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INDIRECTLY AND DIRECTLY INVOLVED STUDENTS' PERSPECTIVES ON
MULTI-MODAL COMMUNICATION TREATMENT IN PERSONS WITH
APHASIA

By
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A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of
the requirements of the Sally McDonnell Barksdale Honors College.

Oxford
November 2022

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ACKNOWLEDGEMENTS

I would like to first thank Dr. Hyejin Park for her diligent guidance through this process. She has been patient, kind, and of great help throughout my first research experience. I have learned so much from her, and she has provided me with many tools for success. It has been an honor working closely with her.

Thank you to all the participants and volunteer readers who have helped this study come to completion.

I would also like to thank my family for the continuous support throughout my academic journey. I love you all.

Thank you, Lord for granting me my mind and capabilities to pursue my academic passions.

Lastly, I would like to thank the Honors College for providing funding for our recording devices and compensations for our participants. The work could not have been completed otherwise.

ABSTRACT

EMILY LEWIS: Indirectly and Directly Involved Students' Perspectives on Multi-modal
Communication Treatment in Persons with Aphasia

(Under the Direction of Dr. Hyejin Park)

Our study investigated the perspectives of students who were either directly or indirectly involved in the Multi-modal communication treatment (MCT) sessions for persons with aphasia. Two undergraduate and two graduate students were recruited from the University of Mississippi who participated in the MCT sessions. We collected their perspectives through semi-structured interviews and used thematic qualitative analysis to analyze our data. We reported themes from the indirectly involved students and the directly involved students and compared how the themes were similar and different between the indirectly and directly involved students. We discussed that both direct and indirect experience for clinical therapy can be adequate and beneficial for students' academic and clinical education for understanding clinical skills, gaining familiarity with aphasia, and regulating emotion toward persons with aphasia. Both methods of therapy involvement are valuable educational tools that should be strategically used within the Communication Sciences and Disorders curriculum.

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Introduction

Overview and the Scope of Communication Sciences and Disorders

The major of Communication Sciences and Disorders (CSD) studies varied applications of communication, swallowing, motor, and cognitive therapy. According to the American Speech-Language and Hearing Association (ASHA) description of the CSD major for students, the nine *official* areas within the CSD major and study include articulation, fluency, voice and resonance, language, cognition, hearing, swallowing, social communication, and *communication modalities*. Through the CSD major, students are prepared to become speech-language pathologists (SLP). SLPs are professionals who engage in treatment of any of the nine areas within one's life. Therefore, appropriate student preparation and clinical exposure within CSD undergraduate and graduate programs is essential to develop the natural abilities, skills, and familiarity needed to become a qualified SLP. In an undergraduate program, students learn basic and introductory knowledge such as, anatomy and physiology of the speech and hearing mechanisms, human communication development, and speech and hearing science (*University of Wisconsin-Stevens Point, 2022*). The graduate program of the CSD major intends to help students meet the standards of ASHA and prepares them to provide a strong foundation of the professional skills in exercising one's SLP duties, and programs seek to engage students in critical thinking by integrating the evidence-based techniques

into clinical practice (*Speech-Language Pathology and Audiology: Missions*, 2021) in various ways.

Aphasia and Student Education for Aphasia

Aphasia is one of the areas that CSD students must be prepared to treat. Aphasia is acquired, has a neurological cause, and affects expressive and receptive language across modalities (Hallowell, 2022). Aphasia patients also often deal with changes in their daily modes of communication, and the impact and consequences of having aphasia for the individuals, themselves, and their families show the importance of the effective management and rehabilitation of language difficulties caused by aphasia (Brady et al. 2016). People with aphasia (PWA) also may not communicate their symptoms, medical history, or health concerns correctly or with clarity (Burns et al. 2001). In a study examining CSD student interaction with older adults who had cognitive disorders, based on qualitative results, Wafaa et al. (2011) documented the difficulties of communicating with older populations, such as, adult clients misunderstanding instructions, clinician concern with client's declining health, and overall discomfort or nervousness talking to older adults for the first time. Therefore, SLPs need to be familiar and practice assisting those communicative needs along with their language therapy, and CSD students need to be well trained for these cognitive and communicative disabilities, as well as the social adaptations needed to communicate with the PWA in therapy. For example, communicating and building rapport (i.e., developing a relationship of trust or understanding between the aphasia client and clinician) with patients is a commonly used clinical skill when working with this population. Rapport building skills are considered hallmarks of aphasia therapy and Ferguson & Elliot (2001) found that experienced

student clinicians dedicated most of their tasks during therapy to fostering rapport with aphasia clients, and the inexperienced students did not reveal this skill. Ferguson & Elliot (2001) discussed that CSD students are often just instructed how to develop a highly structured session plan, and because of this, inexperienced student clinicians failed to build rapport with aphasia clients, as their abilities to communicate outside of their structured session plan were limited. Within CSD programs, the limitation of student exposure to the aphasia population can impact the learning of communicative skills and strategies students need when interacting with PWA (Cubirka et al., 2015). In such cases, CSD programs use various ways to provide adequate education to students.

Student Training and Education: Indirect and Direct Involvement in Therapy

CSD curriculums have implemented both indirect and direct forms of student involvement to therapy to introduce the clinical skills needed to interact with PWA. ASHA defines direct therapy involvement as being services where the student clinician is in direct interaction with the patient in a clinic session, whereas indirect is any involvement of a student not directly interacting with the client but by instruction or assistantship of a third party that conducts the therapy process (e.g., simulation therapy exposure, shadowing a clinic session, taking data, etc.).

The indirect therapy experience for SLP students is a frequently used method, especially in the undergraduate CSD programs, when students are not well trained to directly interact with clients. Penman et al. (2021) studied undergraduate student comfort and anxiety levels in communicating with a person who stutters (PWS), and following their simulated training model, confidence levels for being able to communicate with clients who stutter tripled and initial anxiety levels significantly reduced. Knowledge in

three areas (students' understanding of key components involved in the treatment of stuttering, specific treatment techniques for stuttering, and overall knowledge of stuttering) also increased following the simulation exposure (Penman et al., 2021). Similarly, Howells et al. (2019) found that after undergoing their simulation experience of therapy sessions, students reported overall positive impact on the development of their communication, assessment, and management skills as a clinician. Regarding aphasia, Moineau et al. (2018) provided manikin simulated aphasia therapy training of clinical procedures for graduate students who had no prior direct therapy involvement with PWA, and following the training, students reported overall 'very good' on their 'skill performance' in specific areas. These areas/measures included: making clients feel comfortable, collecting past medical history, communication with PWA, setting goals, explaining to clients about procedures/purpose, clear/concise reporting, interacting professionally, prompting client for questions, etc. (Moineau et al., 2018). These simulation methods allowed for students to feel directly involved in real encounters with clients, which facilitated the use of clinical skills for adaptation and completing simulated therapy goals. This allowed students to practice developing clinical competency and be exposed to what the actual clinical setting would be like. Harmon et al. (2016) exercised the use of audio recorded aphasia patients and simulated fluency patients for students, and following students' exposure to the audio, listener perceptions of PWA improved significantly and students reported increased confidence levels in being able to communicate with PWA. These studies serve as support for the use of indirect therapy exposure as a tool for training and educating CSD students in the ways of clinical skills of communication, familiarity, and confidence with clients.

Direct therapy involvement can be used for students who are in an advanced level of their training and is a required curriculum for the CSD graduate students. Student's experiences in the clinical setting are dire for student progression in developing clinical competency before they graduate (Moineau et al., 2018). Students who enter in their clinical placement with a lack of interpreted knowledge and with no experiences involving the communication with PWA can be faced with challenges in exercising appropriate communicative strategies (Cubirka et al., 2015). Cameron et al. (2018) supported that direct therapy training is valued to obtain those experiences. In their study, students reported lower confidence levels in directly dealing with aphasia therapy prior to their communication partner training (CPT) but gained confidence from direct therapy involvement and the hands-on experiences with PWA in the program. Direct therapy involvement is also critical to improve social interaction skills with clients. The social abilities of a clinician with his or her aphasia clients is necessary for SLPs in their field. Direct therapy involvement also facilitated strong emotions of sympathy for each client, and students reported that they recognized the individuality of the PWA through storytelling (Purves et al., 2013). Purves et al. (2013) found that the clinician was given greater control by discourse practices, such as the clinician's engagement and initiating through questioning the client or instructing. Wafaa et al. (2011) agrees with these findings, as their mixed study observed CSD student attitudes positively shift after direct exposure to older adults with cognitive dysfunction. Therefore, this direct therapy involvement is a highly valued and effective educational tool for the preparation of students to become successful SLPs, and direct encounters with PWA would aid in a student's clinical preparation and education.

Knowledge Gap and Current Study

Although previous studies provided significant insights and advantages of both direct and indirect involvement to therapy, mostly, this evidence was provided by short survey and rating scales rather than student's in-depth expression about their perspectives. Interview of student's perspectives can provide more in-depth insights than surveys or rating scales because a qualitative approach can gauge their emotions, opinions, and educational progress. Cubirka et al., (2015) suggested that as we investigate and learn about an aphasia therapy setting for students, we must continue to take account of student perspectives. In addition, none of the qualitative studies compared students' perspectives from the direct and indirect therapy experience and provided their own views of benefits or disadvantages of each type of experience in aphasia therapy. The comparison of the two types of experience is important because it aids in identifying appropriate, valuable, and influential teaching methods, (Brady et al., 2016) and following students' clinical exposure, it is noted that what the students believed as most valuable regarding education on aphasia and strokes could further be used as content for training modules.

Therefore, our study will interview students who were directly or indirectly involved in aphasia therapy for one semester to compare their perspectives on their roles through involvement, educational experience, and emotions during the process. All participants participated in one type of aphasia therapy called, "Multi-modal Communication Treatment (MCT)," and this was to control variabilities across different therapy sessions. MCT is a treatment to facilitate verbal and nonverbal communication skills to improve functional communication skills and communication success for PWA (Purdy & Vandyke, 2011). Following the collection of responses, we examined key points,

similarities, or differences between indirectly involved students (IIS) and the directly involved students (DIS).

Methods

Participants

This study was approved by the International Review Board (IRB) at the University of Mississippi. The participants were recruited from the MCT clinic team at the CSD speech clinic at the University of Mississippi. Two undergraduate and two graduate students who were involved in the MCT participated in interviews. See Table 1. for their demographic information.

Table 1. Participant Descriptions

	Participant 1	Participant 2	Participant 3	Participant 4
Sex	F	F	F	F
Age	22	20	22	23
Major	CSD	CSD	CSD	CSD
Classification	Undergraduate (Senior)	Undergraduate (Junior)	1 st Year Graduate	1 st Year Graduate
Involvement	Indirect	Indirect	Direct	Direct
Roles	Preparation for sessions, data collection during sessions, comparing data post-session with clinician, preparation of materials, clean up post-session. Observation and transcription of recorded therapy sessions, data collection		Leading therapy sessions, data collection, documentation of client progress, developing target words to train, training with protocol, administering standardized testing	

Roles and Clinic-related Activities for IIS

The IIS served several roles within and outside of the therapy sessions. Participant 1 helped prepare the session material, took data during the sessions, compared data with clinicians post-session, and helped cleanup post-session. Participant 2 transcribed and collected data on sessions that had been recorded that week, and this also was considered observation of clinical sessions.

Roles and Clinic-related Activities for DIS

In preparation prior to the session, DIS were reading research articles, setting up clinical goals and preparing materials for the session. During the session, students were leading the therapy sessions, administering individual and group therapy sessions, training clients with the created target words, eliciting words in different modalities, and cueing patients to complete a goal. Post session, the students recorded client's responses for data collection, documented SOAP notes, and cleaned up materials.

Interview Questions

Interview questions consisted of (1) demographics (2) involvement in the MCT with PWA (3) emotional impact (4) perspective on MCT and (5) the overall experience had. Following 7 questions regarding participant demographics, 16 open-ended questions were asked. 8 of these were Likert scale questions ranking 1-7, regarding student perspective on educational preparedness, MCT effectiveness, and the emotional impact of the experience, and this was followed by open ended questions to explain their ratings. See Appendix A. for the interview questions.

Procedure

Prior to each participant interview, we obtained consent from participants. The consent form was sent electronically, and the participants sent back their signed consent form to us prior to the interview. Each participant met with the researcher individually via Zoom and answered the interview questions verbally. At the beginning of the interview, the interviewer introduced the study to the participant and began with the demographic information questions. During the semi-structured interview, participants answered open-ended questions and the researcher followed with clarification if necessary. Each interview took less than an hour in duration, and all interviews were video-recorded for further analysis. Following the completion of the interview, participants were given a \$10 Amazon gift card as compensation.

Data Analysis

Thematic analysis is one qualitative approach that generates categories and themes directly from the responses, rather than prior to the study or creating themes based on an assumed conclusion (Ryan et al., 2019). We adopted the structure of this analysis from Ryan et al. (2019), which includes steps: (1) Familiarization with participant responses (2) Generating initial codes (3) Look for themes (4) Reviewing (5) Select themes (6) Produce final report.

First, participant responses were automatically transcribed by Zoom closed captioning function and manually reviewed and revised. The transcriptions were then entered into an excel spreadsheet in accordance with each question. After that, two researchers (thesis author and advisor) individually read each response and documented key concepts or ideas directly pulled from the transcribed text. They were blinded from

each other. We then collaborated our key concepts with an agreements category for each participant response. Following this procedure, a third person who was not familiar with the current study reviewed the key concepts and agreements to verify. Once agreements were revised and completed, the two researchers discuss together to categorize the individual coding until themes emerged in each group (IIS and DIS).

We note that the qualitative data regarding MCT effectiveness and the quantitative data were not reported as results in the current study. The MCT effectiveness data were excluded because it was beyond the scope of the study, and the Likert ratings were not reported due to a small sample size.

Four themes were formed based on the IIS responses: (1) *Contribution to Student Education on Aphasia, PWA, and Treatment Effects* (2) *Recognizing Personhood and Sympathy for Patients* (3) *Limited Hands-on Opportunity but More than In-class Education* and (4) *Participants Felt They Needed Preparation Before Involvement*. Five themes emerged from the DIS responses: (1) *Encountering Real PWA through Direct Involvement* (2) *Sympathy and Interpersonal Relationships with Patients* (3) *Advancing Clinical Competency* (4) *This Influenced my Career Outlook* and (5) *Participants Felt They Needed Preparation Before Involvement*.

Results

Themes from Indirectly Involved Students

Theme 1. Contribution to Student Education on Aphasia, PWA, and Treatment

Effects

IIS reported that this indirect experience has benefitted and aided in forming their understanding and perceptions about aphasia, as well as familiarizing them for their future dealings with PWA. Through the experience, participants discussed how this was their first time seeing the adult clients of speech-language pathology. These participants recounted observing patient progression and achieving their goals within therapy. Students developed a positive view of aphasia patients, and through exposure to adults, increased familiarity with adult aphasia therapy.

Participant 1: I thought [the experience] was very fulfilling and very beneficial to my education, and it was interesting to see just the adult side of speech pathology.

Participants expressed that the new exposure showed them about aphasia symptoms and how PWA behave. This, in turn aided in the overall familiarity with PWA and preparation for clinical encounters with PWA.

Participant 2: I think it's been really helpful because before now. . . I haven't had any exposure to aphasia patients or anything like that, so it really showed me

about, you know what people with aphasia act like and how their symptoms are. .
. it'll be helpful when I start my career, because I will know what to expect.

IIS believed that the experience was overall beneficial to their education and future experience in working with adults, as well as understanding aphasia symptoms and behaviors. Through observing interactions between PWA and clinicians, participants reported an increase in their comfort and ability to communicate with PWA in the future. The participants also reported understanding of various modalities for communication, and this allowed for students to navigate their future career.

Participant 1: I've never got to experience working with adults before working with this, really, and it was cool to see how, like even just using different modes of communication can help the client progress from the beginning sessions, you see how much progression they made throughout the entirety. . . It just helped me more pick what I wanted to do with my career.

Experiencing PWA progression was a positive experience according to the IIS, and this contributed to the IIS's familiarization and increased comfort levels surrounding aphasia, aphasia therapy, and CSD aphasia education.

Theme 2. Recognizing Personhood and Sympathy for Patients

Through experiencing therapy with PWA, participants expressed their sadness and sympathy toward those who have aphasia, as they viewed the symptoms of aphasia in action through the patients. They reported observing patient difficulty in communicating with the clinician. Students also reported that they were able to learn about personal stories of the clients and reported watching the PWA progress in their treatment.

Participant 2: Um. . . [this experience] has definitely made me. . .um. . . a little bit, I mean, sad for the patients, because, you know, I know it is extremely difficult for them to communicate on a daily basis with simple tasks like simple things, so it's really made me a little bit sad, but it's also really great to see how much better [the patient] has gotten as well.

Participant 1: Working with one of the patients, she always talked about a show that she watched and I wanted to like. . . go watch it so I could communicate with her a little bit about it. But I never found time in my schedule. But I think that will always be something that is just on the back of my mind, like, maybe I'll watch the show one day so I can understand more of what she loves about it and why she wanted to talk about it every session.

Participant 1: Two of [the patients] really liked it, the other [patient] wasn't the biggest fan of it, but he still participated-- some sessions more than others.

Theme 3. Limited Hands-on Opportunity but More than In-class Education

Though participants reported gained exposure, there were thoughts toward their indirect involvement that can be explored. An IIS felt that a hands-on experience would have been better for her PWA education compared to her data collection and preparation of the therapy sessions, and she expressed limited opportunity to interact with patients, even as she observed within the therapy room. Students understood the needs of their roles in sessions, but wished for direct involvement rather than being behind the scenes.

Participant 1: I wasn't in a lot of the sessions. I was doing more behind the scenes work, and I think a little bit more hands-on would have been a little bit better. . .sometimes I felt needed, sometimes I didn't. . .

However, when comparing this experience to the classroom education, IIS acknowledged that this experience felt more involved and familiarized them to the therapy process, coding data, and data collection. The students also acknowledged feeling more engaged and felt they participated more by being in the sessions and preparing the material rather than an in-classroom lecture.

Participant 2: [In class] you don't get to see the firsthand experiences a lot of the time, and for clinical observation and whatnot-- that is just watching you know and observing, but I feel like this allowed me to be involved in it, I had a part in it, you know. I had a part in you know, decoding what she would say and figuring it out, so that made me feel more involved, and I feel like it allowed me be more engaged in the treatments and stuff because otherwise, I probably wouldn't have been as involved.

Theme 4. Participants Felt They Needed More Preparation Before Involvement

Participants expressed that they could have been more prepared prior to the therapy involvement. They reported the necessity for training prior to the data collection and any involvement they had in the therapy process.

Participant 1: I would have probably wanted a little bit more training on how to take the data. Only because the cueing hierarchy was a little bit confusing and knowing what was officially a cue and what wasn't was hard.

One student expressed that she lacked a decent education on aphasia prior to experiencing the sessions and transcribing the sessions. She expressed the need for more background on aphasia (symptoms, behaviors, aphasia itself, etc.) in order to get a quicker start on decoding the sessions.

Participant 2: Um. . .I think probably more. . .um. . . more education about aphasia itself, because I think I kind of went into it not knowing anything about it so. I kind of learned, as I went about, you know, what was going on and how they were acting and all. I feel like a little background about aphasia would have been helpful. It would have allowed us to, you know, jump in headfirst and get started, but it was kind of a slow start because we didn't know a lot about it, so I think that would have sped up the process for sure.

Themes from Directly Involved Students

Theme 1. Encountering Real PWA through Direct Involvement

DIS reported taking on multiple roles throughout their involvement. These in person roles involved constant communication with the PWA, and as the clinicians, the participants conducted the therapy session and exercised clinical skills, such as, building rapport, communicating effectively, instructing the client, cueing the client, following protocol, etc.

Participant 4: It was direct the entire time. Um. . . some benefits, I would say that I got to like build a relationship with the client and understand how like they work through their problems, and you know the different types of aphasia that they had. And we tried to make our lesson plans the kind of stuff that they would need in real life, like words, they would use really often with like a high spoken rate and so seeing them like retain those words and gain information and stuff was really beneficial. And then some disadvantages. . . can't really think of any specifically.

Participant 4 discussed that her current involvement was significantly beneficial toward her CSD education in comparison with her previous undergrad experiences—where she

watched videos of therapy sessions being held. Compared to their previous indirect experience, which was more of a backseat approach, a direct experience would allow the student to become the clinician and directly be involved in the administration of the therapy.

Participant 4: I was directly involved and with observation and shadowing, you're kind of just taking more of a backseat approach, So I enjoyed, I guess, being hands-on with the ladies and stuff.

Participant 4: I think, so I think my education would have been a lot better if I would have been hands on. I think My whole entire cohort can relate to the fact that, well for me personally, I know I didn't decide to be a CSD major until my junior year, so I got one semester of in person classes and then my second semester junior year COVID hit and I had a clinical Observation set up to go to a facility in Oxford to do in person observations, and I never got to do that, so I mean watching it on master clinician was helpful, But at the same time . . . when I got my first client, that's really when the real learning hit. Um, I'm not sure. . . it was definitely beneficial to see good therapists do good therapy with their clients. But, I guess since that wasn't me doing it, I couldn't place myself in their shoes that makes sense

Theme 2. Sympathy and Interpersonal Relationships with Patients

DIS students reported experiencing emotions of sadness and empathy toward the PWA and their caregivers. Participants described that they developed emotional strength during therapy, as well as having to bear compassion toward the aphasia patients. They reported an empathetic response to the therapy process and the clients individually.

Participant 3: I think that definitely had, like, an impact on me um, I think, as a clinician, it has probably made me a little bit stronger, a little bit, um, stronger in the sense that, like emotionally stronger I guess— like being able to keep those emotions in and not show them. I'm a big crier, so I think being able to see stuff like that and let it impact me and let it, um, drive my compassion, but not let it affect me long term. . .

Participant 3: Um, probably yeah like positively impact me, I think it has given me more compassion, more empathy for others, um, I think it made me realize that even though we're there to help them and they're looking to us for help, they're not these little bitty things that we're trying to fix. . . I mean you can have, like, a friendship with them. . .

Rapport building with patients was also reported by the DIS. They described how patients would discuss personal stories, and they would learn about the patient as an individual in this way. Patients were reported to describe personal experiences in relation to themes or target words that clinicians presented to them that day in therapy.

Participant 4: I think they enjoyed the individual sessions, because me and [cohort] were really good about breaking it up and trying to make it as fun as possible, you know, having conversations about, like this past, this last set of words we did was mode of transportation, so one more towards his bike, and so the clients were telling us stories about whenever they rode their bikes and all that so.

These experiences, according to participants, allowed them to be personable with the client. Participants reported that the experience helped them communicate better with

patients and their caregivers, as well as build rapport through their role and build relationships with the clients themselves. Participants also reported that they began to understand the impact aphasia had on each participant's life.

Participant 4: It's interesting to see like how effected they are from the strokes, because you're actually seeing their mind at work when you're sitting there with them and how like. . . you see the process of them thinking and trying to remember and sometimes that's hard to watch because you just like want to reach out and help them so bad, but you realize like you've gotta stick to the protocol, you gotta do the therapy and then also, I would say it emotionally impacted me to see their resilience, like on of the [patients], she has weakness on the right side of her body, and she used to be right handed but now she writes with their left hand and she has such great legible handwriting. I didn't even realize that she wasn't left-handed until her husband told us, and that was amazing to me so just to see these different things in ways that they've overcome and reconceptualize the narrative of their stories from having that stroke has been awesome.

Participants were asked about their experience and its pertinence to their knowledge of aphasia and what they observed in this experience. Students reported that this experience solidified their desire to work with adults. They also discussed observing patient-resilience and it helped the participants reconceptualize the narrative about strokes, while also realizing the importance of familial support and encouragement.

Participant 4: I think having good familial support is important with this therapy. Because, like, for instance, one lady her husband comes and he's a communication partner, the other lady that comes, no one comes with her, and so I think if

someone came with her. . .they, if they're out at a restaurant, and she can't think of what she wants, you know, they can be like 'oh what's another way you can tell me?' And, I think having familial support is important because, like the one that the husbands come with. . . like he really challenges her, and like, if he doesn't understand her, he makes her work. You know, without trying to frustrate her, he let her know that she's still capable of doing things on her own and he supported her in that way. So, I can see it beneficial there with no one coming to the therapy.

Theme 3. Advancing Clinical Competency

DIS described an increase in development of clinical language skills and overall communication with PWA. Because of the experience, students reported learning communication skills with the PWA and how to understand their difficulties.

Participant 4: I guess it's taught me how to be gentler and understanding with patients and um. . . you know, I guess go to my clinical language.

Participants expressed that this helped develop other clinic-related skills, such as, data collection, evaluation processes, following treatment protocol, and administering standardized testing for patients. Participants also reported gaining experience in cueing and prompting patients to use various communication modalities.

Theme 4. This Influenced my Career Outlook

As well as familiarity with aphasia, participants reported that the experience expanded the scope of their future career. The students gained insights to working with adult clients and felt more comfortable with adult clients.

Participant 3: I think that it has been a lot of learning experience for me, I think that well, this has been my first, um, clinic rotation with adults, so just generally I think this has been a big learning experience, specifically with this research, and the multimodal and stuff. I think it has really shown me how important communication is and how, when you meet somebody that doesn't, that isn't able to communicate, I'm just thinking it has really given me a new insight into my future career, and how I will approach future patients.

Participants expressed that they learned to develop collaborative relationships with not only clinicians but also with the aphasia patients. One participant expressed that this experience introduced them to aphasia and PWA. The participant reported that she was scared to work with PWA at first, but after working with aphasia, this changed her attitude for the future.

Participant 3: Um, it has definitely given me more insight to how aphasia patients really are, I think I was kind of scared before just because I'd never been around adults in general. . . I was like under the impression that they weren't even going to be able to speak, that they were just gonna sit there and stare at me and it definitely opened my eyes that it's not how I thought it was I think um. It kind of gives me hope almost in a sense that with if I do work with adults, specifically aphasia patients in the future that I know that I could probably use this in a different way with them.

Theme 5. Participants Felt They Needed More Preparation Before Involvement

Lastly, students described having a desire to have observation sessions prior to the treatment. They reported that they felt underprepared although the participants agreed

that their prior education from aphasia lectures was helpful for the experience. Students advised that, prior to the aphasia therapy sessions, they wanted to be more trained on protocol and be familiar with the therapy procedures.

Participant 4: I do think more training would have been helpful, um, just because I feel like this summer, we were kind-- of it wasn't like we were thrown into it, it's just that we just didn't know exactly how to carry out the protocol.

Discussion

The purpose of our study was to observe and compare the perceptions from IIS and DIS on their involvement status and what they experienced during the MCT sessions. Based on their perceptions, we explored indirect and direct therapy exposure as educational tools for students within CSD major and curriculum. The themes emerged from IIS and DIS presented how the direct and indirect experiences improved their education and future career. We noticed that some themes were common between the two groups, indicating similar education effects from both direct and indirect experience. Also, a few unique themes were reported to highlight advantages and disadvantages of direct or indirect experience.

Common Themes between IIS and DIS

The first common theme from the two groups was regarding emotional reactions toward the clients – IIS theme *Recognizing Personhood and Sympathy for Patients* and DIS theme *Sympathy and Interpersonal Relationships with Patients* can be observed for similarities. Both the IIS and DIS expressed their strong sympathy for the patients during the treatment sessions. IIS and DIS discussed that they gained sympathy by hearing the client's stories and learning more about the client's life outside of the therapy room. Their observation of stroke symptoms and how the clients live with the stroke increased both groups' empathy, compassion, and thoughts toward PWA and stroke victims. It was expected for DIS developing this emotional growth because they were able to build a

relationship and a strong rapport with the clients. Also, with their activities and interactions, DIS could destigmatize stroke impact and understand client's resilience of stroke symptoms. On the other hand, it is interesting that the IIS felt the same as DIS even though IIS observed the clients indirectly outside clinic (through observation room or recorded videos). IIS reported that this was their first exposure to PWA behaviors and symptoms. Therefore, it is possible that IIS's new exposure to PWA and to the clinical processes that surround PWA therapy was influential to the inexperienced students and their view of aphasia. Developing sympathy and the relationship with clients is a very important moral of an SLP, and it was previously assumed that this emotional growth can likely be built on direct interactions with clients. However, our study suggested that the indirect experience can also be an adequate education method to develop the emotional aspects of the aphasia treatment processes. Purves et al. (2013) also reported that students, following continuous exposure to communication with PWA, shifted their focus from the negative impact of stroke to individuals who live with the stroke and aphasia symptoms. The person-centered perspectives improved students' awareness of aphasia and attitudes.

The second common theme indicated their direct and indirect experience was beneficial for their education to learn about aphasia and advance clinical competency (IIS emerged theme, *Contribution to Student Education on Aphasia, PWA, and Treatment Effects* and DIS emerged theme, *Advancing Clinical Competency*). DIS described how they have learned to approach PWA behaviors, such as being gentle, not expressing frustration with the client, and understanding what clinical language should be used. For CSD education on PWA, aphasia, clinical skills in this area, both groups had gained

experience via the indirect or direct roles, as the DIS pointed out, that these pre/post-session roles helped them further their understanding of clinical research, protocol, and etiquette. Similarly, IIS also mentioned that they were able to perceive clinical skills through observing the graduate student clinicians communicate with the clients. In addition, IIS were able to work on data collection and discuss the therapy sessions with the student-clinicians post-session. It can be assumed that some clinical skills (data collecting, note taking, preparing therapy materials, etc.) can be adequately learned and applied through the indirect roles. Penman et al., (2020) observed that there was a significant relationship between increased knowledge in fluency disorders for students following an indirectly involved (simulation) therapy experience.

The final theme commonly derived from IIS and DIS perspectives was *Students Felt They Needed Preparation Before Involvement*. This theme indicated that both groups of students did not feel comfortable and felt underprepared participating in their roles. The IIS expressed lack of background knowledge of aphasia. The DIS, however, explained that their feelings were unfamiliarity with protocol, and they wished for opportunities of shadowing or practice before they began the experience. Before both IIS and DIS participated in the treatment project, they read research articles related to the project and a meeting to discuss the protocol and preparation. Therefore, they had opportunities to learn the background knowledge. Considering limited clinical training experience in IIS and even DIS, who were the 1st year graduate students and no previous experience working with adults, this theme reflected their nervousness and lack of confidence in the beginning of the experience. This seems common for students. Wafaa et al. (2011) reports that the overwhelming perspective students feel intense nervousness

prior to exposure to adult clients, as they first believe it to be extremely challenging. Our DIS did recall having feelings of fear prior to encountering PWA, as they had not been exposed to adult clients before, but they reported that those feelings had dissolved.

Unique Themes Emerged in IIS and DIS

Despite several similarities, IIS students reported limited hands-on opportunities (*Limited Hands-on Opportunity but More than In-class Education*). Compared to the DIS roles, this is expected because they did not directly interact with the clients and implement the treatment activities. IIS express that it would be more “fun,” if they had the opportunity to have hands-on experience. Also, they expressed that hands-on would benefit their education and better prepare them for their future engagements with PWA. The studies that pursued the indirect simulation training for students was because the educational benefit of actual direct involvement and the real clinical experience is necessary for developing clinical skills (Penman et al., 2021; Moineau et al., 2018). Though reporting an increase in understanding of PWA symptoms and therapy, IIS comments revealed that they agreed that a direct, hands-on experience would be more beneficial to their CSD education in preparation for the field. It cannot be disregarded that one IIS remarked a difficulty in her indirect role of observation via video and audio recording, as sometimes the technology would malfunction, thus data collection would be affected.

As opposed to this, DIS were satisfied with their direct involvement with the clients. Through their direct involvement, the DIS reported that they developed rapport and relationships with the clients, dealt with therapy obstacles, listened to client stories, and incorporated the individual preferences into their sessions. These perspectives

emerged the themes *Encountering Real PWA Through Direct Involvement* and *This Influenced My Career Outlook*. Previous studies showed that students believe caring for their aphasia patients begins once a relationship is formed between the clinician and PWA, and relationships with patients are core to the caregiving and therapy progression in PWA (Sundin et al., 2001; Bright et al., 2020). This direct experience with PWA influenced DIS's future career paths as SLPs to work with PWA at a clinical setting. Further, one DIS described previously only intending to work with children; however, following this exposure, she wants to explore the adult side of speech-language pathology and expressed increased comfort in communication with adult clients. Exposure to various populations and scopes is important for CSD education to broaden students' views to navigate their future careers.

On the other hand, as a minor note from one of the DIS students who commented that some indirectly involved activity (e.g., observation for data collecting) can be also advantageous because they can observe details of the client's behaviors and language outputs, which allows accurate data collection and observing the client's progress.

Limitations and Future Directions

There were limitations of a small number of participants. We only recruited participants who participated in a particular treatment to control variabilities of other aphasia treatment which could impact participants' perspectives and experiences. This was to minimize external variables not considered, and this intentionally limited the applicability of our results. A larger sample size would allow for a comprehensive view of aspects of IIS and DIS and advantages and disadvantages of each type of indirect and direct role (benefits of transcribing, comparing data, leading therapy sessions, etc.). Also,

a larger sample size would allow for a mixed design with quantitative measure to evaluate how IIS/DIS attitudes and knowledge have improved from their experiences.

Educational Implication and Conclusion

Our study suggested that both direct and indirect experience for clinical therapy can be adequate and beneficial for student's academical and clinical education in varying ways of understanding clinical skills, gaining familiarity, and regulating emotion toward PWA. It can be debated which method is more valuable or practical for learning clinical skills; however, one's progression through the CSD undergraduate or graduate degree must also be taken into consideration. Both IIS and DIS discussed that, even so, through their experiences, they were enlightened on aphasia, PWA, and therapy sessions with PWA. There are certain skills, such as rapport building, that can be obtained in either method (direct or indirect). Therefore, CSD educators should define the goals and determine a better method to train students based on their level of skills and familiarity in clinic.

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Appendix A. Interview Questions

Introduction:

Interviewer: This is the interview portion of the study. These questions will investigate undergraduate and graduate student perspectives of Multi-modal communication treatment in persons with aphasia (PWA). By participating, you are about to be asked a set of interview questions concerning the demographics and clinical, educational, and emotional perspectives of this treatment process. During this interview, all content (video and audio) will be recorded and saved in the participant file. Participant responses will then be transcribed.

Demographic Information:

Interviewer: We will begin with demographic questions that help us identify our participants.

1. Name:

2. Age:

3. Sex:

Male

Female

Other: _____

Prefer not to answer

4. Ethnicity:

American Indian or Alaska Native

Asian

Black or African American

Native Hawaiian or Other Pacific Islander.

White

Other: _____

Prefer not to answer

5. College Major: _____

6. Undergraduate / Graduate Student

7. Year/Classification: _____

Descriptions of Student's Involvement in Therapy:

Interviewer: We will now ask you questions about your clinical involvement and roles.

1. Describe your role in the MCT therapy sessions:

a. What was your role in preparation for the clinical sessions (i.e., materials gathered, setting up the room, etc.)?

b. What was your role during delivering the clinical sessions?

c. What was your role post-session?

Interviewer: For this study, our definition of direct and indirect therapy (inspired by ASHA) defines direct therapy as being services where the student-clinician is in direct contact with the patient, whereas indirect is any involvement of a student-clinician NOT directly with the client but by instruction or assistantship of a third party that conducts the

therapy process. Furthermore, indirect therapy involvement will possess one or more of the following: not administering the therapy to the PWAs, not present in the therapy room, collection of materials via assistantship to the clinician without conducting therapy, or tele-observation of therapy.

2. Was your involvement in the therapy direct or indirect or both?

- a. If your therapy involvement was direct, what were benefits or disadvantages of this involvement?
- b. If your therapy involvement was indirect, what were benefits or disadvantages of this involvement?

Educational Impact for Students:

Interviewer: We are going to begin asking you about how this experience has impacted your education.

3. On a scale from 1-7, 1 being “no impact at all” and 7 being “extremely impactful,” how would you rate the impact of this experience on your education for the Communication and Science Disorders (CSD) major?

1-----2-----3-----4-----5-----6-----7

Explain your answer:

4. Using the 1-7 scale, with 1 meaning “it did not prepare me at all” and 7 meaning “I feel fully prepared,” how do you feel this therapy involvement has prepared you for your future career?

1-----2-----3-----4-----5-----6-----7

Explain your answer:

5. How would you compare this experience (in the MCT therapy with PWA) to:
 - a. in-classroom education?
 - b. other clinical education, such as observation or shadowing?
6. Is there anything you would have changed about this educational experience? (E.g., more background about aphasia, more training before obtaining data, etc.)

Opinions about the MCT as a Student

Interviewer: We will now ask you questions regarding your opinion of MCT.

7. On a scale from 1-7, 1 being “not effective at all” and 7 being “extremely effective,” how effective do you think this treatment is to the patients?

1-----2-----3-----4-----5-----6-----7

Explain your answer:

8. Did you feel that there were positive or negative reactions from the patients in response to this treatment (episodes or comments from patients)?
9. How do you foresee this type of treatment playing a role in the future clinical therapy of PWA?
10. What aspects of MCT did you feel were most effective *and* least effective in working on communication skills in PWA (specific modalities)?
- 11. Describe, overall, how you perceived MCT procedures for people with aphasia.
- 12. How do you think MCT is different from other aphasia treatments?

-13. How has your experience with MCT impacted your overall knowledge or attitude toward aphasia treatment?

Student's Emotions and Feelings in Therapy

Interviewer: We will now ask you questions pertaining to your emotional experience during these clinical processes.

14. Rate each of these statements using a scale of 1-7, 1 being "completely disagree" and 7 being "completely agree."

a. "I experienced satisfaction in witnessing this therapy."

1-----2-----3-----4-----5-----6-----7

Explain your answer:

b. "I experienced discontent in my role in the clinical process."

1-----2-----3-----4-----5-----6-----7

Explain your answer:

c. "I felt that I played an important role in the delivering of this therapy."

1-----2-----3-----4-----5-----6-----7

Explain your answer:

d. "I felt helpful during the clinical sessions."

1-----2-----3-----4-----5-----6-----7

Explain your answer:

e. “This experience has helped me further enjoy the major I have chosen.”

1-----2-----3-----4-----5-----6-----7

Explain your answer:

15. (State that this is not another statement) Has this experience *emotionally* impacted your view on aphasia treatment? Explain your answer:

16. What were moments from this PWA therapy involvement that you feel impacted **you**, whether positive or negative?

Closing:

This concludes our interview. We thank you for participating in this study and helping us by answering these questions. You will now receive your \$10 Amazon gift card, and you will be informed of the study’s completion. Have a great rest of your day.