Graduate Student Clinicians in Health Care Professions as Stakeholders in Intensive Comprehensive Aphasia Program (ICAP) Implementation and Research

Catherine A. Off, Victoria L. Scharp, and Jenna R. Griffin-Musick

Purpose: This article characterizes graduate student clinicians' (GSCs') understanding of their roles as stakeholders in clinical implementation and research before participating in an intensive comprehensive aphasia program (ICAP). **Method:** Seven GSCs participated in a pre-ICAP intervention focus group to characterize their perceived roles in stakeholder-engaged research. Following an extensive ICAP training orientation and clarification of key definitions, the focus group prompt asked GSCs to describe what they view as important issues for developing future research protocols that investigate student clinician outcomes in the context of an ICAP. Qualitative content analysis using an inductive coding approach was applied to the focus group transcript. **Results:** The GSCs preparing to participate in ICAPs report that they are highly invested in the clinical implementation and research of the ICAP service delivery model. **Discussion/Conclusions:** The GSCs are crucial stakeholders in the development of GSC-run ICAPs across clinical implementation and all phases of research. **Key words:** *aphasia rehabilitation*, *graduate student clinicians*, *intensive comprehensive aphasia program (ICAP)*, *stakeholders*

Author Affiliations: School of Speech, Language, Hearing, and Occupational Sciences, College of Health, University of Montana, Missoula (Dr Off and Ms Griffin-Musick); and Department of Communication Sciences and Disorders, College of Health, Idaho State University, Pocatello (Dr Scharp).

Catherine A. Off and Jenna Griffin-Musick disclose that they are salaried by the University of Montana and codirect the Big Sky Aphasia Program that implements the ICAP discussed in this manuscript. Victoria L. Scharp is salaried by Idaho State University but reports no other relationships to disclose.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www. topicsinlanguagedisorders.com).

The author and planners have disclosed no potential relevant financial relationships or otherwise. Author

INTRODUCTION

Students as stakeholders in health care research

Training practices across health care professions currently emphasize student perspectives related to program evaluation (Adams & Neville, 2020) and exposing

disclosures can be found at http://links.lww.com/TLD/ A104.

Corresponding Author: *Catherine A. Off, PhD, School of Speech, Language, Hearing, and Occupational Sciences, College of Health, University of Montana, 32 Campus Dr, Missoula, MT 59812 (catherine.off@ umontana.edu).*

DOI: 10.1097/TLD.0000000000000303

students to a range of clinical placement experiences (Nyoni et al., 2021). Given the recent pivot toward stakeholder-engaged research practices (Linnan et al., 2010; Overby & Baft-Neff, 2017), a shift in student training practices can propel the next generation of clinicians to expand their clinical mindset to include a stakeholder view. University clinics with active clinical research programs are in a unique position to help students extend their knowledge to include a stakeholder perspective.

The literature that includes students as stakeholders across health care is sparse (for an exception, see the study by Nasrabadi et al., 2021). In fact, a recent article by Petkovic et al. (2020) does not include students or student training as a component in their protocol to guide multistakeholder engagement in health care. Students can and should be included in the "providers" grouping of the eight categories of stakeholders identified as having an interest in guidelines to inform health care decision making. In addition, of the four levels of engagement proposed for stakeholder-engaged research guidelines (i.e., communication, consultation, collaboration, and coproduction), students can be included at the consultation or collaboration levels (Petkovic et al., 2020). At these mid-levels of the engagement process, students can go beyond being receivers of information (Level 1, Communication) to provide their viewpoints or feedback about the research (Level 2, Consultation) or influencing the decision-making process (Level 3, Collaboration) without having a direct role in the decision-making process.

Students as stakeholders in Intensive Comprehensive Aphasia Programs

The Intensive Comprehensive Aphasia Program (ICAP) service delivery model is growing worldwide as a preferred form of post–acute aphasia rehabilitation (Monnelly et al., 2021; Rose et al., 2013; Rose et al., 2021). By definition, ICAPs must include cohort-based individual and group therapy interventions, infusing evidence-based, patient-centered goals that target both the impairment and communicative participation levels of the WHO-ICF (Rose et al., 2013; World Health Organization [WHO], 2001). The ICAPs are designed to systematically apply principles of neuroplasticity (Mohr et al., 2017; Raymer et al., 2008), with recent evidence of neural reorganization stemming from an ICAP intervention (Baliki et al., 2018). Converging evidence supports the substantial cognitive–linguistic and psychosocial benefits of ICAPs participation (Babbitt et al., 2015; Dignam et al., 2015; Griffin-Musick et al., 2020; Nicholas et al., 2022), and there is documented growth in the total number of ICAPs currently operating internationally between 2013 and 2021 (Rose et al., 2021).

Despite their benefits and holistic approach to service delivery, ICAPs are often expensive and can be difficult to access. Initiating an ICAP has been estimated to cost about $15,300 per 10 participants or about $19,700 per six participants in the United States (Boyer et al., 2020), and one ICAP reported a per patient cost of $6,500 in the United Kingdom (Leff et al., 2021). Staffing costs to execute an ICAP are the primary expense, so models that incorporate student clinicians are one way to reduce costs and increase ICAP access for stroke survivors. As a growing service delivery model, ICAPs are fertile ground for studying stakeholder-engaged clinical research from a multitude of perspectives.

The emerging ICAP stakeholder research base captures a range of stakeholders including researcher/clinician and patient-reported outcomes (Auclair-Ouellet et al., 2021; Babbitt et al., 2015; Dignam et al., 2015; Griffin-Musick et al., 2021; Leff et al., 2021; Persad et al., 2013) and some early but limited exploration into patient (Babbitt et al., 2021), caregiver (Off et al., 2019), clinician (Babbitt et al., 2013), and policy (Boyer et al., 2020) perspectives. Student perspectives into ICAPs as a delivery model are currently limited to program implementation studies (Babbitt, et al., 2013; Trebilcock et al., 2019; Trebilcock et al., 2022) with two notable exceptions. Kincheloe et al. (2022) qualitatively examined the student perspective

of participating in an interprofessional education aphasia community group in the context of an ICAP. Results from this study suggested that student clinicians perceived interprofessional practice and collaboration to improve their knowledge, skills, and attitudes about both their own discipline and the discipline of their interprofessional collaborator. One additional study (Mendez & Hildebrand, 2020) qualitatively reported on occupational therapy student perspectives after participating in an ICAP, concluding that occupational therapy students (1) wanted more consistent and formal interaction with speech–language pathology (SLP) students throughout the ICAP duration, and (2) appreciated the hands-on experience that prepared them for practice with patients with aphasia.

Stakeholder-engagement practices are rarely evaluated using formal or informal means, particularly as part of the student training process. To bring the graduate student clinician (GSC) into the stakeholder-engaged research process, this study describes student priorities and perceptions about their engagement in clinical implementation and clinical research of the ICAP service delivery model. The aim of this article is to characterize SLP graduate students' understanding of their roles and potential contributions as stakeholders in clinical research immediately after their ICAP orientation and onboarding experience but before implementing the ICAP.

METHODS

Research design

To characterize GSCs' understanding of their roles and potential contributions as stakeholders in ICAP implementation and research, this study explored graduate student perceptions about their own involvement in ICAP delivery and ICAP research through participation in a pre-ICAP focus group. Analysis of qualitative focus group data is used to characterize the perspectives of GSCs who were preparing to engage in the implementation of the ICAP service delivery model at the University of Montana (UMT). This pre-ICAP exploration of graduate student perspectives is a first step in the process of understanding how GSCs engage as stakeholders in both clinical implementation and research of the ICAP service delivery model. Characterizing graduate student stakeholder perspectives prior to ICAP implementation offers researchers an opportunity to glean insight from the graduate student that is not influenced by ICAP experience. Future studies will explore graduate students' participation in clinical implementation of an ICAP and post-ICAP reflection of that experience.

The Agency for Healthcare Research and Quality Effective Health Care Program defines a "stakeholder" as "a person or group with a vested interest in a particular clinical decision and the evidence that supports that decision" (Cottrell et al., 2014, p. 1). Stakeholders in health care include patients, care partners, administrators, funders, policy makers, and critically for university training programs, student clinicians. Ray and Miller (2017) emphasize the need to distinguish between studies that aim to report on the impact of stakeholder engagement through a methodological emphasis and the current study of stakeholder-engaged research in which the stakeholders (i.e., the student clinicians) are an integral part of the aims of a given study. Proposed minimum reporting recommendations for stakeholder-engaged research (Ray & Miller, 2017) include composition and recruitment of stakeholders, input desired/goals of engagement, frequency and duration of interactions, and conducting an evaluation of immediate study outcomes. This study adheres to these reporting recommendations in an effort to promote replicability and clearly define how the students were engaged in the clinical research process prior to their intensive clinical rotation.

Participants

Seven speech–language pathology GSCs (male = 1; female = 6) were enrolled in a

Table 1. Graduate student clinician demographic information

Age (Years)	Biological Sex	Race/ Ethnicity
22	Female	Caucasian
28	Female	Caucasian
37	Female	Caucasian
41	Female	Caucasian
41	Male	Caucasian
44	Female	Caucasian
46	Female	Multiethnic

summer neurological rotation in the 2022 University of Montana ICAP (UMT ICAP) and consented to participate in the research protocol (IRB #78-22). The UMT GSCs ranged in age from 22 to 46 years (mean = 37; *SD* = 8.83); six GSCs were Caucasian and one GSC reported multiethnic background. Refer to Table 1 for GSC demographic information. The GSCs had completed their first year of the academic master of science 2-year SLP program; had completed graduate-level coursework in the areas of aphasia, acquired apraxia of speech, and acquired cognitive-communication disorders, and received a 1-week intensive orientation prior to the ICAP. Refer to Table 2 for a summary of GSC educational background and clinical experience information. The UMT offers a blended graduate program that includes both campus-based and distance students in each graduate cohort to meet the needs of the rural Mountain West. It is typical for UMT GSC cohorts to

Table 2. Graduate student clinician educational and clinical experience history[a]

Campus, Distance	Other Degree(s)/ Certificates and Date of Completion (If Reported)	Number of Clinical Clock Hours at Start of ICAP	Previous Experience Working as Another Health Profession(s)	Previous Experience Working With Interprofessional Teams
Campus	BA, CSD (2021)	65	CNA	None reported
Campus	Leveling in CSD (2021); BS in Early Childhood Education (2016)	60	None reported	Vocational rehabilitation specialist
Campus	Leveling in CSD (2020); BS in Health and Human Performance (2014)	72	Mental health technician; CNA	PT, OT, SLP, physicians, nurses
Distance	Leveling in CSD and SLPA certificate (2021); BFA theater	0	None reported	Teachers, school counselors
Distance	BA in CSD (2021)	0	Residential group home manager	SLP, OT, PT, special educators
Distance	Leveling in CSD BFA in theater	0	None reported	Teachers, school counselors
Distance	Leveling in CSD (2021); BS in psychology (2010)	0	Occupational therapy assistant	OT, PT, SLP, nurses, social workers, physicians

Note. BA = bachelor of arts; BFA = bachelor of fine arts; BS = bachelor of science; Campus = graduate student clinicians who complete the majority of their coursework physically on campus; CNA = certified nursing assistant; CSD = communicative sciences and disorders; Distance = students who complete the majority of their coursework remotely but synchronously with campus students via Zoom; ICAP = Intensive Comprehensive Aphasia Program; OT = occupational therapy; PT = physical therapy; SLP = speech–language pathology; SLPA = speech–language pathology assistant.
[a]To ensure participant confidentiality, data in Table 2 do not correspond directly to data in Table 3.

include diversity of age and educational/clinical experiences.

Prior to the start of the ICAP, GSCs completed a Qualtrics-based pre-ICAP self-assessment of perceived knowledge, skills, competencies, and confidence about treating individuals with aphasia and working in an interprofessional context (see Supplemental Digital Content Appendix A, available at: http://links.lww.com/TLD/A101). Overall, GSCs reported that they did not feel confident planning sessions for persons with aphasia (mean = 1.75/5.0, range = 1.0–3.0) and were not confident in completing assessments (mean = 1.75/5.0, range = 1.0–3.0) or carrying out treatment (mean = 1.63/5.0, range = 1.0–3.0). The GSCs reported that they felt somewhat confident using aphasia-friendly communication strategies (mean = 2.25/5.0, range = 1.0–3.0) and providing education about aphasia to persons with aphasia and their family care partners (mean = 2.12/5.0, range = 1.0–3.0). They reflected more comfort interacting on interprofessional teams (mean = 3.12/5.0; range = 1.0–5.0) and felt confident educating other professions about their role on a health care team (mean = 3.12/5.0; range = 1.0–4.0). The GSCs also completed two self-report measures, the *Perceived Stress Scale* (PSS; Cohen et al., 1983) and the *Patient Health Questionnaire-8* (PHQ-8; Kroenke et al., 2009), to document their perceived well-being as they prepared for the ICAP. The mean score on the PSS for GSCs was 19.2/40 (range = 10–27, SD = 6.31), suggesting moderate stress at the group level. The mean pre-ICAP PHQ-8 score for GSCs was 5.2/24 (range = 0–14, SD = 4.49). Students commonly reported trouble sleeping (i.e., question 3, mean = 1/3, SD = 0.81), as well as feeling tired and having little energy (i.e., question 4, mean = 1.41/3, SD = 0.97). Refer to Table 3 for PSS and PHQ-8 scores.

Procedures

University of Montana ICAP overview

The UMT ICAP takes place in-person one time per year during the summer term. Dur-

Table 3. Self-reported wellness scores for graduate student clinicians[a]

PSS Total Score (0-40)	PHQ-8 Total Score (0-24)
23	7
17	2
27	14
14	4
18	6
10	0
26	4

Note. PHQ-8 = Patient Health Questionnaire-8; PSS = Perceived Stress Score.
[a]To ensure participant confidentiality, data in Table 3 do not correspond directly to data in Table 2. The PSS measures the degree to which life situations are appraised to be stressful. The PSS items are scored according to response option (0 = never and 4 = very often), with a range of total scores from 0 to 40. Scores ranging from 0 to 13 are considered low stress. Scores ranging from 14 to 26 are considered moderate stress. Scores ranging from 27 to 40 are considered high perceived stress. The PHQ-8 is used to identify the presence or absence of depressive symptoms and to document the severity of present depressive symptoms. Each item is scored according to response option (0 = not at all and 4 = nearly every day), with a range of total scores from 0 to 24. A cut point of 10 or greater is considered a "yellow flag" (i.e., drawing attention to a possible clinically significant condition), whereas a cut point of 15 is a "red flag" (i.e., targeting individuals in whom active treatment is probably warranted).

ing the 2022 UMT ICAP session, eight stroke survivors with aphasia and their family care partners were enrolled. Each of the GSCs was paired with one family living with aphasia for the duration of the program. The UMT ICAP includes comprehensive pre- and post-treatment assessment of the stroke survivor with aphasia and evaluation of the impact of stroke and aphasia on the primary family care partner. The UMT ICAP intervention period includes 5 hr of treatment (i.e., individual and group) per day, 4 days per week, for 4 weeks (totaling 80 hr of treatment). For additional programmatic and intervention details about the UMT ICAP, see the studies by Griffin-Musick et al. (2020), Griffin-Musick et al. (2021), Kincheloe et al. (2022), and Off et al. (2019).

GSC orientation and onboarding

Beginning one and a half weeks prior to the start of the ICAP, GSCs participated in a 6-day intensive orientation and training (40–45 hr total), during which students engaged in didactic and experiential learning to prepare for their ICAP rotation. Orientation activities included a review of the ICAP philosophy and structure and a discussion of concepts employed during this program including principles of neuroplasticity (Kiran & Thompson, 2019; Kleim & Jones, 2008), the Life Participation Approach to Aphasia (LPAA; Chapey et al., 2000), and the WHO-ICF (WHO, 2001). Procedural instruction was provided related to clinical writing, documentation, and collaborative goal development, and introduction to interprofessional training opportunities set to occur during the treatment phase of the ICAP. The GSCs also received hands-on training of the ICAP assessment protocol and practiced evidence-based treatment approaches with peers. Finally, GSCs engaged in guided observation of the ICAP assessment battery. See Supplemental Digital Content Appendix B, available at: http://links.lww.com/ TLD/A102, for additional details.

GSC focus group

At the end of their last day of ICAP orientation and training, UMT GSCs participated in a 30-min focus group that was moderated by the two UMT ICAP directors (first and third authors). At the start of the focus group, the moderators also defined stakeholder-engaged research (SER) and public and patient involvement (PPI) and provided a description of the various ways that stakeholders can engage in the research process (Mc Menamin et al., 2022). The moderators described the current state of the ICAP evidence base and answered any questions that GSCs had about SER, PPI, and/or ICAP research. The moderators then started the focus group discussion with the prompt: What do you, as student clinicians who are acquiring knowledge skills and clinical competencies in the context of an ICAP, see as important issues for developing future research protocols that explore/investigate student clinician outcomes in the context of an ICAP? Questions designed to further the discussion included (1) What does it mean to you to be a stakeholder in research? (2) Why would researchers and/or clinical providers want students to be stakeholders? (3) What is your role as a student clinician in an ICAP/ICAP research? The moderators ensured that all participants had an opportunity to answer each focus group question; however, participants often responded in a conversational manner, contributing as a group.

Data collection and analysis

The GSC focus group took place in a classroom in the Curry Health Center at the University of Montana. The focus group was audio-recorded on two devices to ensure recording quality for transcription accuracy. The audio files were initially transcribed verbatim using free, automated audio-to-text transcription software (Descript, 2021). A UMT graduate student researcher and an Idaho State University graduate student researcher not involved in the data collection process then independently reviewed 100% of both audio files along with the Descript transcript, revising and finalizing the transcript (see Supplemental Digital Content Appendix C, available at: http://links.lww. com/TLD/A103).

Qualitative content analysis procedures (Creswell & Poth, 2018; Graneheim & Lundman, 2004; McAllister et al., 2022) were used to analyze the "manifest content" (i.e., obvious content) of the focus group text (McAllister et al., 2022, pp. 101). An inductive approach to data analysis was used, given the lack of existing research about students as stakeholders in health care and ICAP research. Analysis of the single focus group transcript (i.e., unit of analysis) at the level of sentences and paragraphs (i.e., meaning unit) included coding (i.e., assigning a code to each meaning unit), clustering the codes into subcategories, and developing overarching categories to characterize the nature

of the GSCs' perceptions (as stakeholders) about issues pertaining to ICAP implementation and ICAP research.

Three researchers (i.e., first, second, third authors) read the transcript multiple times to obtain a sense of the whole (Nasrabadi et al., 2021), made notes of their thoughts directly in a copy of the transcript, and then independently and concurrently created codes (i.e., open coding) using an inductive analysis approach (McAllister et al., 2022). To achieve coding agreement, the three researchers then met to discuss and resolve coding disagreements. The researchers then grouped codes into subcategories according to conceptual similarities and differences. These subcategories were then developed into mutually exclusive, saturated categories that provided the foundation for developing the conceptual model pertaining to GSCs. Credibility was addressed through member checking, peer checking, and the reviewers' prolonged engagement with the data. Transferability is addressed through rich description of methods and results.

RESULTS

The GSCs participated in the focus group that lasted 22 min 4 s. Qualitative content analysis of the single transcript across three trained researchers led to the development of 27 codes, six subcategories, and three broad categories including (1) baseline characteristics of GSCs as variables of interest for ICAP implementation and research, (2) GSCs as stakeholders in ICAP implementation, and (3) GSCs as stakeholders investing in ICAP research. Refer to Table 4 for a comprehensive list of codes, subcategories, categories, and sample quotes.

Five of the seven GCS responded to the member check request. The GSCs were provided with the written results accompanied by Table 4 and asked to reflect upon the accuracy and thoroughness of reported categories and subcategories. The GSCs provided no new information during the member check process but emphasized their interest in

have access to increased research pertaining to ICAPs that include students as both researchers and clinicians.

GSC baseline characteristics as variables of interest

The GSCs discussed their own **baseline characteristics** (e.g., demographic information; campus/distance/online student) and **baseline experiential history** (e.g., number of clinical rotations and clinical clock hours; previous health care or professional experiences) as being variables that should be considered by clinicians and educators who are developing training procedures for GSCs to participate in ICAPs. The GSCs discussed that these variables may inform the preparedness of each GSC cohort, providing insight into the nature and degree to which various aspects of clinical training are provided before engaging in the ICAP service delivery model. The GSCs discussed that these same baseline variables should be considered and experimentally manipulated by researchers who are investigating ICAPs that include GSCs in their delivery models.

GSCs as stakeholders in ICAP implementation

The GSCs identified elements that highlighted their roles as stakeholders when implementing ICAPs, focusing on the **relationship dynamics** involved in GSC cohort development and the collaborative work that takes place with GSC peers, clinical supervisors, and families living with aphasia. The GSCs discussed that baseline experiential diversity of the cohort can support within-cohort peer mentorship and that generational diversity of a cohort supports bidirectional mentorship in the novel and intensive training context of an ICAP. The GSCs emphasized the strength of the student cohort model for clinical training, stating that "we're all in it together." The GSCs also emphasized the inherent trust that they must have in their clinical supervisors to guide them through the rapid learning and complexities of the ICAP model. The GSCs also discussed their

Table 4. University of Montana graduate student clinician focus group content analysis summary

Category	Subcategory	Codes	Sample Quotes
Baseline Characteristics of GSCs	GSC Baseline Characteristics	Demographics; generation; type of student (distance vs. campus)	"… level of preparedness, and like timeframe of training. And then looking at the different groups as, it was already said, between, you know, people who've had maybe two clinical rotations, already and no clinical rotations." (GSC Baseline Experiential History)
	GSC Baseline Experiential History	Number of clinical rotation; professional/medical, educational, or vocational background; nature of ICAP training/orientation; soft skill competency; life experiences	"… cause I have a medical background, and thinking back to my first clinicals, like before I started OT stuff and I remember being feeling much more lost than I do now. So I'm sure that makes a big difference." (GSC Baseline Experiential History)
GSCs as Stakeholders in ICAP Implementation	GSC Dynamics of Cohort	Diversity of cohort; trust in supervisors; student-patient matching; within-cohort mentorship, bidirectional mentorship; cohort relationship	"…you know, to, to trust in you guys, that the process that we're going through now is going to build us as clinicians and help us build resilience and, um, those kinds of things." (GSC Dynamics)
	Development & Relationships with Others		"I think there's some, um, relationship dynamics that are interesting to a student. We're all coming in to this together. And there's a relationship between the cohort of students that's coming in to build." (GSC Dynamics)
	GSC Expected Outcomes	Psychosocial well-being, wellness, clinical competencies, confidence, resilience	"…and that we're all in it together" (GSC Dynamics)
			"So I guess it's more the generational thing. So it's like we, there's a series of generations to learn from." (GSC Dynamics)
			"I'm thinking that the confidence piece is a big one … you will hopefully see a big rise in the confidence being with patients, um, from the beginning to the end of that, not just our confidence with each specific treatments, but in the clinical environment generally." (GSC Expected Outcomes)

(*continues*)

Table 4. University of Montana graduate student clinician focus group content analysis summary (*Continued*)

Category	Subcategory	Codes	Sample Quotes
GSCs as Stakeholders Investing in ICAP Research	GSCs as ICAP Ambassadors	Fostering ICAP development; Future ICAP reimbursement	"… like that this could be the start of like more growth of these. And we're helping build that growth. It's a lot." (GSCs as ICAP Ambassadors)
	GSCs Want to Understand & Contribute to the ICAP Evidence Base	SLP vs. GSC-led ICAPs; ICAPs vs. mICAPs; decision making; long-term interest; full access to research	"Might convince insurance companies to pay for ICAPs that are still led by grad students. If that research was to show that it's just as good as an ICAP with certified SLPs only." (GSCs as ICAP Ambassadors)
			"So, how much help am I giving as a GSC? Compared to maybe somebody a little more successful, or not successful, but knowledgeable than myself. And does that make a difference?" (GSCs and ICAP Evidence Base)
			"We want to be stakeholders in the sense that we're actually truly involved in the process in generating ideas and helping make decisions, not just sort of automated data collectors." (GSCs and ICAP Evidence Base)

Note. GSC = graduate student clinician; ICAP = Intensive Comprehensive Aphasia Program; mICAP = modified Intensive Comprehensive Aphasia Program; SLP = Speech–Language Pathologist.

own **expected outcomes** of clinical development in the context of the ICAP service delivery model (e.g., clinical competencies, clinical confidence, psychosocial well-being, resilience), focusing on the likelihood that the ICAP service delivery model has the potential to rapidly increase confidence, clinical competencies, and resilience, particularly when compared with traditional (i.e., not intensive) clinical rotations.

GSCs as stakeholders investing in ICAP research

The GSCs highlighted current limitations in the emerging ICAP evidence base and their desire to invest in the future of ICAP research. The GSCs emphasized their potential to act as **ICAP ambassadors**, gaining specific knowledge, skills, and competencies that support their ability to promote and foster ICAP implementation across a variety of clinical settings when they enter the workforce and to engage long-term in the ICAP research process. The GSCs want to be **fully involved in the ICAP research process** at all levels of engagement, providing input, generating ideas, and making research decisions. Importantly, GSCs do not want to be "just … automated data collectors." The GSCs highlighted several aspects of ICAP research that should be investigated including (1) directly comparing patient outcomes in the context of experienced clinician-led ICAPs with those implemented by GSCs and (2) directly comparing patient and GSC outcomes in the context of ICAPs with outcomes stemming from modified ICAPs (mICAPs) that intentionally vary one element such as overall program intensity. The GSCs report wanting to have strong evidence that demonstrates improved patient outcomes when GSCs implement ICAPs to increase their confidence in participating in ICAPs. The GSCs also report wanting to know how the mICAP service delivery model compares with the ICAP model in terms of magnitude of change for GSC clinical knowledge, skills, and competencies.

DISCUSSION

This preliminary study involving GSCs from the University of Montana provides evidence that GSCs preparing to participate in an ICAP are highly invested in the clinical implementation and research of the ICAP service delivery model. Students in training have the potential to play a critical role as stakeholders in ICAPs. The GSC focus group results reinforce that students are interested in investing in ICAPs as both a training model and as vital contributors to the evidence base. Prior to the formal launch of the ICAP, students are looking to the ICAP experience as integral to their clinical growth for patients with acquired neurologic communication disorders and their overall confidence as a supervised provider. Students want ICAP research that compares patient outcomes from student-led to SLP-led ICAPs and for the ICAP research community to be responsive to how ICAPs directly contribute to student clinical knowledge and confidence outcomes. Students also want to be fully involved in the ICAP research process including receiving information, being consulted throughout the research process, and planning jointly with a defined role (Mc Menamin et al., 2022).

One seminal comment from the focus group exemplifies the student perspective that GSCs are poised and ready to be active at high levels of the four-level stakeholder–engaged research guidelines (Petkovic et al., 2020). Students expressed their desire to be more than "just … automated data collectors" essentially hovering at the lowest level, Communication (Level 1). For GSCs to reach the Consultation and/or Collaboration levels (Levels 2 and 3), intentional planning by ICAP directors, including structured opportunities for students to provide feedback throughout ICAP delivery, is needed for students to exert themselves as integral partners influencing the decision-making process for ICAPs. Folding students into the inner workings of the ICAP model in real time while they are providing services will be a delicate but necessary

balance for ICAP leaders, and the results of this study indicate that students are eager to contribute.

Although the ICAP efficacy evidence base continues to grow (Monnelly et al., 2021; Nicholas et al., 2022), continued programmatic challenges to ICAP implementation persist. Most notably, not all stroke survivors with aphasia have access to the ICAP service delivery model. The ICAPs remain relatively scarce worldwide (Rose et al., 2021) and the financial and operational costs of the ICAP model are high (Boyer et al., 2020). The ICAPs that use GSCs have the potential to increase access and to reduce costs associated with staffing. This study provides preliminary evidence that GSCs are invested in participating in both clinical implementation and research endeavors for the ICAP service delivery model. Graduate student clinicians, regardless of their demographic information, educational history and/or clinical training experiences, level of clinical confidence, and/or perceived stress and wellness, are engaged stakeholders who are fully capable of providing meaningful insight into ICAP implementation and research endeavors.

Study limitations and future directions

This study provides early evidence that captures graduate student perspectives regarding their role as stakeholders in ICAP implementation; however, a primary study limitation is the power differential between the moderators and the focus group participants. Because of the operational structure of ICAP implementation at a university clinic, ICAP directors are also current professors, researchers, and clinical supervisors for the graduate student focus group participants. Detailed knowledge of the ICAP model and its evidence base is necessary to field questions and facilitate this type of focus group discussion; however, future studies that include focus group methodology could include moderators who are ICAP directors from other university programs who do not have a role in evaluating student performance of participants or perhaps students who have already completed an ICAP experience. Another study limitation is that the data set includes students from a single cohort at one university prior to ICAP implementation, thereby limiting generalizability/transferability of findings. Future studies will address this limitation directly by including another Mountain West university, Idaho State University, which also includes graduate students in ICAP implementation as part of the clinical training program for their online student cohort.

The next step for this programmatic line of students as stakeholders in clinical research in the context of ICAPs is to complete pre-ICAP and post-ICAP data collection and analysis of the knowledge, skills, and competencies that are targeted during an intensive training experience such as the ICAP/mICAP service delivery model. These data will be aggregated with quantitative data for GSCs from prior intensive programs to assess for trends across a longer period and across multiple university programs including data from Idaho State University that operates an ICAP or a mICAP each summer with GSCs for 8–10 stroke survivors. A natural extension of the student perception of clinical growth as a result of ICAP/mICAP participation is to capture the perspectives of student knowledge, skills, and competencies with adult neurological populations post-ICAP from clinical preceptors for the GSCs. In addition, comparing the student experience between face-to-face and telehealth-delivered ICAPs/mICAPs offers another valuable perspective as telehealth options can promote program access for stroke survivors. Finally, multiyear data analyses will directly inform plans for both university programs' 2023 ICAPs achieving a Level 3 Collaboration (Petkovic et al., 2020) classification for students as stakeholders in clinical research.

REFERENCES

Adams, J., & Neville, S. (2020). Program evaluation for health professionals: What it is, what it isn't and how to do it. *International Journal of Qualitative Methods*, 19, 160940692096434. https://doi.org/10.1177/1609406920964345

Auclair-Ouellet, N., Tittley, L., & Root, K. (2021). Effect of an intensive comprehensive aphasia program on language and communication in chronic aphasia. *Aphasiology*, 33(11), 1312–1332. https://doi.org/10.1080/02687038.2021.1959016

Babbitt, E. M., Worrall, L. E., & Cherney, L. R. (2013). Clinician perspectives of an intensive comprehensive aphasia program. *Topics in Stroke Rehabilitation*, 20(5), 398–408. https://doi.org/10.1310/tsr2005-398

Babbitt, E., Worrall, L., & Cherney, L. R. (2015). Structure, processes, and retrospective outcomes from an intensive comprehensive aphasia program. *American Journal of Speech-Language Pathology*, 24(4), S854–S863. https://doi.org/10.1044/2015_AJSLP-14-0164

Babbitt, E. M., Worrall, L., & Cherney, L. R. (2021). "It's like a lifeboat": Stakeholder perspectives of an intensive comprehensive aphasia program (ICAP). *Aphasiology*, 36(3), 268–290. https://doi.org/10.1080/02687038.2021.1873905

Baliki, M. N., Babbitt, E. M., & Cherney, L. R. (2018). Brain network topology influences response to intensive comprehensive aphasia treatment. *Neurorehabilitation*, 43(1), 63–76. https://doi.org/10.3233/NRE-182428

Boyer, N., Jordan, N., & Cherney, L. R. (2020). Implementation cost analysis of an intensive comprehensive aphasia program. *Archives of Physical Medicine and Rehabilitation*, 103(7S), S215–S221. https://doi.org/10.1016/j.apmr.2020.09.398

Chapey, R., Duchan, J. F., Elman, R. J., Garcia, L. J., Kagan, A., Lyon, J. G., & Simmons-Mackie, N. (2000). Life participation approach to aphasia: A statement of values for the future. *The ASHA Leader*, 5(3), 4-6. doi:10.1044/leader.FTR.05032000.4

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396. https://doi.org/10.2307/2136404

Cottrell, E., Whitlock, E., Kato, E., Uhl, S., Belinson, S., Chang, C., Hoomans, T., Meltzer, D., Noorani, H., Robinson, K., Schoelles, K., Motu'apuaka, M., Anderson, J., Paynter, R., & Guise, J. M. (2014). Defining the benefits of stakeholder engagement in systematic reviews. *Agency for Healthcare Research and Quality (US)*. Report No.: 14-EHC006-EF. https://www.ncbi.nlm.nih.gov/books/NBK196176/

Creswell, J.W., & Poth, C.N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed). Sage Publications.

Descript (46.3.1). (2021). [Computer software]. San Fransisco, CA: Descript.

Dignam, J., Copland, D., McKinnon, E., Burfein, P., O'Brien, K., Farrell, A., & Rodriguez, A. (2015). Intensive versus distributed aphasia therapy: A non-randomized, parallel-group, dosage-controlled study. *Stroke*, 46(8), 2206–2211. https://doi.org/10.1161/STROKEAHA.115.009522

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Griffin-Musick, J., Off, C. A., Milman, L., Kincheloe, H., & Kozlowski, A. (2020). The impact of a university-based intensive comprehensive aphasia program (ICAP) on psychosocial well-being in stroke survivors with aphasia. *Aphasiology*, 35(10), 1363–1389. https://doi.org/10.1080/02687038.2020.1814949

Griffin-Musick, J. R., Jakober, D., Sallay, A., Milman, L., & Off, C. A. (2021). Cognitive-linguistic outcomes from an intensive comprehensive aphasia program implemented by graduate student clinicians. *Aphasiology*, 36(9), 1015–1029. https://doi.org/10.1080/02687038.2021.1937920

Kincheloe, H., Off, C., Murphy, M., Griffin-Musick, J., Murray, K., & Jakober, D. (2022). "We all have coping and communication problems". Experiences of stroke survivors living with aphasia and graduate student clinicians who participated in a telehealth interprofessional psychoeducation and wellness group. *Aphasiology*, ahead of print. https://doi.org/10.1080/02687038.2021.2020716

Kiran, S., & Thompson, C. K. (2019). Neuroplasticity of language networks in aphasia: Advances, updates, and future challenges. *Frontiers in Neurology, 10*, 295. doi: 10.3389/fneur.2019.00295

Kleim, J. A., & Jones, T. A. (2008). Principles of experience-dependent neural plasticity: Implications for rehabilitation after brain damage. *Journal of Speech, Language, and Hearing Research*, 51(1), S225-S239. doi: 10.1044/1092-4388(2008/018)

Kroenke, K., Strine, T. W., Spitzer, R. L., Williams, J. B., Berry, J. T., & Mokdad, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*, 114(1-3), 163–173. https://doi.org/10.1016/j.jad.2008.06.026

Leff, A. P., Nightingale, S., Gooding, B., Rutter, J., Craven, N., Peart, M., Dunstan, A., Sherman, A., Paget, A., Duncan, M., Davidson, J., Kumar, N., Farrington-Douglas, C., Julien, C., & Crinion, J. T. (2021). Clinical effectiveness of the Queen Square intensive comprehensive aphasia service for patients with poststroke aphasia. *Stroke*, 52(10), e594–e598. https://doi.org/10.1161/STROKEAHA.120.033837

Linnan, L. A., Steckler, A., Maman, S., Ellenson, M., French, E., Blanchard, L., Bowling, M., Yamanis, N., Succop, S., Davenport, A., & Moracco, B. (2010). Engaging key stakeholders to assess and improve the professional preparation of MPH health educators.

American Journal of Public Health, *100*(10), 1993–1999. https://doi.org/10.2105/ajph.2009.177709

McAllister, L., Wylie, K., Kenny, B., Penman, A., & Hill, A. (2022). Qualitative content analysis. In R. Lyons, L. McAllister, C. Carroll, D. Hersh, & J. Skeat (Eds.), *Diving deep into qualitative analysis in communication disorders research* (pp. 101–127). J&R Press Ltd.

Mc Menamin, R., Isaksen, J., Manning, M., & Tierney, E. (2022). Distinctions and blurred boundaries between qualitative approaches and public and patient involvement (PPI) in research. *International Journal of Speech-Language Pathology*, *24*(5):515–526. https://doi.org/10.1080/17549507.2022.2075465

Mendez, F., & Hildebrand, M. W. (2020). OT student experiences in an interprofessional Intensive, Comprehensive Aphasia Program (ICAP). *The American Journal of Occupational Therapy*, *74*(4 Suppl. 1), 7411505176p1. https://doi.org/10.5014/ajot.2020.74S1-PO6027

Mohr, B., Stahl, B., Berthier, M. L., & Pulvermüller, F. (2017). Intensive communicative therapy reduces symptoms of depression in chronic nonfluent aphasia. *Neurorehabilitation and Neural Repair*, *31*(12), 1053–1062. https://doi.org/10.1177/1545968317744275

Monnelly, K., Marshall, J., & Cruice, M. (2021). Intensive Comprehensive Aphasia Programmes: A systematic scoping review and analysis using the TIDieR checklist for reporting interventions. *Disability and Rehabilitation*, *44*(21), 6471–6496. https://doi.org/10.1080/09638288.2021.1964626

Nasrabadi, A. N., Mohammadi, N., Rooddehghan, Z., Shabani, E. A., Bakhshi, F., & Ghorbani, A. (2021). The stakeholders' perceptions of the requirements of implementing innovative educational approaches in nursing: A qualitative content analysis study. *BMC Nursing*, *20*(1), 131. https://doi.org/10.1186/s12912-021-00647-7

Nicholas, M., Pittmann, R., Pennington, S., Tabor Connor, L., Ambrosi, D., Brady Wagner, L., Hildebrand, M., & Savastano, M. (2022). Outcomes of an interprofessional intensive comprehensive aphasia program's first five years. *Topics in Stroke Rehabilitation*, *29*(8):588–604. https://doi.org/10.1080/10749357.2021.1970452

Nyoni, C. N., Dyk, L. H. V., & Botma, Y. (2021). Clinical placement models for undergraduate health professions students: A scoping review. *BMC Medical Education*, *21*(1), 598. https://doi.org/10.1186/s12909-021-03023-w

Off, C. A., Griffin, J. R., Murray, K. W., & Milman, L. (2019). Interprofessional caregiver education, training, and wellness in the context of a cohort model for aphasia rehabilitation. *Topics in Language Disorders*, *39*(1), 5–28. https://doi.org/10.1097/TLD.0000000000000171

Overby, M., & Baft-Neff, A. (2017). Perceptions of telepractice pedagogy in speech-language pathology: A quantitative analysis. *Journal of Telemedicine and Telecare*, *23*(5), 550–557. https://doi.org/10.1177/1357633X16655939

Persad, C., Wozniak, L., & Kostopoulos, E. (2013). Retrospective analysis of outcomes from two intensive comprehensive aphasia programs. *Topics in Stroke Rehabilitation*, *20*(5), 388–397. https://doi.org/10.1310/tsr2005-388

Petkovic, J., Riddle, A., Akl, E. A., Khabsa, J., Lytvyn, L., Atwere, P., Campbell, P., Chalkidou, K., Chang, S. M., Crowe, S., Dans, L., Jardali, F. E., Ghersi, D., Graham, I. D., Grant, S., Greer-Smith, R., Guise, J. M., Hazlewood, G., Jull, J., … Tugwell, P. (2020). Protocol for the development of guidance for stakeholder engagement in health and healthcare guideline development and implementation. *Systematic Reviews*, *9*(1), 1-11. https://doi.org/10.1186/s13643-020-1272-5

Ray, K. N., & Miller, E. (2017). Strengthening stakeholder-engaged research and research on stakeholder engagement. *Journal of Comparative Effectiveness Research*, *6*(4), 375–389. https://doi.org/10.2217/cer-2016-0096

Raymer, A. M., Beeson, P., Holland, A., Kendall, D., Maher, L. M., Martin, N., Murray, L., Rose, M., Thompson, C. K., Turkstra, L., Altmann, L., Boyle, M., Conway, T., Hula, W., Kearns, K., Rapp, B., Simmons-Mackie, N., & Gonzalez Rothi, L. J. (2008). Translational research in aphasia: From neuroscience to neurorehabilitation. *Journal of Speech, Language, and Hearing Research: JSLHR*, *51*(1), S259–S275. https://doi.org/10.1044/1092-4388(2008/020)

Rose, M. L., Cherney, L. R., & Worrall, L. E. (2013). Intensive comprehensive aphasia programs: An international survey of practice. *Topics in Stroke Rehabilitation*, *20*(5), 379–387. https://doi.org/10.1310/tsr2005-379

Rose, M. L., Pierce, J. E., Scharp, V. L., Off, C. A., Babbitt, E. M., Griffin-Musick, J. R., & Cherney, L. R. (2021). Developments in the application of intensive comprehensive aphasia programs: An international survey of practice. *Disability and Rehabilitation*, *44*(20), 5863–5877. Advance online publication. https://doi.org/10.1080/09638288.2021.1948621

Trebilcock, M., Shrubsole, K., Worrall, L., & Ryan, B. (2022). Development of an online implementation intervention for aphasia clinicians to increase the intensity and comprehensiveness of their service. *Disability and rehabilitation*, *44*(17), 4629–4638. Advance online publication. https://doi.org/10.1080/09638288.2021.1910867

Trebilcock, M., Worrall, L., Ryan, B., Shrubsole, K., Jagoe, C., Simmons-Mackie, N., Bright, F., Cruice, M., Pritchard, M., & Le Dorze, G. (2019). Increasing the intensity and comprehensiveness of aphasia services: Identification of key factors influencing implementation across six countries. *Aphasiology*, *33*(7), 865–887. https://doi.org/10.1080/02687038.2019.1602860

World Health Organization (WHO). (2001). *International classification of functioning, disability, and health (ICF)*. Geneva, Switzerland: World Health Organization. https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health