the Palatoflex appliance with a group of 23 dysarthric patients with different etiologies. The prosthesis consists of a removable dental appliance with a posterior rod with retention hooks. The metal rod supports the palatal lift extension. The lift is made from a flat sheet of silicone rubber which is tapered to paper-thickness. The thin edges of the prosthesis increase patient comfort with the appliance. Because the prosthesis is relatively thin and pliable, it is also possible to make the device larger than an acrylic prosthesis. Vogel (2001) argues that the pliability of the extension reduces patient discomfort during swallowing. One note of caution that should be extended to readers: a retention rod may be prone to mechanical failure if it is supporting an extensive lift. This could potentially result in the extension coming loose, with subsequent occlusion of the airway. If any signs of stress appear on the prosthesis, the patient should contact their prosthodontist immediately.

The third author made an appliance for Lisa that was based on the Palatoflex design. The soft silicone rubber extension was made from Implantech silicone block. This material has a durometer grade of 40 (Implantech Associates, Ventura, CA 93003-7602). Durometry determines the hardness and resistance of a material to indentation or deformation. The appliance is shown in Figure 5. Since the patient had already learned to tolerate a hard acrylic speech bulb in her pharynx, she was able to tolerate the large soft silicone attachment very well. Because of the experimental nature of the prosthesis, the patient was instructed to check the device carefully for signs of wear and tear on a daily basis. The patient was

also instructed not to wear the appliance while eating and drinking, during sleep, or during physical exercise.

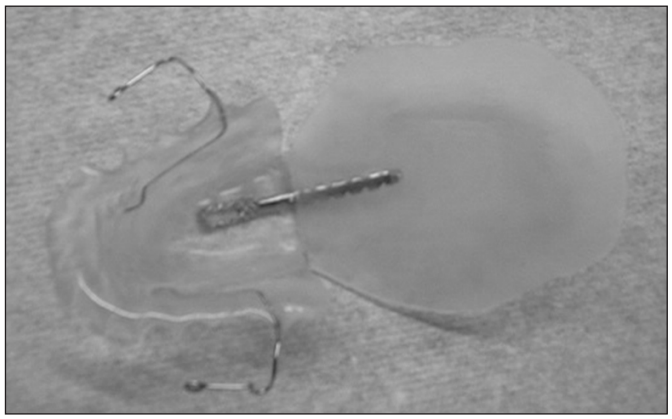

Figure 5. Lisa's Palatoflex-style appliance. The posterior extension of the appliance is made from flexible silicone. The silicone is held in place with a retention rod. The silicone is tapered so that the posterior and lateral edges of the attachment are paper-thin.

With the silicone extension, a NasalView recording of the Zoo Passage indicated a mean nasalance score of 38%, which was closer to the range of normal speakers of 21-23% (Awan, 2001; Bressmann, 2005). Lisa's voice quality with the appliance had a hyponasal quality, owing to the extensive obturation of her velopharyngeal space. This was further underscored by the nasalance scores for the Nasal Sentences (Fletcher, 1978). Lisa obtained a nasalance value of 33% with the appliance. For normal speakers, the scores for the Nasal Sentences have been reported to be around 56% with a standard deviation of 5% (Bressmann, 2005). Hyponasal speech is not normal but it is more intelligible and socially acceptable than hypernasal speech (Shprintzen, Lewin, & Croft, 1979; Sullivan, Marriman, & Mulliken, 2010).

DISCUSSION

The generalizability of any case study is necessarily limited, and the findings may not necessarily be repeatable with different patients. Nevertheless, the present case studies afford us interesting insights into the prosthodontic management of hypernasal resonance disorders.

The first case, Jasmine, illustrates the importance of both biofeedback and vocal play in the therapy of a hypernasal resonance disorder. The successful remediation of hypernasal resonance continues to be a challenging conundrum in Speech-Language Pathology. One of the main recommendations for treatment is to use biofeedback to externalize the effects of velopharyngeal movement for the patient (Kummer, 2008). This treatment approach assumes that the patient will be able to recognize his or her own successful attempts based on the biofeedback, develop a new motor strategy, and then incrementally improve the outcomes using further biofeedback.

On the other hand, Stemple (2000) recommends exploring the patient's abilities for vocal play. According to his recommendations, a hypernasal patient should be instructed to try to 'speak like you have a cold' (i.e., try to find a hyponasal voice quality). For most hypernasal patients, such an instruction would be unrealistic and would only serve to confuse the patient. However, for an individual who can get into a different vocal character, such vocal play can greatly facilitate the learning process and the transfer to everyday speech.

In the present case, it was the combination of biofeedback with a vocal play manoeuvre (Jasmine's 'baby voice') that lead to a successful therapy outcome. It was only when the patient was encouraged to experiment with a different way of producing voice that her nasalance values and the perceptual impression of hypernasality changed markedly. The 'baby voice' apparently enabled Jasmine to achieve pharyngeal constriction and reduce the diameter of her velopharyngeal opening and to contact the palatal lift/ speech prosthesis with her lateral pharyngeal walls. Once this crucial step had been achieved, the biofeedback became more useful to the patient and she was able to improve her oral-nasal balance. With the additional pitch feedback, Jasmine was able to also drop her pitch and to achieve an acceptable conversational voice. This underlines the observation by Peterson-Falzone et al. (2001) that "if biofeedback is to be useful, it must be used with techniques capable of establishing skilled patterns of opening and closing the velopharyngeal port during connected speech" (p. 310).

While vocal play turned out to be a central building block for the therapy of the present patient, it cannot be stressed enough that the therapist must exercise utmost caution when encouraging a patient to make radical changes to their voice quality or to go to extremes in their vocal range. Since the velopharyngeal sphincter is not easily available to kinaesthetic or proprioceptive feedback, a patient attempting to achieve velopharyngeal closure will often build up substantial muscle tension in the neck area. Consequently, patients who try to improve their velopharyngeal closure may inadvertently lift their larynx and squeeze their vocal folds, thus putting themselves at risk for developing a voice disorder (Peterson-Falzone et al., 2001). The patient Jasmine in the present case study exhibited vocal roughness and described a feeling of physical strain when first employing the 'baby voice' in the second session. The experimenters were aware of the risks to her voice and focused the third therapy

session on modification of the fundamental frequency in order to achieve a voice quality that was comfortable and sustainable for the patient.

The second case, Lisa, presented a very different scenario. Because of the velopharyngeal paralysis, Lisa did not have the same movement capacities and potential for behavioural therapy as Jasmine. The treatment approach for this patient therefore focused on maximizing her oral resonance with an appliance that would reduce her velopharyngeal gap during speech. Lisa's acrylic speech bulb prosthesis afforded her only a marginal improvement of her nasalance values. The new prosthesis based on the Palatoflex design (Vogel et al., 1996; Vogel, 2001) allowed the fabrication of a very large end piece. The tapered design of the speech bulb extension and the pliability of the material made the appliance more tolerable for the patient.

In the case of Lisa, the improvement of the oral-nasal balance came at the price of increased hyponasality. While a hyponasal voice will be more intelligible and socially more acceptable than hypernasality (Shprintzen et al., 1979), the large and obturating silicone attachment may interfere with nasal breathing. This trade-off must be carefully considered when designing the appliance so that the impact on nasal breathing will be as minimal as possible.

A curious feature of Lisa's speech was that her nasalance scores for the non-nasal text were higher than her values for the nasal sentences. This was an unusual finding because even severely hypernasal speakers will normally have higher nasalance scores on the nasal sentences, although the distance between their nasal and non-nasal productions may diminish (Bressmann et al., 2000). In the case of Lisa, possibly owing to the severity of the velar paralysis, there was no clear differentiation of the nasal and non-nasal productions. This pattern persisted with the Palatoflex prosthesis in place.

Despite a considerable body of literature published on the topic, speech bulbs and palatal lift prostheses are not often utilized in the care of patients with hypernasal resonance disorders (Peterson-Falzone et al., 2001). The two cases described in this paper illustrate two continuing challenges for the practical use of in this type of appliance.

Jasmine's case illustrated the importance of active use of the prosthesis by the patient. Unfortunately, Speech-Language Pathologists have not established effective and reliable methods of stimulating velopharyngeal movement in speech. This is an area that merits further investigation because it is still unclear to what extent speakers can voluntarily modify their velopharyngeal closure pattern (Siegel-Sadewitz & Shprintzen, 1982).

The current designs of speech bulb and palatal lift appliances have been established over 50 years ago, with only minor variations. Lisa's case underlines that it can sometimes be necessary to stray from the original, time-honoured ways of creating speech bulb or palatal lift prostheses. The Palatoflex design (Vogel et al., 1996; Vogel, 2001) enabled the treatment team to drastically improve Lisa's oral-nasal balance in speech, beyond what could have been achieved with a conventional prosthesis. This area, too, merits further research and innovation so that more patients will be able to benefit from prosthodontic treatment for hypernasal resonance disorders in the future.

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Received date: Aug 18, 2010
Accepted date: June 29, 2011

Book Reviews
Évaluation des livres

Title: Mild Traumatic Brain Injury Episodic Symptoms and Treatment

Author: Richard J. Roberts & Mary Ann Roberts

Date: 2011

Publisher: Plural Publishing, San Diego, CA.

Cost: $47.66

Reviewer: Regina Jokel, Ph.D. University of Toronto.

Roberts and Roberts book provides a refreshing discussion of topics addressing neuro-behavioural issues in mild traumatic brain injury (TBI). With its practical approach and wealth of clinically-relevant basic facts, it has the potential to set the context for a better understanding and rehabilitation of some aspects of TBI. It includes information on the fundamentals of behavioural and emotional assessment, and basic management strategies following the initial treatment with anticonvulsive mood stabilizers.

The book is divided into several chapters, organized by themes driven by the concept of MIND, or *Multisymptomatic Intermittent Neurobehavioral Disorder*. The authors view MIND not as a new neurobehavioural syndrome, but rather a new way of looking at "resurrected and systematized observations" of their predecessors. Consequently, new assertions are supported by a number of research sources.

The first chapter defines the features of brain injury due to blunt force trauma followed by a presentation of an illustrative case study in chapter two. The first chapter also contains a number of disclaimers helpful in further delineation of what MIND is and is not, which is helpful to medical professionals not familiar with the term or the concept.

In chapter three, the authors present a handful of suggestions as to how to negotiate medical and legal issues resulting from mild TBI. While some of the suggestions are clearly directed to medical professionals, others, somewhat unexpectedly, address individuals with TBI. Chapters four and five of the book provide evidence for the existence of patients with neuropsychiatric symptoms resembling MIND (useful to neuropsychiatrists) and the challenges of living with untreated symptoms of MIND. The remaining part of the book (Chapters 6-12) provides evidence for treatment efficacy and deals with selected aspects of assessment and treatment of mild TBI in both adults and children, with emphasis on pharmacological and behavioural strategies. The Appendix provides guidelines for making the diagnosis of MIND in adult patients only. While some chapters end with a brief summary section, all are followed by a helpful list of references. Readers will also be happy with the visual organization of text and tables.

This book is a reflection of many years of clinical work in TBI with adult and paediatric populations. While being a great resource, due to its scope and presentation of material, some parts appear to be most useful to novice neuropsychologists and neuropsychiatrists while others to individuals with TBI. To this effect, the cognitive-communication aspects of TBI are omitted entirely and, consequently, professionals interested in communication (e.g., speech-language pathologists) may prefer to turn to other sources of information.

CASLPA Conference 2012 – Abstracts
St. John's, Newfoundland and Labrador
May 9 – 12, 2012

Preconference Workshop

Creating Successful Life Opportunities for Learners on the Autism Spectrum: From Planning to Practical Strategies

Brenda Smith Myles, Ph.D.

The first part of this presentation will provide an overview of the Comprehensive Autism Planning System (CAPS). This system provides a means of determining what the child needs to succeed in each academic and nonacademic subject.

At the end of this presentation, attendees will be able to:

- describe characteristics of students with AS, ASD, and related learning challenges and how they impact learning.
- identify supports that can be used throughout the student's day.
- be able to create a comprehensive plan for student programming.

The second part of this presentation will address the hidden curriculum and its applicability to individuals on the autism spectrum. The hidden curriculum is comprised of items that are not typically taught to neurotypical children and youth, but are assumed and expected knowledge.

At the end of this presentation, participants will be able to:

- define the hidden curriculum
- explain the hidden curriculum's applicability to school, community, and home
- identify hidden curriculum areas and items across preschool, middle school, high school, and adulthood

Speech-Language Pathology and Audiology Workshops

Generation Gaps and Intergenerational Workforce

Travor Brown, PhD in Industrial Relations

For perhaps the first time in history, workplaces are comprised of four distinct generations, each with their unique ways of working. In this interactive session, we will examine the social influences that shape a generation's values, beliefs and outlooks as well as compare and contrast the values, beliefs and outlooks of the four generations.

Motivational Interviewing in Healthcare Settings: Practical Strategies for Clinicians

Lu-Anne McFarlane, Associate Professor, Academic Coordinator of Clinical Education

Motivational Interviewing (MI) is at the forefront of communication and counselling techniques in healthcare settings. MI is an evidence-based clinical approach to supporting clients and their families through change. This participatory workshop will provide information on the philosophy of MI and summarize the extensive evidence supporting its use in healthcare settings. It will highlight the essential components of MI and focus on techniques that can be implemented immediately. Participants will have opportunities to analyze their current clinical communication strategies, discuss and practice specific MI skills, and create a plan for further development. Finally, resources for continued learning will be provided. Participants will leave this workshop with strategies they

can use to increase their communication skills with all clients and their families, but especially for those who are resisting change.

Neuropharmacology for Rehabilitation Professionals

Teresa Paslawski, PhD, CCC-SLP, R. SLP

This workshop is intended to provide participants with the basic tools and knowledge to understand pharmacology as it relates to the populations typically served by rehabilitation professionals. It will include a discussion of current pharmacological interventions relevant to rehabilitation and recommendations regarding resources to support clinical practice.

Newfoundland English: Deep roots, new growth

Gerard Van Herk, PhD Linguistics

Newfoundland English, like other non-standard varieties, is sometimes perceived as incorrect, challenging speech professionals to differentiate dialect from disfluency. I demonstrate that dialect features are rooted in the language of early settlers from Ireland and southwestern England. I then examine how today's speakers use language to fashion new identities.

Audiology Workshop

Tinnitus Retraining Therapy for Treatment of Tinnitus and Decreased Sound Tolerance

Pawel Jastreboff, PhD, ScD, MBA

Currently only two methods have been accepted in the prestigious Cochrane Database of Systematic Reviews as having a positive impact on tinnitus patients: Behavioral Cognitive Therapy and Tinnitus Retraining Therapy (TRT). This workshop will be devoted to the presentation of basic implementation of TRT for treatment of tinnitus, hyperacusis and misophonia.

Speech-Language Pathology Workshops

Ultrasound and speech habilitation

Penelope Bacsfalvi, RSLP, Ph.D.

This presentation will review current clinical research and the use of visual feedback in speech habilitation, with a special focus on the use of ultrasound as a clinical tool. Speech therapy with visual feedback tools as adjuncts to therapy have proven to be successful in the long term. The procedures developed with older students will be reviewed, with a focus on treating 'r' with ultrasound. These methods have the potential to eliminate the need for years of speech therapy later.

Keywords: speech habilitation, electropalatography, ultra sound, speech, visual feedback

Interdisciplinary Care of the Stroke Survivor

Sheila Farrell, Debbie Maloney, Elise Murphy Dowden, MSLP., S-LP (C), Renée Broomfield, OT. (R)NL, Jennifer Shears, Reg. P.T.

The panel will include two women with aphasia who are stroke survivors. They will be discussing their experiences around having a stroke, the rehabilitation process in an interdisciplinary setting with particular emphasis on the impact of Speech-Language Pathology. They will be joined by a Speech-Language Pathologist, an Occupational Therapist and a Physiotherapist who will be discussing interdisciplinary service delivery in a day hospital setting. There will be ample time for audience participation.

The Speech Therapy Revolution: Technology, Apps & Social Media

Barbara Fernandes, M.S., CCC-SLP

Technology and Social Media are quickly re-shaping Speech-language-pathology. While technology brings new therapy tools, such as apps, iPads and gadgets that make therapy more engaging; it also requires more training and discussions. Social Media tools, such as Facebook and Twitter can also serve as powerful tools for professional

growth and parental participation. This session will explore these subjects and more, led by an S-LP who has developed more than 24 mobile speech-language apps, including some co-authored with CASLPA members

Treatment of Stuttering Across the Lifespan

Barry Guitar, Ph.D.

This presentation will teach participants how to assess and treat individuals who stutter from preschool children, to school-age children, to adolescents and adults. Video clips, PowerPoint presentations, and a handout will illustrate all components. As appropriate, involvement of the family, classmates, teachers, and other school personnel will be stressed.

Functional Intervention Approaches that Work for Aphasia, Dementia, and TBI

Ellen Hickey, Ph.D., CCC-SLP, Associate Professor

This workshop will discuss functional intervention approaches for persons with aphasia, dementia, or traumatic brain injury. Functional assessment will be briefly described, followed by a discussion of various evidence-based procedures (e.g., spaced retrieval training, partner training) to achieve functional goals. Case study examples and "how to" techniques will be provided.

Articulation of "s" and "r"

Pam Marshalla, MA, CCC-SLP

In this half-day seminar, Pam will discuss techniques to develop five essential skills: (1) Teaching children to keep the tongue inside the mouth during speech, (2) Teaching the midline groove for the sibilants, (3) Teaching the back of the tongue to elevate for "K" and "G," and (4) Teaching the tongue to elevate for both a retroflex and bunched "R." Seminar will contain lecture, case examples, small group learning activities, and question/answer sections.

Motor Speech

Pam Marshalla, MA, CCC-SLP

In this full-day seminar, Pam will discuss techniques for the motor speech disorders of apraxia and dysarthria. Techniques will include those for improving intelligibility, for teaching the vowels and diphthongs, for improving syllable sequencing, and for mobilizing the jaw, lip and tongue for lips for bilabials, lingua-alveolar and lingua-vela sounds. Seminar will contain lecture, case examples, small group learning activities, and question/answer sections.

Providing Curriculum-Related Services for Children with Language and Literacy Disorders

Nickola W. Nelson, Ph.D., CCC-SLP

A curriculum-relevant model of language levels (sound/word and sentence/discourse) by modalities (listening, speaking, reading, and writing) can bring order to planning language and literacy interventions. Curriculum-based language assessment and intervention and a classroom-based writing lab approach can connect spoken and written language intervention to meeting core curriculum standards.

After attending these sessions, participants will be able to:

1. Use a language levels by modalities model to describe a student's language intervention strengths and needs.
2. Describe at least two curriculum-relevant techniques for assessing sound/word and sentence/discourse skills.
3. Describe methods for collaborating with a classroom teacher to set up a writing lab approach to language assessment and intervention.
4. List examples of expected outcomes when a writing lab approach is used to provide spoken and written language intervention

State of the Art(s): Vocal Medicine and Phonosurgery

Clark Rosen, MD

Dysphonia can be caused by a variety of etiologies. This workshop will focus on important aspects of evaluating

and caring for dysphonia due to: Laryngeal reflux, vocal fold lesions and acute laryngitis. In addition, a rational and holistic approach will be presented for the care of the professional voice user.

Teaching Essential Skills for Learners with ASD

Brenda Smith Myles, Ph.D.

This session will provide an overview of strategies that support the success of individuals with autism spectrum disorders. These skills serve as building blocks in adulthood. Myriad strategies will be discussed, including regulation, social, problem-solving, daily living, and organization. In addition, a model for looking at behavioral challenges including the cycle of tantrums, rage, and meltdowns.

At the end of the sessions, attendees will be able to:

1. Describe skills used across the lifespan.
2. Identify supports that can address life skills.
3. Match learner needs to skills.

Non-instrumented methods of swallowing assessment: A review of current evidence and best practice

Catriona M. Steele, Ph.D.

Speech-language pathologists are frequently required to conduct dysphagia assessments in facilities where instrumental tests, like videofluoroscopy, are not easily accessible. In this session, we will review the goals and methods of clinical swallowing assessment and will discuss recent evidence regarding the power of non-instrumented tests to detect swallowing problems.

Audiology Contributed Papers

Building the Emergent Literacy Skills of Children with Hearing Impairment

Lynn Dempsey, Ph.D., Reg., CASLPO, Brock University, St. Catharines, ON; Barbra Zupan, Ph.D., Reg. CASLPO, Brock University, St. Catharines, ON

The purpose of this mini-seminar is to teach participants strategies that parents and professionals can use to enhance the emergent literacy skills of children with Hearing Impairment (HI). We will demonstrate how these activities can be integrated into an existing treatment program and allow participants opportunities to practice implementing them.

Remote ABR via Telehealth: Improving Patient Access to Audiology Services

Kathy J. Packford, MSc, R.Aud, Aud (C), Glenrose Rehab Hospital, Edmonton, AB; Ming Zhang, MD, Ph.D., University of Alberta/ Glenrose Rehab Hospital, Edmonton, AB; Brian Schmidt, MSc, Glenrose Rehabilitation Hospital, Edmonton, AB; Melissa Polonenko, MClSc, Glenrose Rehab Hospital, Edmonton, AB, Katie Woo, BscOT, Glenrose Rehab Hospital, Edmonton, AB, Julie Kremer, MS, University of Alberta Hospital, Edmonton, AB

The use of telehealth can improve outcomes for children with hearing loss in early childhood by allowing the same accessibility to patients referred for this testing from distant locations as those closer to the ABR diagnostic center. Data shows that this service delivery method reduces travel time, costs and inconvenience.

Dual Hearing Loss and Cognitive Impairment: Implications for Practice

Kathy Pichora-Fuller, Ph.D., University of Toronto, Mississauga, ON; Penny Gosselin, Ph.D., University of Toronto, Mississauga, ON; Kate Dupuis, Ph.D., University of Toronto, Mississauga, ON

About 1 in 2 people over 70 years of age have hearing loss and 1 in 5 have cognitive impairment. How can screening, assessment and rehabilitation be adapted to meet the needs of those with these dual impairments so that social interaction can be maintained and further declines slowed?

Cochlear Implantation in Children with Multiple Disabilities: Candidacy and Outcomes

Kathryn Ritter, Ph.D., CED, LSLS Cert. AVT, Glenrose Rehabilitation Hospital, Edmonton, AB

Decisions regarding the cochlear implantation candidacy of children with multiple disabilities vary across centers due to the fact that spoken language may not be a reasonable expectation for this population. This presentation will address candidacy criteria and outcome measurement used with CMD at Glenrose hospital in Edmonton.

The Impact of Cochlear Implantation on Parents' Communication Choices for their Preschoolers

Noreen Simmons, Ph.D., M.Sc., RS-LP, BC Family Hearing Resource Society, Surrey, BC, Carolyn Hawrish, A-V Therapist & Audiologist. M.Sc., RAUD, BC Family Hearing Resource Society, Surrey, BC

Retrospective early intervention demographic data over a seven year period on children under the age of five with cochlear implants was abstracted. Results from the investigation provide information on hearing loss, type(s) of amplification, and early intervention services provided pre- and post implantation.

Speech-Language Pathology Contributed Papers

Glenrose Rehabilitation Hospital Motor Speech Treatment Pilot Program

Connie Alton, MS-LP, R.S-LP, S-LP(C), Glenrose Rehabilitation Hospital, Edmonton, AB; Rachel de Castro, MClSc, R.S-LP, S-LP(C), Glenrose Rehabilitation Hospital, Edmonton, AB

Evidence to support efficacy of treatment for children with motor speech disorders exists, yet this population of school-age children is underserved. To evaluate the effectiveness and feasibility of providing this service, a ten-week pilot treatment program was implemented. Analysis of pre and post measures suggests this treatment approach is effective.

The Art of Supervising Students: Metamorphosis Guaranteed!

Diane Bouchard-Lamothe, speech-language pathologist, Consortium national de formation en santé (CNFS), University of Ottawa, Ottawa, ON

"The mediocre supervisor tells, the good supervisor explains. The superior supervisor demonstrates, but the best SUPER2visor inspires!" Adapted from W.A. Ward. The clinician's transformation into the role of supervisor is eased when he or she received training that is recognised by various professional associations. Speech-language pathologists and audiologists are invited to discover this process and to assess their own needs within it!

Speech Language Pathologists Role in Determining Consent and Capacity

Alexandra Carling-Rowland, Ph.D., CASLPO, Toronto, ON; Sandra Black, University of Toronto, Sunnybrook Health Sciences, Toronto, ON; Aura Kagan, Ph. D., Aphasia Institute, Toronto, ON

The legal rights of people living with communication barriers to make healthcare decisions are in jeopardy because of the inaccessibility of the consent and capacity process. Speech Language Pathologists can advocate for, support and in some cases evaluate capacity, but they need the tools and legal knowledge so to do.

I Wanna Go Home - Intensive Community-Based Aphasia Therapy for Stroke

Katherine M. Churchward, MSc-S-LP, R.S-LP, S-LP(C), Alberta Health Services, Calgary, AB; Lindsey Stene, MS-LP, R.S-LP, Alberta Health Services, Calgary, AB; Darren Knox, B.Sc.PT., Alberta Health Services, Calgary, AB

Research suggests that maximum outcomes are achieved by stroke survivors who engage in complex tasks in a personally meaningful environment. The Early Supported Discharge program provides client-centred, intensive community-based trans-disciplinary rehabilitation for stroke survivors. Case studies will showcase advantages of this cost-effective service model which facilitates early discharge from hospital.

Programming For Real Life: The Experience of the Aphasia Institute

Rochelle Cohen-Schneider, M.Ed Speech-Language Pathologist REG. CASLPO, Aphasia Institute, Toronto, ON; Lorraine Podolsky, B.A. (Sp.& H.Th) Speech-Language Pathologist REG., Aphasia Institute, Toronto, ON; Charline Sherman, B.A.(Social Work),RSW, Aphasia Institute, Toronto, ON; Lisa Debow, M.HSc Speech-Language Pathologist reg. CASLPO, Aphasia Institute, Toronto, ON; Fatima Cabral, Aphasia Institute, Toronto, ON Shannon Hill, Aphasia Institute, Toronto, ON

The Aphasia Institute is a community based organisation serving those people affected by chronic aphasia. Programs are developed based on the Living with Aphasia: Framework for Outcome Measurement (A-FROM). The A-FROM provides a broad conceptual framework for thinking about real life outcomes and therefore broadens the perspective of program development.

Keys to Decision Making - School Aged Children & Youth

Julie M. Evans, R-S-LP (C), Alberta Health Services, Kitscoty, AB

Keys to Decision Making is a clinical resource that is based on common principles, current literature and clinical experience. It was developed by service providers seeking to maximize the impact of rehabilitations services for school aged children and youth. This tool is being implemented and evaluated across Alberta.

Language, Literacy and Learning Behaviour: Reaching Hard-to-Serve Populations

Lance Gentile, Ph.D., San Francisco State University, Goleta, CA

Language, literacy and learning behavior are intertwined and increasingly important in the academic and personal growth of hard-to-serve populations. It is important to identify and address strengths and needs in all three of these areas of development during assessment and intervention. The presenter's research-based approach is introduced.

Aphasia Group Therapy: What Works? Effects of Diverse Clinician Interventions

Mona Greenfield, PhD, LCSW, Metropolitan Communication Associates, New York, NY; Julia Csillag, M.S., Metropolitan Communication Associates, Brooklyn, NY

Group therapy for persons with aphasia provides a therapeutic milieu for facilitating language skills and social communication. Diverse clinician interventions and outcome measures of type, modality, and quality of conversational interactions will be presented. Videos of specific interventions and data from questionnaires about clinician and participant preferences will be provided.

Integrating Participation Outcomes Into Speech and Language Intervention

Marilyn K. Kertoy, S-LP, Reg. Ontario, University of Western Ontario, London, ON

Full participation of children with speech and language difficulties in everyday activities is essential for ongoing development. This seminar provides participation data from preschoolers with and without language difficulties, introduces a tool for measuring participation, and provides a practical demonstration of using participation profiles to integrate language and participation goals.

Preventing Literacy Difficulties in Elementary Schools Using a RTI Model

Pascal Lefebvre, S-LP, University of Ottawa, Ottawa, ON; Nicole Fortier, S-LP, Commission scolaire des Phares, Rimouski, QC

To promote literacy success, a school-based participatory research team implemented a Response to Intervention (RTI) delivery model in an elementary school. Evidence-based practices in the prevention of reading and writing difficulties were implemented using a Knowledge Translation (KT) framework. The process and the outcomes of this implementation are reported.

Supporting Children's Narrative Skills: The Story from the Intervention Literature

Diane Pesco, Ph.D., S-LP (C), Concordia University, Montreal, QC; Andréanne Gagné, Ph.D., Université de Québec à Montréal, Montréal, QC; Brenna McClintock, M.A. Education, Concordia University, Montreal, QC

We present a systematic review of research on interventions intended to foster children's oral narrative skills. The presentation covers the rationale provided for the interventions, the narrative features addressed across studies, the instructional techniques and strategies employed, and the effects observed.

The Roles of Various Memory Capacities in Learning Lexical Spelling

Brigitte Stanké, S-LP, Université du Québec à Trois-Rivières, Trois-Rivières, QC

This workshop will highlight the results of a longitudinal study on the important role played by various memory capacities in learning written language. This finding could help with the development of screening and intervention tools for students at risk of presenting written language learning difficulties.

Launching the FOCUS: A Canadian Outcome Measure Ready for Distribution

Nancy L. Thomas-Stonell, University of Toronto, Toronto, ON; Bernadette Robertson, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON; Bruce Oddson, Laurentian University, Sudbury, ON; Peter L. Rosenbaum, McMaster University, Hamilton, ON; Joan Walker, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON

The FOCUS, an outcome measure for preschool children, links speech-language treatment to a child's ability to participate in their world. The FOCUS is reliable and has strong construct validity. It measure changes in communication skills after 9 hours of therapy. The FOCUS is now ready for clinical use.

Nonverbal Learning Disability (NLD): Autism Spectrum Disorder (ASD) by Another Name?

Joanne C. Volden, Ph.D., University of Alberta, Edmonton, AB

The communicative profiles of NLD and high functioning ASD (HFA) are both characterized by fluent, grammatical

speech, but substantial pragmatic dysfunction. This mini-seminar will explore the communicative profiles of both, and present current research to support the position that these two groups are indistinguishable in terms of their communicative characteristics.

Parental Perspectives on the Child-S-LP Relationship and Participation Outcomes

Karla Washington, University of Cincinnati, Cincinnati, OH; Nancy Thomas-Stonell, Bloorview Research Institute, Toronto, ON; Sharynne McLeod, Charles Sturt University, Bathurst, Australia; Genese Warr-Leeper, University of Western Ontario, London, ON; Bruce Oddson, Laurentian Univeristy, Sudbury, ON; Peter Rosenbaum, McMaster University/CanChild, Hamilton, ON

Parents (n=52) of preschoolers, with speech-language-disorders, with/without physical-impairments, provided perspectives about: (a) children's participation pre-to-post-to-3-months-post-intervention and (b) the child-S-LP relationship established during speech-language-intervention. An additional 15 preschoolers were waitlist-controls. Intervention-parents reported greater participation-gains versus controls. Intervention-parents(>90%) also had positive/very-positive perspectives about the child-S-LP relationship. (Sub)themes identified in parental-perspectives are discussed.

An Outcome Measure for Young Children with Severe Speech Delay

Erica C. Woolridge, MSc S-LP, R.S-LP, S-LP (C), Memorial University of Newfoundland, Mount Pearl, NL; Megan M. Hodge, Professor, University of Alberta, Edmonton, AB; Shayna Scott, MSc S-LP, R.S-LP

Analyses of phonetic and phonologic scores for a 30-word imitative task (TOCS-30) for 30 three year-old children (age-typical speech; speech sound disorders with and without suspected childhood apraxia of speech) indicated that TOCS-30 provides a relatively stable sample of speech behaviour that distinguishes children by level of speech disorder severity.

Poster Sessions
Speech-Language Pathology

Dysphagia Knowledge and Confidence in Skills Among Undergraduate Nutrition Students

Jennifer Ayres, M.Sc., Brescia University College, London, ON; Julie A Theurer, Ph.D., M.Cl.Sc. S-LP (C), University of Western Ontario, London, ON; Sharareh Hekmat, Ph.D., Brescia University College, London, ON; Colleen Gobert, Ph.D., Brescia University College, London, ON; Isabelle Giroux, Ph.D., Brescia University College, London, ON

This poster presents a preliminary study evaluating dysphagia knowledge, and confidence in dysphagia-related skills, in a group of undergraduate nutrition students in London, Ontario. Using a pre-post design, questionnaires were administered to capture the extent to which theoretical versus practical educational experiences enhanced knowledge, skill and comfort with dysphagia practice.

The Development of Bilingualism in a Minority Linguistic Environment

Roxanne M. Belanger, M.H.Sc., Laurentian University, Sudbury, ON; Chantal Mayer-Crittenden, M.H.Sc., Laurentian University, Sudbury, ON

This presentation will examine the impact of minority linguistic status on the development of bilingualism in Franco-Ontarian and bilingual children. It will then compare this language development in typical and premature children.

Voice Choral Singing Therapy outcomes in persons with Parkinson's disease

Sable J. Chan, BSc, MSc-S-LP, University of Alberta, Edmonton, AB; Harold Wiens, University of Alberta, Edmonton, AB; Benjamin V. Tucker, Ph.D., University of Alberta, Edmonton, AB; Melanie M. Campbell, Ph.D.; R.S-LP; S-LP (C), University of Alberta, Edmonton, AB

The current study investigates changes observed in interview data, singing, and speech obtained from persons with Parkinson's disease following Voice Choral Singing Treatment.

There's An App For That: iPad Use in S-LP

Robyn E. Conley, University of Alberta, Edmonton, AB; Angèle D. Fournier, University of Alberta, Edmonton, AB; Karly J. Hanson, University of Alberta, Edmonton, AB; Colleen P. O'Brien, University of Alberta, Edmonton, AB; Lu-Anne L. McFarlane, R. S-LP, University of Alberta, Edmonton, AB

This study explores speech-language pathologists' knowledge and beliefs about best practice principles and

technology use in intervention. It documents benefits and limitations of the iPad in intervention and how iPad applications fit best practice principles. It resulted in guidelines for clinicians to evaluate applications and suggestions for application developers.

If You Build it…Will They Come? – Nitam Giigidowin

Susan L. Coulter, B.A.S., M.A. reg. CASLPO, CCC-S-LP, Thunder Bay District Health Unit, Thunder Bay, ON; Cathy Farrell, BSW, RSW, Thunder Bay District Health Unit, Thunder Bay, ON; Colleen Mahoney, CDA, ECE, Thunder Bay District Health Unit, Geraldton, ON; Martha McClelland, B.A., M.A., reg. CASLPO, Thunder Bay District Health Unit, Thunder Bay, ON; Chimere Okoronkwo, MSc, PMP, Program Evaluator, Thunder Bay District Health Unit, Thunder Bay, ON

Nitam Giigidowin works with three First Nation communities in Northern Ontario to demonstrate that "if you build it, they WILL come". By providing services in their communities and educating parents and community members about the importance of early communication skills, increased participation of families in preschool communication services is anticipated.

Fast Mapping of Nouns and Verbs Using Grammatical Cues in Typically Developing Children

Shannon M. Crane, MSc, Dalhousie University, Saint John, NB; Allison M. Kavanagh, MSc, Dalhousie University, Torbay, NL; Elizabeth Kay-Raining Bird, Ph.D., Dalhousie University, Halifax, NS; Patricia L. Cleave, Ph.D., Dalhousie University, Halifax, NS

Fast mapping is the use of context to quickly acquire information about a novel word's meaning (Heibeck & Markman, 1987). This study investigated the effects of age and word class on fast mapping of verbs and nouns in typically developing children. The novel words were presented with grammatical cues in a computer-animated task.

Development of Alternative Access Pathways for Students with Physical Disabilities

Tania Desai, M.Sc., Reg. CASLPO, S-LP(C), Toronto District School Board, Toronto, ON; Katherine Chow, M.Sc. OT, OT Reg. (Ont.), Toronto District School Board, Toronto, ON; Leslie Mumford, M.HSc, Clinical Engineer, Holland Bloorview Kids Rehabilitation Center, Toronto, ON; Tom Chau, Ph.D., P.Eng, Holland Bloorview Kids Rehabilitation Center, Toronto, ON

A multidisciplinary approach to providing alternative access pathways to students with physical disabilities within a school setting will be presented. A speech language pathologist, occupational therapist and clinical engineer will develop customized access to technologies in order to provide 11 students with opportunities to independently participate in their school environment.

Eating and Swallowing Problems in Dementia

Andrea Gregus, S-LP, Queensway Carleton Hospital, Nepean, ON; Angela Colton-Hudson, S-LP, Queensway Carleton Hospital, Nepean, ON; Michelle MacIsaac, S-LP, Queensway Carleton Hospital, Nepean, ON; Judy Rowlands, S-LP, Queensway Carleton Hospital, Nepean, ON

The S-LP department prepared an educational booklet for patients with dementia, and their caregivers, with respect to dysphagia. An 8 page evidence-based booklet details the signs and symptoms of dysphagia at early, middle and late stages; what a swallowing assessment is and when to ask for one; oral hygiene; and end of life care.

Functional AAC during ALS and Other Degenerative Disease Progression

Stacey Harpell, B.S., M.S., CCC-S-LP, Saskatoon Health Region, Saskatoon, SK

Most ALS texts provide clinical overviews for AAC intervention. There are few manuals that provide functional, multimodal, clinical tips to maximize communication. The Saskatoon Health Region has accumulated therapy techniques into a manual that focus on providing a multimodal approach to AAC intervention of progressive diseases.

Understanding a Source of Teachers' Misunderstandings Regarding Phonological Awareness Instruction

Denyse V. Hayward, Ph.D., S-LP, University of Alberta, Edmonton, AB; Linda M. Phillips, Ph.D., University of Alberta, Edmonton, AB; Stephen P. Norris, PhD, University of Alberta, Edmonton, AB; Jane Khaemba, MEd, University of Alberta, Edmonton, AB

Many teachers have poor phonological awareness (PA) skills which compromises accurate classroom instruction in PA. We examined university textbooks as a source of teacher misunderstandings. Ninety percent contained inadequate information for accurate PA instruction. Awareness of these issues will allow S-LPs to support improved language and literacy instruction in classrooms.

Acoustic Analysis of Vowels Produced in Spontaneous and Elicited Speech by Prince Edward Island and Halifax Speakers

Marsha S. Lannan, MSc., Dalhousie University, Cornwall, PE; Chelsey Gregory, MSc., Dalhousie University, Halifax, NS; Michael Kiefte, Ph.D.,

Dalhousie University, Halifax, NS; Elizabeth Kay-Raining Bird, Ph.D., Dalhousie University, Halifax, NS

English dialectal variation in Prince Edward Island (P.E.I.) was analyzed via formant analysis of spontaneous speech recordings in order to identify systematic differences between spontaneous and elicited (i.e., read) speech production. In addition, vowel-inherent spectral change was examined to identify dialectal differences between two geographically distinct communities (Eastern and Central PEI).

All Together, Now!: A Parent Program for ASD

Erin Lamond, M.SC., S-LP (C), Nova Scotia Hearing and Speech Centres, Dartmouth, NS; Hilary Wallace, M.Sc., S-LP (C), Nova Scotia Hearing and Speech Centres, Halifax, NS; Stephen Anthony, M.Sc., S-LP (C), Nova Scotia Hearing and Speech Centres, Evanston, NS; Teresa Alexander-Arab, M.Sc., S-LP (C), Clinical Director, Nova Scotia Hearing and Speech Centres, Bridgewater, NS

This study assesses the effectiveness of "All Together, Now!", a parent program created by Nova Scotia Hearing and Speech Centres for children with social communication disorders, specifically Autism Spectrum Disorders (ASD). Participants were preschool-age. Analyses suggest that participation in this program improves engagement and responsivity in these children.

National Survey of S-LP Services for Children with Severe DD

Tracie L. Lindblad, Reg. CASLPO, M.Sc., M.Ed., BCBA, Child Development Centre of Oakville, Oakville, ON; Melissa Rourke, York University, Toronto, ON; Adrienne Perry, York University, Toronto, ON; Jonathan Weiss, York University, Toronto, ON

Results are presented of a nationwide survey addressing Speech-Language Pathology service needs and utilization in school-age children with severe Developmental Disabilities, in relation to specific factors: age, diagnosis, and demographics. Results are drawn from a larger Canadian Institutes of Health Research Grant studying health, wellbeing, and social inclusion (www.go4kidds.ca).

Decision Making Tool for Long Term Enteral Feeding

Margaret Lenny, RN, Queensway Carleton Hospital, Nepean, ON; Andrea Gregus, S-LP, Queensway Carleton Hospital, Nepean, ON; Sherri Elder, Registered Dietitian, Queensway Carleton Hospital, Nepean, ON; Phillip Inouye, Physician, Gastroenterologist, Queensway Carleton Hospital, Nepean, ON; Ena Dasberg, Social Worker, Queensway Carleton Hospital, Nepean, ON; JoAnne MacNeill, Registered Dietitian, Queensway Carleton Hospital, Nepean, ON

Consults to the Ethics Committee at the Queensway Carleton Hospital often have a common theme related to enteral feeding. An interdisciplinary task team was struck to provide a standard approach by developing tools and a process to support clinicians in discussions with the substitute decision maker regarding the initiation of long term enteral feeding.

AAC Training in S-LP Programs in Canadian Universities

Taslim N. Moosa, M.Cl.Sc. S-LP (C) Reg. CASLPO, University of Western Ontario, London, ON; Stacy McDougall, S-LP, Thames Valley Children's Centre, London, ON; Tracy Shepherd, S-LP, Thames Valley Childtren's Centre, London, ON

A questionnaire was developed to determine the amount of AAC content in the academic and clinical preparation of speech-language pathology (S-LP) students in Canadian universities. The findings of this study are compared to previously published national information to determine the changing trends in AAC training for S-LP students.

Life Participation and People Living with Aphasia

Taslim N. Moosa, M.Cl.Sc. S-LP (C) Reg. CASLPO, University of Western Ontario, London, ON; Beata Batorowicz, Occupational Therapist, McMaster University, Hamilton, ON

Individuals with aphasia and their communication partners shared their perspectives on living with aphasia through Focus Group discussions. The main areas addressed were: changes in participation related to aphasia, barriers and facilitators to participation, and impact of participation changes on quality of life.

Speech-Language Pathology Students' Perceptions of an Innovative Clinical Practicum

Taslim N. Moosa, M.Cl.Sc. S-LP (C) Reg. CASLPO, University of Western Ontario, London, ON; Julie A. Theurer, Ph.D., M.Cl.Sc. S-LP (C), University of Western Ontario, London, ON

This poster presents reflections of Speech-Language Pathology students obtained before and after participation in an innovative clinical education experience. Data from pre- and post-practicum surveys are compared to reveal areas of professional development that may be unique to this novel training program.

Constructing Collaboration Across Campus: Pre-professional S-LPs and Teachers Working Together

Salima Suleman, B.Ed, M.Sc - S-LP, University of Alberta, Edmonton, AB; Lu-Anne McFarlane, R.S-LP, University of Alberta, Edmonton, AB; Karen Pollock, Ph.D., University of Alberta, Edmonton, AB

The master's thesis project looked at the efficacy of a single exposure to interprofessional education (IPE) for education and speech-language pathology students. The effects of IPE were shown through analysis of participant responses pertaining to constructs of interprofessional collaboration related to reflection, professional roles, communication, and knowledge of specialized service delivery models.

Frontotemporal Dementia- A Case Study

Preethi T. Thomas, Research Fellow & Senior Speech-Language Pathology, Mysore, India; Satyapal P. Goswami, Reader in Speech-Language Pathology, Mysore, India; Lakshmi S. Mohan, S-LP

Frontotemporal dementia (FTD) is a grouping of pathologically and clinically heterogeneous disorders that demonstrate degeneration of the frontal and temporal lobes. Clinical syndromes of FTD have been gained from extensive studies. This case study of a 67 year old woman discusses the clinical and pathological characteristics of frontotemporal dementia.

Becoming a Clinician: Case Studies of Recent Graduates' Experiences

Richard J. Welland, Brock University, St. Catharines, ON

Recent speech-language pathology graduates were interviewed individually and collectively to solicit their perceptions and experiences during the transition from graduate student to practicing clinician. Their insights both support and offer opportunities for change to our current approaches toward graduate education and clinical preparation in speech-language pathology.

Congrès de l'ACOA 2012 – Abrégés
St. John's, Terre-Neuve-et-Labrador
9 – 12 mai 2012

Atelier pré-conférence

Créer des occasions permettant aux élèves sur le spectre de l'autisme de participer avec succès aux activités quotidiennes : de la planification aux stratégies pratiques

Brenda Smith Myles, Ph.D.

La première partie de cet atelier donnera un aperçu du Comprehensive Autism Planning System (CAPS). Ce système fournit une façon de déterminer ce dont l'enfant a besoin pour réussir dans chaque domaine scolaire et non-scolaire.

À la fin de cette présentation, les participants pourront :

- déc rire les caractéristiques des élèves avec l'autisme, un trouble du spectre de l'autisme et des difficultés d'apprentissage connexes, et comment ces difficultés affectent l'apprentissage;
- nommer des stratégies d'appui pouvant être utilisées avec l'élève tout au long de sa journée;
- créer un plan exhaustif du programme d'apprentissage de l'élève.

La deuxième partie de l'atelier portera sur le curriculum caché et la façon dont il touche les élèves sur le spectre de l'autisme. Le curriculum caché comprend les notions qui ne sont généralement pas enseignées aux enfants et élèves neurotypiques, et qui plutôt sont des connaissances présumées et attendues.

À la fin de cette présentation, les participants pourront :

- définir le curriculum caché;
- expliquer la façon dont le curriculum caché affecte le fonctionnement à l'école, dans la communauté et à la maison;
- nommer des sujets et notions du curriculum caché aux niveaux préscolaire, intermédiaire, secondaire et à l'âge adulte.

Ateliers communs en d'orthophonie et d'audiologie

Les écarts entre les générations et la main d'oeuvre intergénérationnelle

Travor Brown, doctorat en relations industrielles

Pour peut-être la première fois dans l'histoire, la main d'oeuvre active est composée de quatre générations distinctes, avec chacune ses propres façons de travailler. Lors de cet atelier interactif, nous examinerons les influences sociales qui façonnent les valeurs, les croyances et les points de vue d'une génération, puis nous comparerons les valeurs, les croyances et les points de vue de ces quatre générations.

Les techniques d'entrevue motivationnelle dans les milieux de soins de santé : stratégies pratiques pour les cliniciens

Lu-Anne McFarlane, professeure associée, coordonnatrice de l'enseignement clinique

L'entrevue motivationnelle (EM) est au premier rang des techniques de communication et de counselling dans les milieux de soins de santé. Il s'agit d'une méthode clinique fondée sur les données probantes qui permet d'appuyer les clients et leurs familles quand ils vivent un changement. Cet atelier participatif présentera de l'information

sur la philosophie de l'EM et résumera l'important recueil de recherche qui appui son utilisation dans les milieux de soins de santé. De plus, l'atelier soulignera les composantes essentielles de l'EM et mettra en lumière des techniques que vous pourrez utiliser immédiatement. Les participants auront l'occasion d'analyser les stratégies de communication clinique qu'ils utilisent actuellement, d'en discuter et de mettre en pratique des habiletés d'EM précises, ainsi que de créer un plan de perfectionnement. Enfin, nous fournirons des ressources pour qu'ils puissent poursuivre leur apprentissage. À la fin de l'atelier, les participants disposeront de stratégies qu'ils pourront utiliser pour améliorer leurs habiletés à communiquer avec tous leurs clients et leurs familles, et tout particulièrement avec ceux qui résistent au changement.

La neuropharmacologie pour les professionnels de la réadaptation

Teresa Paslawski, PhD, CCC-SLP, R. SLP

Cet atelier vise à donner aux participants les outils et connaissances de base dont ils ont besoin pour comprendre la pharmacologie en ce qui a trait aux populations généralement desservies par les professionnels de la réadaptation. La présentation comprendra un examen des interventions pharmacologiques actuelles pertinentes à la réadaptation, ainsi que des recommandations de ressources pour appuyer la pratique clinique.

L'anglais terre-neuvien : racines profondes et jeunes pousses

Gerard Van Herk, doctorat en linguistique

L'anglais terre-neuvien, tout comme d'autres variétés dialectales d'une langue, est parfois perçu comme étant incorrect, ce qui rend difficile la tâche des orthophonistes voulant distinguer le dialecte de la dysfluidité. Je démontrerai que les caractéristiques dialectales prennent racine dans le langage des premiers colons venant de l'Irlande et du sud-ouest de l'Angleterre. J'examinerai ensuite comment les locuteurs d'aujourd'hui utilisent la langue pour former de nouvelles identités.

Atelier en audiologie

Utilisation de la thérapie d'habituation des acouphènes pour traiter les acouphènes et la tolérance réduite du son

Pawel Jastreboff, PhD, ScD, MBA

Il n'existe actuellement que deux méthodes acceptées par la prestigieuse base de données de revues systématiques Cochrane comme ayant un effet positif pour les patients avec des acouphènes : la thérapie cognitive du comportement (CBT) et la thérapie d'habituation des acouphènes (Tinnitus Retraining Therapy, ou TRT). Cet atelier présentera la mise en pratique fondamentale de la TRT pour le traitement des acouphènes, de l'hyperacousie et de la misophonie.

Ateliers d'orthophonie

Les ultrasons et la réadaptation de la parole

Penelope Bacsfalvi, RSLP, Ph.D.

Cette présentation examinera la recherche clinique récente et l'utilisation de la rétroaction visuelle en réadaptation de la parole, en portant une attention particulière à l'utilisation des ultrasons comme outil clinique. La thérapie de la parole supplémentée par l'utilisation d'outils de rétroaction visuelle a été prouvée efficace à long terme. Nous examinerons les procédures établies pour travailler avec des élèves plus âgés, particulièrement pour traiter la production du son « r » avec les ultrasons. Ces méthodes pourraient potentiellement éliminer le besoin de consacrer des années de services en orthophonie par la suite.

Mots-clés : réadaptation de la parole, électropalatographie, ultrasons, parole, rétroaction visuelle

Soins interdisciplinaires pour les personnes ayant eu un AVC

Sheila Farrell, Debbie Maloney, Elise Murphy Dowden, MSLP, Ortho(C), Renée Broomfield, ergothérapeute, (R)NL, Jennifer Shears, physiothérapeute autorisée

Ce groupe de discussion comprendra deux femmes avec l'aphasie qui ont subi un AVC. Elles discuteront de

leur expérience d'avoir eu un AVC, du processus de réadaptation dans un milieu interdisciplinaire, et plus particulièrement des répercussions de l'orthophonie. Elles seront accompagnées par une orthophoniste, une ergothérapeute et une physiothérapeute, qui parleront de la prestation de services interdisciplinaires dans un hôpital de jour. Nous accorderons amplement de temps pour la participation de l'auditoire.

La révolution en orthophonie : la technologie, les applications et les médias sociaux

Barbara Fernandes, M.S., CCC-SLP

La technologie et les médias sociaux façonnent actuellement le monde de l'orthophonie. La technologie nous apporte de nouveaux outils de thérapie, comme les applications, les iPads et les gadgets qui rendent la thérapie plus plaisante, mais elle requiert également un formation supplémentaire et des discussions plus poussées. Les médias sociaux, par exemple Facebook et Twitter, peuvent également servir d'outils puissants pour promouvoir la croissance professionnelle et la participation des parents. Cet exposé explorera ces enjeux et plus encore, et sera dirigé par une orthophoniste qui a conçu plus de 24 applications mobiles en orthophonie, y compris certaines qu'elle a créées avec des membres de l'ACOA.

Le traitement du bégaiement à toutes les étapes du cycle de vie

Barry Guitar, Ph.D.

Cette présentation enseignera aux participants comment évaluer et traiter les personnes qui bégaient, et ce, à l'âge préscolaire, à l'âge scolaire, à l'adolescence et à l'âge adulte. Des clips vidéo, des présentations PowerPoint et de la documentation écrite serviront à en illustrer toutes les composantes. La participation de la famille, des collègues de classe, des enseignants et d'autres membres du personnel de l'école sera mise en valeur, le cas échéant.

Méthodes d'intervention fonctionnelles efficaces pour l'aphasie, la démence et les TCC

Ellen Hickey, Ph.D., CCC-SLP, professeure adjointe

Cet atelier portera sur des méthodes d'intervention fonctionnelles pour les personnes avec l'aphasie, la démence ou un traumatisme cérébral. L'évaluation fonctionnelle sera brièvement décrite, puis nous examinerons diverses procédures fondées sur les données probantes (p. ex., entraînement de la récupération espacée, formation du partenaire) pour atteindre des buts fonctionnels. Des études de cas et techniques pratiques seront également fournies.

Articulation des sons « s » et « r »

Pam Marshalla, MA, CCC-SLP

Lors de cet atelier d'une demi-journée, nous examinerons des techniques visant le développement de quatre habiletés essentielles : 1) enseigner aux enfants à garder la langue dans la bouche quand ils parlent, 2) enseigner à former le creux au centre de la langue pour la production des fricatives, 3) enseigner l'élévation de la base de la langue pour la production du « K » et du « G » et 4) enseigner l'élévation de la langue pour la production du « R » rétroflexe et tendu. Ce séminaire comprendra de l'enseignement magistral, des exemples de cas, des activités d'apprentissage en petits groupes et des sections de réponse aux questions.

Troubles moteurs de la parole

Pam Marshalla, MA, CCC-SLP

Lors de cet atelier d'un jour, Pam présentera des techniques servant à traiter des troubles moteurs de la parole, soit l'apraxie et la dysarthrie. Ces techniques comprendront des méthodes pour améliorer l'intelligibilité, pour enseigner les voyelles et les diphtongues, pour améliorer la mise en séquence de syllabes et pour mobiliser la mâchoire, les lèvres et la langue afin de produire les sons bilabiaux, alvéolaires et vélaires. Ce séminaire comprendra de l'enseignement magistral, des exemples de cas, des activités d'apprentissage en petits groupes et des sections de réponse aux questions.

Prestation de services fondés sur le programme d'enseignement aux enfants avec un trouble du langage ou de la littératie

Nickola W. Nelson, Ph.D., CCC-SLP

Un modèle des niveaux de langage (son/mot et phrase/discours) fondé sur le programme d'enseignement

et organisé selon les modalités (écoute, parole, lecture et écriture) peut fournir une structure pour planifier l'intervention en langage et en littératie. L'évaluation des difficultés langagières, l'intervention axée sur le programme d'enseignement et les laboratoires d'écriture fondés sur la salle de classe aident à établir des liens entre l'intervention en langage oral et écrit et l'atteinte des exigences de base du programme d'enseignement.

À la fin de ces sessions, les participants pourront :

1. utiliser un modèle de niveaux de langage organisé selon les modalités pour décrire les forces et les besoins d'inter vention en langage d'un élève;
2. décrire au moins deux techniques fondées sur le programme d'enseignement pour évaluer les habiletés d'utilisation des sons/mots et des phrases/du discours;
3. décrire des moyens de collaborer avec le personnel enseignant pour créer un laboratoire d'écriture dans le but d'évaluer le langage et d'intervenir en langage;
4. donner une liste d'exemples de résultats attendus lorsqu'un laboratoire d'écriture est utilisé pour fournir une intervention en langage oral et écrit.

La pointe de la technologie : médecine de la voix et phonochirurgie

Clark Rosen, MD

La dysphonie peut être causée par une variété d'étiologies. Cet atelier portera sur les composantes importantes de l'évaluation et du traitement de la dysphonie causée par : la laryngite de reflux, les lésions des cordes vocales et la laryngite aiguë. De plus, une méthode rationnelle et holistique sera présentée pour le soin des utilisateurs professionnels de la voix.

L'enseignement des habiletés sociales essentielles aux élèves avec un TSA

Brenda Smith Myles, Ph.D.

Cette session fournira un aperçu de stratégies appuyant le succès des personnes avec un trouble du spectre de l'autisme. Ces habiletés sociales forment les éléments de base de l'âge adulte. Une panoplie de stratégies sera présentée, y compris la maîtrise de soi, les habiletés sociales, la résolution de problèmes, la vie quotidienne et l'organisation. De plus, nous examinerons un modèle pour gérer les difficultés du comportement, y compris le cycle d'excès de colère, de rage et de crises.

À la fin de cette session, les participants pourront :

1. décrire les habiletés utilisées au long du cycle de vie.
2. nommer des stratégies pouvant appuyer les compétences de vie.
3. associer les besoins des apprenants aux habiletés requises.

Méthodes non instrumentales pour évaluer la déglutition : examen des données probantes actuelles et des pratiques exemplaires

Catriona M. Steele, Ph.D.

Les orthophonistes sont souvent appelées à effectuer des évaluations de la déglutition dans des milieux où il est difficile d'utiliser des tests instrumentaux comme la vidéofluoroscopie. Dans cet exposé, nous examinerons les buts et les méthodes d'évaluation clinique de la déglutition, et nous discuterons de la recherche récente concernant la capacité des tests non instrumentaux à détecter les problèmes de déglutition.

Articles contribués en audiologie

Développement des habiletés de littératie émergente chez les enfants avec une perte auditive

Lynn Dempsey, Ph.D., membre OAOO, Brock University, St. Catharines, ON; Barbra Zupan, Ph.D., membre OAOO, Brock University, St. Catharines, ON

Ce mini-séminaire vise à enseigner aux participants des stratégies que les parents et les professionnels peuvent utiliser pour renforcer les habiletés de littératie émergente d'enfants avec une perte auditive. Nous démontrerons comment ces activités peuvent être intégrées à un programme de traitement existant et donnerons aux participants l'occasion de s'exercer à les utiliser.

PÉATC à distance au moyen de la télésanté : améliorer l'accès des patients aux services d'audiologie

Kathy J. Packford, MSc, R.Aud, Audio(C), Glenrose Rehab Hospital, Edmonton, AB; Ming Zhang, MD, Ph.D., University of Alberta/Glenrose Rehab Hospital, Edmonton, AB; Brian Schmidt, MSc, Glenrose Rehabilitation Hospital, Edmonton, AB; Melissa Polonenko, MClSc, Glenrose Rehab Hospital, Edmonton, AB, Katie Woo, BscOT, Glenrose Rehab Hospital, Edmonton, AB, Julie Kremer, MS, University of Alberta Hospital, Edmonton, AB

L'utilisation de la télésanté peut améliorer les résultats pour les enfants avec une perte auditive pendant la jeune enfance en donnant un accès égal aux services aux patients provenant d'une région éloignée et aux patients habitant à proximité d'un centre offrant les services de PÉATC. Les données démontrent que cette méthode de prestation de services réduit le temps de déplacement, les coûts et les inconvénients.

Troubles concomitants de l'audition et de la cognition : répercussions pour la pratique

Kathy Pichora-Fuller, Ph.D., University of Toronto, Mississauga, ON; Penny Gosselin, Ph.D., University of Toronto, Mississauga, ON; Kate Dupuis, Ph.D., University of Toronto, Mississauga, ON

Environ une personne de plus de 70 ans sur deux a une perte auditive, et une sur cinq a un trouble de la cognition. Comment pouvons-nous adapter les méthodes de dépistage, d'évaluation et de réadaptation pour répondre aux besoins des personnes avec ces deux troubles de façon à maintenir leurs capacités d'interaction et à en ralentir le déclin?

La pose d'implants cochléaires chez les enfants aux handicaps multiples : critères de sélection et résultats

Kathryn Ritter, Ph.D., CED, LSLS Cert. AVT, Glenrose Rehabilitation Hospital, Edmonton, AB

Les décisions relatives à l'admissibilité d'enfants avec des handicaps multiples pour la pose d'implants cochléaires varient d'un centre à l'autre, car le développement du langage oral n'est pas toujours une attente raisonnable pour cette population. Cet exposé présentera les critères de sélection et la mesure du rendement utilisés auprès de cette population au Glenrose Hospital, à Edmonton.

Les répercussions de la pose d'implants cochléaires sur le choix de moyen de communication par les parents pour leurs enfants d'âge préscolaire

Noreen Simmons, Ph.D., M.Sc., RS-LP, BC Family Hearing Resource Society, Surrey, C.-B., Carolyn Hawrish, thérapeute auditivo-verbale et audiologiste, M.Sc., RAUD, BC Family Hearing Resource Society, Surrey, C.-B.

Nous avons fait une revue rétrospective (période de sept ans) des données démographiques sur l'intervention précoce auprès des enfants de moins de cinq ans qui ont eu des implants cochléaires . Les résultats de l'enquête donnent de l'information sur la perte auditive, le type d'amplification et les services d'intervention fournis avant et après l'implantation.

Articles contribués en orthophonie

Programme pilote de traitement des troubles moteur de la parole au Glenrose Rehabilitation Hospital

Connie Alton, MS-LP, R.S-LP, Ortho(C), Glenrose Rehabilitation Hospital, Edmonton, AB; Rachel de Castro, MClSc, R.S-LP, Ortho(C), Glenrose Rehabilitation Hospital, Edmonton, AB

Il existe des données probantes appuyant l'efficacité du traitement pour les enfants avec un trouble moteur de la parole, mais cette population d'enfants d'âge scolaire est tout de même mal desservie. Nous avons mis en place un programme de traitement pilote d'une durée de 10 semaines pour évaluer l'efficacité et la faisabilité d'offrir un tel service. L'analyse des mesures avant et après le traitement suggère que cette méthode de traitement est efficace.

L'Art de superviser des stagiaires : une métamorphose à coup sûr!

Diane Bouchard-Lamothe, orthophoniste, Consortium national de formation en santé (CNFS) Université d'Ottawa, Ottawa, ON

Un superviseur médiocre dit, un bon superviseur explique. Un excellent superviseur démontre, mais un SUPER2viseur inspire! » traduction libre de W.A. Ward

Une formation reconnue par diverses associations professionnelles facilite la métamorphose du clinicien en superviseur. Les orthophonistes et audiologistes sont invités à la découvrir et à évaluer leurs besoins dans ce processus!

Le rôle des orthophonistes dans la détermination du consentement et de la capacité

Alexandra Carling-Rowland, Ph.D., membre OOAO, Toronto, ON; Sandra Black, University of Toronto, Sunnybrook Health Sciences, Toronto, ON; Aura Kagan, Ph. D., Aphasia Institute, Toronto, ON

L'inaccessibilité du processus de consentement et de capacité compromet les droits des personnes vivant avec des difficultés de communication de prendre leurs propres décisions médicales. Les orthophonistes peuvent défendre leurs droits, offrir un appui et, dans certains cas, évaluer la capacité, mais ils doivent avoir les outils et les connaissances juridiques nécessaires pour le faire.

Je veux retourner chez moi – une thérapie intensive pour l'aphasie offerte dans la communauté après un AVC

Katherine M. Churchward, MSc-S-LP, R.S-LP, Ortho(C), Alberta Health Services, Calgary, AB; Lindsey Stene, MS-LP, R.S-LP, Alberta Health Services, Calgary, AB; Darren Knox, B.Sc.PT., Alberta Health Services, Calgary, AB

La recherche suggère que les personnes ayant eu un AVC atteignent leurs meilleurs résultats quand elles participent à des tâches complexes dans un environnement avec une signification personnelle. Le programme de congé précoce assisté offre une réadaptation transdisciplinaire intensive, axée sur le client et offerte dans la communauté aux personnes ayant eu un AVC. Nous utiliserons des études de cas pour démontrer les avantages de ce modèle de prestation de services rentable qui facilite le congé précoce de l'hôpital.

Programmation pour la vraie vie : l'expérience de l'Aphasia Institute

Rochelle Cohen-Schneider, M.Ed., orthophoniste, membre OAOO, Aphasia Institute, Toronto, ON; Lorraine Podolsky, B.A. (Sp.& H.Th), orthophoniste, membre OAOO, Aphasia Institute, Toronto, ON; Charline Sherman, B.A.(travail social), RSW, Aphasia Institute, Toronto, ON; Lisa Debow, M.HSc, orthophoniste, membre OAOO, Aphasia Institute, Toronto, ON; Fatima Cabral, Aphasia Institute, Toronto, ON; Shannon Hill, Aphasia Institute, Toronto, ON

L'Aphasia Institute est un organisme communautaire desservant les personnes avec une aphasie chronique. Ses programmes sont fondés sur le modèle Living with Aphasia: Framework for Outcome Measurement (A-FROM). Le modèle A-FROM fournit un large cadre conceptuel permettant d'envisager les résultats dans la vie réelle et ainsi d'élargir l'optique du développement de programmes.

Les clés de la prise de décisions – enfants d'âge scolaire et adolescents

Julie M. Evans, R-S-LP(C), Alberta Health Services, Kitscoty, AB

Keys to Decision Making (Les clés de la prise de décisions) est une ressource clinique fondée sur des principes communs, la recherche courante et l'expérience clinique. Cet outil a été créé par des prestataires de services cherchant à maximiser l'efficacité des services de réadaptation aux enfants d'âge scolaire et aux adolescents. Sa mise en oeuvre et son évaluation sont en cours partout en Alberta.

Le langage, la littératie et l'apprentissage : comment atteindre les populations en difficulté extrême

Lance Gentile, Ph.D., San Francisco State University, Goleta, CA

Le langage, la littératie et le comportement d'apprentissage sont des habiletés reliées et de plus en plus importantes pour la croissance personnelle et scolaire des populations en difficulté extrême. Il est important d'identifier et de cibler les forces et les besoins dans ces trois domaines du développement lors de l'évaluation et de l'intervention. Cette session comprendra un aperçu de la méthode fondée sur la recherche utilisée par la présentatrice.

La thérapie de groupe en aphasie : Qu'est-ce qui fonctionne? Effets de diverses interventions cliniques

Mona Greenfield, PhD, LCSW, Metropolitan Communication Associates, New York, NY; Julia Csillag, M.S., Metropolitan Communication Associates, Brooklyn, NY

La thérapie de groupe pour les personnes avec l'aphasie fournit un milieu thérapeutique qui encourage les habiletés langagières et la communication sociale. Nous présenterons diverses interventions cliniques et des mesures du rendement selon le type, la modalité et la qualité des interactions conversationnelles. La présentation comprendra des vidéos de certaines interventions et des données obtenues à l'aide de questionnaires concernant

les préférences des cliniciens et des participants.

Intégrer les effets sur la participation à l'intervention en orthophonie

Marilyn K. Kertoy, orthophoniste, membre OAOO, University of Western Ontario, London, ON

La participation totale des enfants avec des difficultés de la parole ou du langage aux activités quotidiennes est essentielle pour leur développement. Cette session présentera des données sur la participation d'enfants d'âge préscolaire avec et sans difficulté langagière, décrira un outil servant à mesurer la participation et offrira une démonstration pratique de l'utilisation des profiles de participation pour intégrer les buts de langage et de participation.

La prévention de difficultés en littératie dans les écoles primaires à l'aide d'un modèle de RTI

Pascal Lefebvre, orthophoniste, Université d'Ottawa, Ottawa, ON; Nicole Fortier, orthophoniste, Commission scolaire des Phares, Rimouski, QC

Afin de promouvoir la réussite en littératie, une équipe de recherche participative dans les écoles a mis en place un modèle de réponse à l'intervention (Response to Intervention, ou RTI) dans une école primaire. Des pratiques fondées sur les données probantes portant sur la prévention des difficultés de lecture et d'écriture ont été mises en place grâce à un cadre de transfert des connaissances. Nous décrirons le processus et les résultats de cette mise en place.

Appuyer les habiletés discursives des enfants : l'histoire que raconte la recherche sur l'intervention

Diane Pesco, Ph.D., Ortho(C), Université Concordia, Montréal, QC; Andréanne Gagné, Ph.D., Université du Québec à Montréal, Montréal, QC; Brenna McClintock, M.A. Éducation, Université Concordia, Montréal, QC;

Nous présenterons une revue systématique de la recherche portant sur les interventions visant à renforcer les habiletés discursives orales des enfants. Cette présentation couvrira la raison d'être des interventions, les caractéristiques du discours ciblées par les études, les techniques et stratégies d'enseignement utilisées et les effets observés.

Le rôle des différentes mémoires dans l'acquisition de l'orthographe lexicale

Brigitte Stanké, Orthophoniste, Université du Québec à Trois-Rivières, Trois-Rivières, QC

Cet atelier exposera les résultats d'une étude longitudinale portant sur le rôle important des différentes capacités de mémoire sur l'apprentissage du langage écrit. La mise en évidence d'un tel rôle permet d'envisager des outils de dépistage et d'intervention d'élèves à risque de présenter des difficultés d'apprentissage du langage écrit.

Lancement du programme FOCUS : une mesure des résultats canadienne prête pour la distribution

Nancy L. Thomas-Stonell, University of Toronto, Toronto, ON; Bernadette Robertson, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON; Bruce Oddson, Université Laurentienne, Sudbury, ON; Peter L. Rosenbaum, McMaster University, Hamilton, ON; Joan Walker, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON

Le programme FOCUS, une mesure des résultats pour les enfants d'âge préscolaire, établit un lien entre le traitement en orthophonie et la capacité d'un enfant à participer dans son monde. L'outil FOCUS est fiable et détient une forte validité conceptuelle. Il mesure les changements dans les habiletés de communication après 9 heures de thérapie. Il est maintenant prêt à être utilisé en clinique.

Trouble d'apprentissage non verbal : un autre nom pour un trouble du spectre de l'autisme?

Joanne C. Volden, Ph.D., University of Alberta, Edmonton, AB

Les profils de communication associés au trouble d'apprentissage non verbal et au trouble du spectre de l'autisme à haut fonctionnement sont tous deux caractérisés par une parole fluente et grammaticale, ainsi qu'une dysfonction pragmatique importante. Ce mini-séminaire explorera les profils de communication liés à ces deux troubles et présentera la recherche actuelle appuyant l'hypothèse que ces deux groupes sont indistinguables sur le plan de la communication.

Points de vue de parents concernant la relation entre l'enfant et l'orthophoniste et les résultats en termes de participation

Karla Washington, University of Cincinnati, Cincinnati, OH; Nancy Thomas-Stonell, Bloorview Research Institute, Toronto, ON; Sharynne

McLeod, Charles Sturt University, Bathurst, Australie; Genese Warr-Leeper, University of Western Ontario, London, ON; Bruce Oddson, Université Laurentienne, Sudbury, ON; Peter Rosenbaum, McMaster University/CanChild, Hamilton, ON

Les parents (n=52) d'enfants d'âge préscolaire avec un trouble de la parole et du langage, avec/sans handicap physique, ont donné leur point de vue concernant : a) la participation de leur enfant avant l'intervention et trois mois après l'intervention; et b) la relation entre l'enfant et l'orthophoniste établie lors de l'intervention en orthophonie. Un groupe additionnel de 15 enfants d'âge préscolaire sur la liste d'attente a servi de contrôle. Les parents ayant reçu de l'intervention ont rapporté une plus grande amélioration dans la participation que le groupe de contrôle. Les parents ayant reçu de l'intervention (>90 %) ont également indiqué avoir un point de vue positif ou très positif de la relation entre l'enfant et l'orthophoniste. Nous discuterons des (sous-)thèmes identifiés lors de l'analyse des rapports des parents.

Une mesure des résultats pour les jeunes enfants ayant un retard de la parole grave

Erica C. Woolridge, M. Sc. Orth., orth. aut., orth. (C), Université Memorial de Terre-Neuve, Mount Pearl (T.-N.-L.); Megan M. Hodge, professeure, Université de l'Alberta, Edmonton (Alb.); Shayna Scott, M. Sc.Orth., orth. aut.

Des analyses des pointages phonétiques et phonologiques à une tâche d'apprentissage imitatif de 30 mots (épreuve de la parole chez les enfants TOCS-30) pour 30 enfants âgés de trois ans (parole typique en fonction de l'âge; troubles du son conversationnel avec ou sans apraxie de la parole infantile présumée) ont révélé que l'épreuve TOCS-30 fournit un échantillonnage relativement stable du comportement de la parole qui distingue les enfants par niveau de gravité des troubles de la parole.

Résumés d'affiches

Affiches en orthophonie

La connaissance de la dysphagie et la confiance dans les compétences parmi les étudiants du 1er cycle en nutrition

Jennifer Ayres, M. Sc., Collège universitaire Brescia, London (Ont.); Julie A Theurer, Ph. D., M. Sc. Cl. orth. (C), Université Western Ontario, London (Ont.); Sharareh Hekmat, Ph. D., Collège universitaire Brescia, London (Ont.); Colleen Gobert, Ph. D., Collège universitaire Brescia, London (Ont.); Isabelle Giroux, Ph. D., Collège universitaire Brescia, London (Ont.)

Cette affiche présente une étude préliminaire qui évalue la connaissance sur la dysphagie , ainsi que la confiance dans les compétences liées à ce trouble, chez un groupe d'étudiants en nutrition du 1er cycle de London (Ontario). Au moyen d'une conception pré-/post-évaluation, on a administré des questionnaires pour saisir dans quelle mesure les expériences pédagogiques théoriques par opposition à pratiques améliorent la connaissance, l'aptitude et le confort par rapport à la pratique en dysphagie.

L'évolution du bilinguisme dans un milieu linguistique en situation minoritaire

Roxanne M. Bélanger, M. Sc. S., Université Laurentienne, Sudbury (Ont.); Chantal Mayer-Crittenden, M. Sc. S., Université Laurentienne, Sudbury (Ont.)

Cet exposé examine l'impact d'un statut linguistique minoritaire sur l'évolution du bilinguisme chez les enfants franco-ontariens et bilingues. Il comparera ensuite ce développement du langage avec la situation des enfants typiques et prématurés.

Les résultats de la thérapie de la voix par le chant choral chez les personnes atteintes de la maladie de Parkinson

Sable J. Chan, B. Sc., M. Sc. Orth., Université de l'Alberta, Edmonton (Alb.); Harold Wiens, Université de l'Alberta, Edmonton (Alb.); Benjamin V. Tucker, Ph. D., Université de l'Alberta, Edmonton (Alb.); Melanie M. Campbell, Ph. D., orth. aut., Orth. (C), Université de l'Alberta, Edmonton (Alb.)

L'étude actuelle fait enquête sur les changements observés dans les données des entrevues, du chant et de la parole obtenues auprès des personnes vivant avec la maladie de Parkinson par suite d'un traitement de la voix par le chant choral.

Il y a une applet pour cela : l'utilisation d'iPad en orthophonie

Robyn E. Conley, Université de l'Alberta, Edmonton (Alb.); Angèle D. Fournier, Université de l'Alberta, Edmonton (Alb.); Karly J. Hanson,

Université de l'Alberta, Edmonton (Alb.); Colleen P. O'Brien, Université de l'Alberta, Edmonton (Alb.); Lu-Anne L. McFarlane, orth. aut., Université de l'Alberta, Edmonton (Alb.)

Cette étude explore les connaissances et les croyances des orthophonistes à propos des principes des pratiques exemplaires et de l'utilisation des technologies dans le cadre des interventions. Elle documente les avantages et les limites de l'iPad lors des interventions et comment les applications sur iPad cadrent avec les principes des pratiques exemplaires. Elle a mené à des lignes directrices à l'intention des cliniciens, pour les aider à évaluer les applets et les suggestions des concepteurs d'applications.

Si vous aménagez le terrain… s'y installeront-ils? – Nitam Giigidowin

Susan L. Coulter, B. A. S., M. A., Membre OAOO, CCC en orth., Bureau de santé du district de Thunder Bay, Thunder Bay (Ont.); Cathy Farrell, B. Tr. soc., travailleuse sociale autorisée, Bureau de santé du district de Thunder Bay, Thunder Bay (Ont.); Colleen Mahoney, SDE, ÉPE, Bureau de santé du district de Thunder Bay, Geraldton (Ont.); Martha McClelland, B. A., M. A., Membre OAOO, Bureau de santé du district de Thunder Bay, Thunder Bay (Ont.); Chimere Okoronkwo, M. Sc., PGP, spécialiste de l'évaluation des programmes, Bureau de santé du district de Thunder Bay, Thunder Bay (Ont.)

Nitam Giigidowin collabore avec trois collectivités des Premières Nations du Nord de l'Ontario pour montrer que « si vous aménagez le terrain, ils s'y installeront À COUP SÛR ». En offrant des services à leurs communautés et en éduquant les parents et les membres de la collectivité à propos de l'importance des compétences en communication dès la petite enfance, on recherche une participation accrue des familles aux services de communication préscolaire.

La cartographie accélérée des noms et des verbes au moyen des indices grammaticaux chez les enfants au développement typique

Shannon M. Crane, M. Sc., Université Dalhousie, Saint John (N.-B.); Allison M. Kavanagh, M. Sc., Université Dalhousie, Torbay (T.-N.-L.); Elizabeth Kay-Raining Bird, Ph. D., Université Dalhousie, Halifax (N.-É.); Patricia L. Cleave, Ph. D., Université Dalhousie, Halifax (N.-É.)

La cartographie accélérée est l'utilisation des éléments contextuels pour acquérir rapidement des renseignements sur la signification d'un mot nouveau (Heibeck et Markman, 1987). Cette étude mène une enquête sur les effets de l'âge et de la catégorie de mot sur la cartographie accélérée des verbes et des noms chez les enfants au développement typique. Les chercheurs ont présenté les mots nouveaux avec des indices grammaticaux dans le cadre d'une tâche animée par ordinateur.

Le développement de sentiers d'accès alternatifs chez les étudiants ayant un handicap physique

Tania Desai, M. Sc., Membre OAOO, Orth. (C), Conseil scolaire du district de Toronto, Toronto (Ont.); Katherine Chow, M. Sc. en ergothérapie, ergothérapeute aut.. (Ont.), Conseil scolaire du district de Toronto, Toronto (Ont.); Leslie Mumford, M. Sc. S., ing. clinique, Holland Bloorview Kids Rehabilitation Center, Toronto (Ont.); Tom Chau, Ph. D., ing., Holland Bloorview Kids Rehabilitation Center, Toronto (Ont.)

On présentera une approche multidisciplinaire visant à fournir des sentiers d'accès alternatifs aux étudiants ayant un handicap physique dans un établissement scolaire. Un(e) orthophoniste, un(e) ergothérapeute et (e)un ingénieur(e) clinique mettront au point un accès personnalisé aux technologies afin de fournir à onze étudiants des possibilités de participer de manière autonome à leur milieu scolaire.

Les problèmes à manger et à avaler chez les cas de démence

Andrea Gregus, orth., Hôpital Queensway-Carleton, Nepean (Ont.); Angela Colton-Hudson, orth., Hôpital Queensway-Carleton, Nepean (Ont.); Michelle MacIsaac, orth., Hôpital Queensway-Carleton, Nepean (Ont.); Judy Rowlands, orth., Hôpital Queensway-Carleton, Nepean (Ont.)

Le Département d'orthophonie a préparé un fascicule pédagogique à l'intention des patients souffrant de démence, et leurs fournisseurs de soins, en ce qui a trait à la dysphagie. Le fascicule étayé de huit pages expose en détail les signes et les symptômes de la dysphagie aux stades préliminaire, intermédiaire et avancé; ce qu'est une évaluation de la déglutition et quand en demander une; l'hygiène buccale; et les soins de fin de vie.

Les outils d'ASC pour faire face à la progression de la SLA et d'autres maladies dégénératives

Stacey Harpell, B. S., M. S., CCC en orth., Bureau de santé régional de Saskatoon, Saskatoon (Sask.)

La plupart des textes sur la sclérose latérale amyotrophique (SLA) offrent des aperçus cliniques des interventions en ajout/suppléance à la communication (ASC). Peu de manuels fournissent des conseils pratiques, multimodaux et cliniques pour maximiser la communication. Le Bureau de santé régional de Saskatoon a cumulé des techniques thérapeutiques en un manuel qui met l'accent sur la fourniture d'une approche

multimodale aux interventions en ASC face aux maladies progressives.

Comprendre une source de malentendus de la part des enseignants au sujet de l'enseignement de la conscience phonologique

Denyse V. Hayward, Ph. D., orth., Université de l'Alberta, Edmonton (Alb.); Linda M. Phillips, Ph. D., Université de l'Alberta, Edmonton (Alb.); Stephen P. Norris, Ph. D., Université de l'Alberta, Edmonton (Alb.); Jane Khaemba, M. Éd., Université de l'Alberta, Edmonton (Alb.)

Nombreux sont les enseignants qui ont de piètres compétences en conscience phonologique (CP) composant l'enseignement exact de la CP en salle de classe. Nous avons examiné des ouvrages universitaires comme source de malentendus de la part des enseignants. Quatre-vingt-dix pour cent contenaient des renseignements inadéquats concernant l'enseignement exact de la CP. La conscience de ces questions permettra aux orthophonistes d'appuyer un enseignement amélioré de la langue et de l'alphabétisation dans les salles de classe.

L'analyse acoustique des voyelles produites par la parole spontanée et déclenchée par les locuteurs de l'Île-du-Prince-Édouard et de Halifax

Marsha S. Lannan, M. Sc., Université Dalhousie, Cornwall (Î.-P.-É.); Chelsey Gregory, M. Sc., Université Dalhousie, Halifax (N.-É.); Michael Kiefte, Ph. D., Université Dalhousie, Halifax (N.-É.); Elizabeth Kay-Raining Bird, Ph. D., Université Dalhousie, Halifax (N.-É.)

On a analysé la variation dialectale de l'anglais à l'Île-du-Prince-Édouard (Î.-P.-É.) par une analyse des formants d'enregistrements de la parole spontanée afin de déterminer les différences systématiques entre la production de la parole spontanée et déclenchée (c.-à-d., lue). En outre, on a examiné les changements spectraux propres aux voyelles pour déterminer les différences dialectales entre deux collectivités géographiquement distinctes (l'Est et le Centre de l'Î.-P.-É.).

Tous ensemble, maintenant! : un programme parental pour les TSA

Erin Lamond, M. Sc. orth. (C), Centres de l'ouïe et de la parole de la Nouvelle-Écosse, Dartmouth (N.-É.); Hilary Wallace, M. Sc. orth. (C), Centres de l'ouïe et de la parole de la Nouvelle-Écosse, Halifax (N.-É.); Stephen Anthony, M. Sc. orth. (C), Centres de l'ouïe et de la parole de la Nouvelle-Écosse, Evanston (N.-É.); Teresa Alexander-Arab, M. Sc. orth. (C), administratrice clinique, Centres de l'ouïe et de la parole de la Nouvelle-Écosse, Bridgewater (N.-É.)

Cette étude évalue l'efficacité de « All Together, Now! », un programme parental créé par les Centres de l'ouïe et de la parole de la Nouvelle-Écosse pour enfants présentant des troubles de la communication de nature sociale, surtout des troubles du spectre autistique (TSA). Les participants étaient d'âge préscolaire. Des analyses laissent entendre que la participation à ce programme améliore la mobilisation et la capacité de réponse chez ces enfants.

Une enquête nationale des services d'orthophonie pour enfants ayant des DD

Tracie L. Lindblad, Membre OAOO, M. Sc., M. Éd., BCBA, Centre de développement de l'enfant d'Oakville, Oakville (Ont.); Melissa Rourke, Université York, Toronto (Ont.); Adrienne Perry, Université York, Toronto (Ont.); Jonathan Weiss, Université York, Toronto (Ont.)

On présente les résultats d'une enquête pannationale portant sur les besoins en services d'orthophonie et l'utilisation de pareils services chez les enfants d'âge scolaire ayant des déficiences développementales graves, par rapport à des facteurs spécifiques : l'âge, le diagnostic et les données démographiques. Les résultats découlent d'une importante subvention des Instituts de recherche en santé du Canada qui a servi à étudier la santé, le mieux-être et l'inclusion sociale de ces enfants (www.go4kidds.ca).

Un outil décisionnel pour l'alimentation entérale à long terme

Margaret Lenny, inf. aut., Hôpital Queensway-Carleton, Nepean (Ont.); Andrea Gregus, orth., Hôpital Queensway-Carleton, Nepean (Ont.); Sherri Elder, diététiste, Hôpital Queensway-Carleton, Nepean (Ont.); Phillip Inouye, médecin et gastroentérologue, Hôpital Queensway-Carleton, Nepean (Ont.); Ena Dasberg, travailleuse sociale, Hôpital Queensway-Carleton, Nepean (Ont.); JoAnne MacNeill, diététiste, Hôpital Queensway-Carleton, Nepean (Ont.)

Les demandes d'avis auprès du Comité de déontologie de l'Hôpital Queensway-Carleton ont souvent un thème en commun en ce qui a trait à l'alimentation entérale. On a mis sur pied une équipe de travail interdisciplinaire chargée de proposer une approche standard en élaborant des outils et un processus pour appuyer les cliniciens dans les pourparlers avec le décideur substitut au sujet de l'amorce d'une alimentation entérale à long terme.

La formation en outils ASC dans les programmes d'orthophonie des universités canadiennes

Taslim N. Moosa, M. Sc. Cl. orth. (C), Membre OAOO, Université Western Ontario, London (Ont.); Stacy McDougall, orth., Centre pour enfants de Thames Valley, London (Ont.); Tracy Shepherd, orth., Centre pour enfants de Thames Valley, London (Ont.)

On a élaboré un questionnaire en vue de déterminer la quantité de contenu portant sur les outils d'ajout/suppléance à la communication (ASC) qui se trouve dans la préparation didactique et clinique des étudiants en orthophonie (Orth.) des universités canadiennes. On comparera ensuite les constatations de cette étude aux renseignements nationaux antérieurement publiés pour déterminer les tendances évolutives de la formation sur les outils ASC chez les étudiants en orthophonie.

La participation citoyenne et les personnes vivant avec l'aphasie

Taslim N. Moosa, M. Sc. Cl. orth. (C), Membre OAOO, Université Western Ontario, London (Ont.); Beata Batorowicz, ergothérapeute, Université McMaster, Hamilton (Ont.)

Les personnes ayant l'aphasie et leurs partenaires sur le plan de la communication ont partagé leurs perspectives sur le fait de vivre avec l'aphasie par voie de groupes de discussion. Les principaux points traités étaient : les changements dans la participation des suites de l'aphasie, les agents inhibiteurs et les agents facilitateurs de la participation, ainsi que l'incidence des changements de participation sur la qualité de vie.

Les perceptions d'étudiants en orthophonie ayant participé à un stage clinique innovateur

Taslim N. Moosa, M. Sc. Cl. orth. (C), Membre OAOO, Université Western Ontario, London (Ont.); Julie A. Theurer, Ph. D., M. Sc. Cl. orth. (C), Université Western Ontario, London (Ont.)

Cette affiche présente les réflexions d'étudiants en orthophonie obtenues avant et après leur participation à une expérience d'éducation clinique innovatrice. On compare les données provenant des enquêtes pré-/post-stages aux aspects révélés du perfectionnement professionnel qui pourraient être uniques à ce programme de formation novateur.

Une collaboration constructive à l'échelle du campus : des orthophonistes préprofessionnels et des enseignants travaillent ensemble

Salima Suleman, B. Éd, M. Sc. Orth., Université de l'Alberta, Edmonton (Alb.); Lu-Anne McFarlane, orth. aut., Université de l'Alberta, Edmonton (Alb.); Karen Pollock, Ph. D., Université de l'Alberta, Edmonton (Alb.)

Le projet de thèse de maîtrise s'est attardé à l'efficacité d'une exposition unique à l'éducation interprofessionnelle (ÉIP) chez les étudiants en éducation et en orthophonie. Les effets de l'ÉIP ont été révélés par une analyse des réactions des participants face aux construits sur la collaboration interprofessionnelle en lien avec la réflexion, les rôles professionnels, la communication, ainsi que la connaissance des modes de prestation de services spécialisés.

La démence frontotemporale : une étude de cas

Preethi T. Thomas, agrégé de recherche et orthophoniste en chef, Mysore (Inde); Satyapal P. Goswami, chargé de lecture en orthophonie, Mysore (Inde); Lakshmi S. Mohan, orth.

La démence frontotemporale (DFT) est un regroupement de troubles pathologiquement et cliniquement hétérogènes qui montre une dégénérescence des lobes frontal et temporal. Les données sur les syndromes cliniques de la DFT sont extraites d'études poussées. Cette étude de cas d'une femme âgée de 67 ans discute des caractéristiques cliniques et pathologiques de la démence frontotemporale.

Devenir clinicien : des études de cas sur les expériences de diplômés récents

Richard J. Welland, Université Brock, St. Catharines (Ont.)

On a interrogé individuellement et collectivement des récents diplômés en orthophonie pour solliciter leurs perceptions et leurs expériences durant le passage d'étudiant diplômé à clinicien praticien. Leurs intuitions ont servi à appuyer et à offrir des possibilités de transformation de nos approches actuelles à l'égard de l'enseignement supérieur et de la préparation clinique en orthophonie.

CALL FOR PAPERS
CASLPA Conference 2013
Victoria, BC
April 25-27, 2013

Deadline for receipt of all program submissions: September 30, 2012

Online abstract submissions at:
www.caslpa.ca/english/events/conference.asp

The Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) 2013 conference will be held in Victoria, British Columbia. CASLPA invites program submissions to the annual conference.

Clinicians from all practice settings are encouraged to share their insight, experience, methods and research. CASLPA invites submissions of papers, poster sessions, scientifi c exhibits, mini-seminars and DVDs. Multidisciplinary presentations will be considered. Sessions will be scheduled daily from April 25-27, 2013.

SESSION TYPES

Paper Presentations: A paper presentation should be based on current research that has not been published, clinical experience, or case studies (45 minutes in duration).

Mini-seminars: These sessions are designed to provide opportunity for interactive discussion of clinical practice and professional issues (90 minutes in duration).

Poster Sessions: Poster presentations should stand alone in conveying information. Each display should contain title and author(s), statement of purpose, methodology, results and conclusions. Posters must be in landscape format, no larger than 2.4 m x 1.2 m. Authors are required to be present at designated times to respond to questions and discussion.

Scientific Exhibits: These sessions will be incorporated with the poster presentations. Exhibitors are required to be present at designated times to describe and discuss the exhibit. A table of approximately 1.8 m x .75 m and a poster board of approximately 2.4 m x1.2 m will be available. Exhibitors are responsible for providing all equipment that will be required.

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The complete call for papers including conditions for acceptance, instructions and request for presentation form, can be downloaded from our website at: www.caslpa.ca/english/events/conference.asp

APPEL POUR COMMUNICATIONS
Congrès de l'ACOA 2013
Victoria (Colombie-Britannique)
du 24 au 27 avril 2013

Date limite de réception des propositions : le 30 septembre 2012

Vous pouvez soumettre votre proposition de communication en ligne au :
www.caslpa.ca/francais/events/conference.asp

Le congrès annuel 2013 de l'Association canadienne des orthophonistes et audiologistes (ACOA) se tiendra à Victoria en Colombie-Britannique. L'ACOA vous invite donc à soumettre vos propositions de communications pour le programme de son congrès annuel 2013.

Les cliniciens de tous types de pratique sont encouragés à partager leurs réfl exions, leurs expériences, leurs méthodes et leurs recherches. L'ACOA souhaite recevoir des propositions d'articles contribués, d'affi ches, d'expositions scientifi ques, de mini-séminaires, de formation et de DVD. Les présentations multidisciplinaires seront également prises en considération. Les sessions se tiendront pendant le jour, du 24 au 27 avril 2013.

TYPES DE SESSION

Présentation de communication : Un article contribué devrait être fondé sur un projet de recherche en cours, une expérience clinique ou une étude de cas, être récent et ne pas avoir été publié (durée de 45 minutes).

Mini-séminaires : Ces séances sont conçues de manière à susciter des discussions interactives au sujet de la pratique clinique et de problèmes professionnels (durée de 90 minutes).

Séances d'affi chage : Les affi ches doivent, à elles seules, fournir toute l'information nécessaire. Chacune doit comprendre le titre et le nom du ou des auteurs, les objectifs du projet, la méthodologie, les résultats et conclusions. Les affi ches doivent être en orientation horizontale (paysage) et ne pas dépasser 2,4 m par 1,2 m. Lors de périodes établies à l'avance, les auteurs devront être présents pour répondre aux questions et participer aux échanges (discussions).

Expositions scientifi ques : Ces activités seront incorporées aux affi ches. Lors de périodes établies à l'avance, les exposants devront être présents pour décrire leur exposition et en discuter avec les participants. Les exposants auront accès à une table mesurant environ 1,8 m par 0,75 m et à une affi che de 2,4 m x 1,2 m. Les exposants sont responsables d'apporter tout autre équipement nécessaire.

Présentations de vidéocassette : Vous pouvez présenter un DVD sur des sujets cliniques, des études de cas, des agences, des procédures de thérapie ou d'autres sujets.

Le formulairepour soumettre les propositions de communications, les conditions et les instructions peuvent être téléchargés à partir du site Web de l'ACOA au www.caslpa.ca/francais/events/conference.asp

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 has established multiple categories of manuscript submission that will permit the broadest opportunity for dissemination of information related to human communication and its disorders. The 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.

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Contributors should use the electronic CJSLPA manuscript submission system at http://cjslpa.coverpage.ca to submit articles. If you are unable to use the electronic system, please 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: tim.bressmann@utoronto.ca.

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 it 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), 6th 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 electronic copy of the manuscript should be submitted directly to the editor. Author identification for the review process is optional; if blind-review is desired, the documents should be prepared accordingly (cover page and acknowledgments blinded). Responsibility for removing all potential identifying information rests solely with the author(s). All submissions should conform to the publication guidelines of the most current edition of the Publication Manual of the American Psychological Association (APA. The APA manual is available from most university and 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 typedwritten double-spaced and placed at the end of the document. 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 to be included as part of the manuscript must also be submitted in their original file format separate from the manuscipt. 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.

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Page Numbering and Running Head: The text of the manuscript should be prepared with each page numbered, including tables, figures/illustrations, references, and 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 page. 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 most current edition of the APA publication manual 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.

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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 CJSLPA 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 within the publication.

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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 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 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

Pour soumettre un article, les auteurs doivent utiliser le système de soumission électronique de l'ACOA à l'adresse http://cjslpa.coverpage.ca. Si vous ne pouvez pas utiliser le système électronique, veuillez envoyer par courriel un fichier Word ou WordPerfect contenant le manuscrit, y compris tous les tableaux, les figures ou illustrations et la bibliographie. Adressez le courriel au rédacteur en chef à l'adresse tim.bressmann@utoronto.ca.

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)*, 6e Édition. 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 écrits 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. Un fichier électonique du manuscrit doit être présenté 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 un fichier électronique 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 les plus récentes de l'APA. Ce manuel est disponible dans la plupart des librairies universitaires et 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, l'adresse complète de l'auteur-contact et l'adresse de courriel de l'auteur contact.

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 écrits 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.

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.

Illustrations : Toutes les illustrations faisant partie du manuscrit doivent être annexer avec chaque exemplaire du manuscrit. Chaque manuscrit doit être accompagné d'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 écrits à double interligne sur une page distincte et identifiées à l'aide d'un numéro qui correspond à la séquence de parution des figures et illustrations dans le manuscrit.

Numérotation des pages et titre courant : Chaque page du manuscrit doit être numérotée, y compris les tableaux, figures, illustrations, références et, le cas échéant, les annexes. Un bref (30 caractères ou moins) titre courant descriptif doit apparaître dans la marge supérieure droite de chaque page du manuscrit.

Remerciements : Les remerciements doivent être écrits à double interligne sur une page 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 le plus récent 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 écrits à double interligne.

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.

CASLPA-ACOA