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HOW DIFFERENCES IN PERSONAL STYLE CAN IMPACT PARTICIPATION IN GROUP THERAPY SESSIONS ACROSS DELIVERY MODELS

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HOW DIFFERENCES IN PERSONAL STYLE CAN IMPACT PARTICIPATION IN GROUP
THERAPY SESSIONS ACROSS DELIVERY MODELS

Chelsea A. Libreros-Cortes, Kylie Trebour, Nicholas Zablocki

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Abstract

Aphasia is a multimodal communication disorder that arises secondary to acquired focal damage to the language processing centers of the brain, creating mild to severe communicative impairments (Brookshire & McNeil, 2015). Group therapy as a form of intervention for individuals with aphasia has been shown to improve social skills and increase language abilities (Ribeiro Lima et al., 2018). Typically, group therapy sessions were held in-person; however, due to recent social distancing mandates, there has been a rapid shift to teletherapy as the main service delivery model. Also, it has been observed that individuals may shift their typical performance level when given a different environment (Robertson & Callinan, 1998). This study examines how personality styles can impact participation and contribution levels during group therapy sessions across service delivery models. Participants completed a questionnaire that focused on their personality traits and how they may impact performance during therapy for stroke rehabilitation. Additionally, researchers analyzed in-person and teletherapy group sessions to measure levels of participation across delivery models. It was hypothesized that individuals who participated less frequently during in-person sessions would have an increase in participation/contribution to the session during teletherapy. Results indicated that participants who considered themselves introverted participated less frequently during in-person group sessions than during group sessions via teletherapy and participants who considered themselves extroverted presented with minimal change across service delivery models. The results from this study may provide clinical implications for clinicians to consider personality to facilitate equal participation from all group members throughout the session.

Keywords: aphasia, group therapy, teletherapy, personality styles, introvert, extrovert, participation, service delivery models

How Differences in Personal Style Can Impact Participation in Group Therapy Sessions Across Delivery Models

The efficacy of group therapy as a form of intervention for individuals with aphasia has been well-researched. Studies have found that the implementation of group therapy for individuals with aphasia has promoted significant improvement seen in increased social skills and language abilities (Ribeiro Lima et al., 2018). Due to COVID-19 and its associated social distancing mandates, there has been a rapid shift from in-person meetings to teletherapy as the service delivery model. Previous research has found that the achievements and outcomes of teletherapy are comparable to those of in-person services for individuals with aphasia (Hill et al., 2009). This rapid transition in service delivery has appeared to be a difficult one for long-time group members, with clinicians noticing a shift in their behavior. This study hopes to investigate how the personality traits of individuals with aphasia can impact group dynamics and determine how service delivery models play a role in their level of participation.

Group therapy for individuals with aphasia is a practice that has been accepted since the mid 1940s (Elman, 2007). The paradigm has shifted from the traditional medical model to the social model in order to create a positive change when remediation of the disorder is not present. Aphasia is a lifelong condition that can greatly affect one's communication skills and ability to interact with others within a social context, which can leave the individual feeling isolated and/or depressed. Group therapy can help facilitate connections between individuals with aphasia,

thereby building a community and support group. Elman (2007) states that “by helping to rebuild interpersonal connections and community, as well as establish new relationships, speech–language pathologists can help people affected by aphasia to live fuller and healthier lives” (p. 306).

As technology has advanced and opinions have changed, so has the service delivery models of intervention. Teletherapy has been gaining popularity within the field of Speech–Language Pathology since it is commonly seen that adults who require services also present with mobility deficits secondary to their primary diagnosis. Providing services through telehealth allows the individuals, specifically people with aphasia to continue receiving services and not feel burdened by their mobility and transport deficits. Additionally, telehealth is growing especially in rural areas where extensive travel may be required to reach a clinic, private practice, or hospital. Numerous studies have supported the use of teletherapy as an effective service delivery for group therapy. For example, Larson et al. (2020) found that supplemental interventions provided via teletherapy have a positive effect on the patient or client’s quality of life compared to their typical face-to-face care. No difference has been found between the gains made during in-person groups when compared to teletherapy groups (Dial et al., 2019). Not only does teletherapy offer similar outcomes when it comes to speech and language, but group teletherapy can improve outcomes for cognition as well. The computer-based teletherapy cognitive rehabilitation program provided similar functional outcomes as face-to-face speech–language therapy at a similar total cost (Schoenberg et al., 2008). Teletherapy offers a variety of benefits including effectiveness of achieving both language and cognitive gains throughout sessions, as well as convenience and comfort.

It is important to note how an individual's personality and participation levels impact the success of a telehealth session regardless if it is individual or group therapy. It has been observed that individuals may shift in their typical performance level when given a different environment. Personality characteristics are considered to be the root causes of behavior, remaining stable over time and consistent across situations (Robertson & Callinan, 1998). Therefore, specific personality types are considered to have predictive responses to various stimuli. When studying general group dynamics, researchers have found that the level of personality diversity within a working group impacts the social interaction process of communication, openness, and trust, but not productivity itself (Robertson & Callinan, 1998). However, if the group has a leader that promotes participation and focuses on the overall goals of the group which is to communicate effectively, diversity in personality is considered an asset that promotes increased productivity and job satisfaction (Robertson & Callinan, 1998).

Personality traits of the participants set the precedence for the group dynamic and its effectiveness. When it comes to aphasia group therapy, the overall goal is to promote a sense of community for the individuals in order to promote social interactions for the participants to practice their language skills and social communication. Research has shown that this form of intervention can be a very effective form of treatment across multiple delivery models. However, with the recent events of COVID-19, participation by the group members appear to be shifting. The research in this article hopes to uncover how prominently a specific personality trait can impact participation via a teletherapy model.

Group Therapy for Persons with Aphasia

The leading cause of aphasia is a result of acquired focal damage to the brain, otherwise known as cerebrovascular accident (CVA) or more commonly known as a stroke (National Aphasia Association, 2016). Additionally, CVA is the leading cause of long-term disability in the United States and is the third leading cause of death after heart disease and cancer (National Aphasia Association, 2016). Approximately one-third of CVAs result in aphasia (National Aphasia Association, 2016). When a person experiences a CVA and presents with communication deficits, a comprehensive evaluation is administered to determine the individual's strengths, weaknesses, personal goals, and priorities for treatment (Brookshire & McNeil, 2015). Depending on the severity level of the individual's aphasia, a Speech-Language Pathologist (SLP) may recommend a variety of treatment techniques/approaches that can be implemented over a recommended period of time (Brookshire & McNeil, 2015). Commonly, therapy focuses on restoring functional communication or using alternative methods for communication to promote social participation and maintain premorbid quality of life, as well as providing patient/family education. Promoting social participation and family involvement has become an increasingly important area of treatment since persons with aphasia (PWA) often report social isolation and lack of community integration as a result of their communication deficits (Lee et al., 2015). Subsequently, group therapy has become a foundational treatment for PWA. Additionally, since many PWA present with mobility deficits secondary to the CVA, use of telehealth has grown to accommodate for mobility and transportation issues.

Aphasia is a lifelong condition that can greatly affect one's communication skills and ability to interact with others within a social context. The service delivery paradigm has shifted

from the traditional medical model to the social model in order to create a positive change in daily life when the prognosis for remediation is fair. Elman (2007) states that “by helping to rebuild interpersonal connections and community, as well as establish new relationships, speech–language pathologists can help people affected by aphasia to live fuller and healthier lives” (p. 306). Group therapy for individuals with aphasia is a practice that has been accepted since the mid-1940s when it was first implemented to support World War II veterans with aphasia (Elman, 2007). It can help facilitate connections between individuals with aphasia, thereby building a community and support group. There are several conversational-based benefits for individuals participating in aphasia groups including promoting interactions among group members, participation within a naturalistic environment, and improved psychosocial functioning (Elman, 2007). Participating in an aphasia group will also encourage members to initiate and maintain conversations for increased durations, and if the setting is more natural, it is more likely that gained skills will generalize and transfer to the home and community environments (Elman, 2007). Given aphasia’s negative effects on an individual’s quality of life, aphasia group treatment can give these individuals an outlet for their thoughts, ideas and feelings, as well as a mode to create a more positive identity.

Additionally, Elman and Bernstein-Ellis (1999) investigated the efficacy of group aphasia therapy in PWA who received 5-hours of weekly therapy during a 4-month treatment trial. After the treatment period had concluded, individuals who received group therapy scored higher on objective measures of communicative and linguistic measures than those who received no therapy at all. They concluded that individuals who received group therapy had improved their communication and language abilities when compared to individuals who received no treatment

or services. Elman and Bernstein-Ellis (1999) stated that “aphasia treatment is most often focused on structured didactic therapist-client tasks in order to maximize linguistic recovery” (p. 411) which often includes “individualized stimulus-response tasks chosen from such language modalities as spoken expression, auditory comprehension, reading, and writing” (p. 411). However, group treatment models primarily attend to pragmatic competence skills, such as initiating and maintaining an interaction, to improve the individual’s social communication skills. Thus, by providing multiple communication partners, along with naturalized conversation, peer modeling, and peer support, group therapy facilitates further carryover and generalization of re-acquired skills.

As technology continues to rapidly change and expand so does the way in which we use it. Currently, online communication has become a part of everyday life. Due to the simple and convenient nature of virtual communication, telehealth has also gained new-found popularity within the healthcare setting in recent years. Teletherapy is defined as the remote delivery of rehabilitation services via information technology and telecommunication systems (Hill et al., 2020). Video conference communication has gained popularity within the Speech-Language Pathology community as a means of continuing speech services to patients and clients in need. According to the American Speech and Hearing Association (ASHA, n.d.), teletherapy/telepractice has been recognized as an efficient alternative to in-person speech services (ASHA, Teletherapy n.d.). The overall purpose behind the implementation of telehealth services is to provide a safe means of providing continued skilled speech and language services to individuals who require them while adhering to the social distance guidelines. The services provided via telepractice should match face-to-face services in quality of services ensure individuals continue

to make gains within their expressive and receptive language as they would have had the services continued in-person.

Literature Review

Numerous studies have found that achievement outcomes of individuals currently enrolled in teletherapy programs are equivalent to those in the traditional face-to-face therapy program (Schoenberg, et al., 2008). Schoenberg and colleagues (2008) provided therapy to 40 PWA with similar plans of care for treatment; the only differing factor was that one group would continue to receive traditional in-person services while the others would receive teletherapy. All participants received the same number of therapy sessions over the course of 24 weeks. By the end of their course of treatment, all of the individuals who participated in this study had achieved many of the goals established for them prior to the implementation of intervention services. Larson and colleagues also (2020) performed a review of service delivery outcomes and found that individuals who participated in teletherapy services demonstrated positive outcomes that were comparable to expected outcomes in face-to-face therapy services. It was found that the participants reported having increased quality of life following their enrollment in teletherapy services.

Further research investigated the effectiveness of teletherapy services when coupled with online language exercise programs throughout the course of treatment (Steele, 2014). The study was conducted over the course of 12 weeks during which 9 individuals with aphasia received both group and individual teletherapy services while completing an at-home exercise program consisting of speech and language online applications to determine the efficacy of teletherapy services in conjunction with at-home programs. The study hoped to take a deeper look into

whether teletherapy service delivery offers quality services as well as if this service delivery was feasible. The results of this study did show small improvements in the individuals' language abilities compared to their original scores before the implementation of the teletherapy services.

In a study conducted by Pitt et al. (2018) following the completion of each teletherapy session, the Speech Language Pathologists (SLPs), participated in an interview regarding their experience, and thoughts of the teletherapy intervention. The interviews were then analyzed using qualitative content analysis in order to identify key categories. The findings of this research was that the SLPs reported that they enjoyed providing group services online and found they were able to develop a range of strategies in order to successfully facilitate effective group sessions via teletherapy. The overall conclusions from this article was that although SLPs may require extra time in order to gain confidence using this new method, effective group therapy can still be provided via an online group session to individuals with aphasia.

Since it is commonly seen that individuals who require services from a SLP also present with mobility deficits secondary to their CVA, providing services through telehealth allows these individuals to continue receiving services and not feel burdened by their mobility and transport deficits. Additionally, telehealth is growing especially in rural areas where extensive travel may be required to reach a clinic, private practice, or hospital. Numerous studies have supported the use of teletherapy as an effective service delivery for group therapy. Supplemental interventions provided via teletherapy have a positive effect on the patient or client's quality of life compared to their typical face-to-face care (Larson, et al., 2020). Not only does teletherapy offer similar outcomes when it comes to speech and language, but group teletherapy can improve outcomes for cognition as well. The computer-based teletherapy cognitive rehabilitation program provided

similar functional outcomes as face-to-face speech-language therapy at a similar total cost (Schoenberg et al., 2008). Teletherapy offers a variety of benefits including effectiveness of achieving both language and cognitive gains throughout sessions, as well as convenience and comfort.

Personality Characteristics and Online Participation

While group therapy and telehealth are successful modes of treatment for PWA, there is a lack of evidence that explains how personality and service delivery models can impact an individual's participation during group therapy. We have defined personality as an individual's characteristic patterns of thought, emotion, and behavior, together with psychological mechanisms being the root causes of behavior usually remaining stable over life and situations (Harris, Brett, Johnson, & Deary, 2016). Groups are systems that create, organize, and sustain interaction between its members by setting relationships and adapting personalities to fit a particular social role (University of Denmark, 2018). Researchers have found that the level of personality diversity within a group can impact the social interaction process of communication, openness, and trust, but not the productivity of communication itself (Robertson & Callinan, 1998). However, if the group is well managed to communicate effectively, diversity in personality is considered an asset that helps to promote increased productivity and job satisfaction (Robertson & Callinan, 1998).

Similar to all other group settings, personality traits of the participants set the precedence for the group dynamic and its effectiveness. When it comes to aphasia group therapy, the overall goal is to promote a sense of community for the individuals in order to promote social interactions for the participants to practice their language skills and social communication.

Research has shown that this form of intervention can be a very effective form of treatment across multiple delivery models.

Hypotheses

As the novel COVID-19 virus has forced us to change our normal routines and activities of daily living, it has also forced us change the way we implement therapeutic services. Since the beginning of the COVID-19 pandemic, there has been a rapid shift from in-person meetings to teletherapy as the new most commonly used service delivery model across the country, not just in rural areas.

For PWA, the attendance of face-to-face group services contributed to their quality of life and social interaction, allowing them to work with people with similar disabilities, obstacles, and perspectives. This rapid transition in service delivery has appeared to be a difficult one for long-time group members, with clinicians noticing a shift in their behavior. As previously mentioned, particular personalities often adapt to a constant role when placed in a group setting. It has been observed in the transition from face-to-face services to teletherapy that these constant roles have shifted, making those who were less involved during face-to-face services, more involved during teletherapy services. This study hopes to investigate how the personality traits of individuals with aphasia can impact a group dynamic and determine how service delivery models play a role in their level of participation. It is hypothesized that individuals who consider themselves introverted will present with an increased amount of participation during teletherapy sessions in comparison to face-to-face sessions while individuals who consider themselves extroverted will present with decreased participation during teletherapy sessions in comparison to face-to-face sessions.

Methods

Participants

The participants in this study, described thoroughly in *Table 1*, included seven individuals who have been diagnosed with aphasia secondary to a cerebral vascular accident by a Speech Language Pathologist. Although individuals who experience various forms of acquired focal damage to the brain may also experience aphasia, only individuals who initially presented with a cerebral vascular accident were included in this study (See Table 1 for participant profiles). All participants are currently or have previously attended group aphasia therapy at the Kean University Center for Communication Disorders (KUCCD). In order to be included in this study, the participants were required to have participated in both face-to-face group therapy services and telehealth group therapy services in order for the researchers to be able to compare and contrast behaviors.

Table 1. (Participants)

Introvert				
	Gender	Age	Severity of Aphasia	Years Post Stroke
P1	Male	66	Moderate/Severe Expressive	14
P2	Female	62	Mild/Moderate Expressive	3
P3	Male	77	Moderate Expressive/Receptive	2
Extrovert				
P4	Male	66	Moderate Receptive/Expressive	7
P5	Female	53	Moderate Expressive	8
P6	Male	61	Mild Expressive/Receptive	17

P7	Male	65	Mild/Moderate Expressive/Receptive	11
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After receiving permission from the director of the KUCCD, participants were recruited during group teletherapy sessions that were held via Zoom. While the flyer was attached to the Zoom meeting as a document for the clients to view, the investigators introduced themselves and verbally provided general information regarding the questionnaire, and the overall purpose of the study, as well as the information included in the informed consent, debriefing, and release of records agreement documents. Specifically, the investigators discussed how each semester, all clients enrolled in the KUCCD consent to allowing Kean University to make video recordings of sessions to be used with due discretion for educational, research, and professional purposes only. The investigators also discussed that the informed consent form contains a statement that the researchers will access their client records and videos and have the clients sign a release of records form.

Videos are stored in either of two online, HIPAA compliant servers--one for in-person videos and a separate database for teletherapy videos. The KUCCD clinic granted the researchers temporary access to the specific client folders that allowed the investigators to view files for the duration of this study. These files could not be downloaded or modified. Once the study concluded, the clinic removed the investigators' access to client files.

If the potential participants wanted to address any additional questions or concerns, they were granted with the opportunity to do so prior to the investigators leaving the KUCCD's group therapy session. Within the Zoom application, members had the ability to send private messages

to others in the video conference room. In order to maintain confidentiality and privacy, the investigators allowed and provided verbal directions to the aphasia group therapy members to send a private message to the investigators with their full name and email address where all the information would be sent to. If the aphasia group therapy members required more time to decide if they would like to participate or have any additional questions, the recruitment flyer remained on the Zoom conference and a copy was provided to the head clinicians which contained the primary investigator's information if needed to be contacted.

Once the investigators of this study acquired a list of participants, each was referenced with a designated code/number that was used in order for the information to be de-identified before, during and after data collection. Subsequently, an email with a link to Qualtrics, which is a HIPAA compliant network that will preserve confidentiality and privacy to all participants enrolled, was sent to each potential participant individually (see appendix 1).

The link diverted them to Qualtrics which provided the participant informed consent forms (see appendix 3) with the option to "click" to consent. If the participant selected, "I consent" then Qualtrics would allow them to continue to the questionnaire portion of the study including twenty-eight questions (see appendix 2). If the client selected "I do not consent," then the browser would automatically exit them from the Qualtrics system. Once the participant completed the questionnaire, they continued to a debriefing form and were then allowed to exit the study. Additionally, one week after the initial questionnaire link was sent to the participants, investigators followed up to determine if they had questions or to schedule an individual Zoom meeting as needed. This allowed the participants to address and answer questions or concerns

without requiring them to contact the investigators independently. Specifically, the questionnaire asked the participants to describe their personality styles from before their stroke and after their stroke to determine if there was a change post-CVA. Additionally, the questionnaire required participants to judge their participation level and preferences across different service delivery models.

Once the participant had completed the forms and questionnaire, the investigators analyzed their responses along with their behaviors during previously recorded aphasia group therapy sessions. The investigators recorded and measured how many times each participant initiated conversation, responded to the clinicians, responded to peers, average utterance length in words, typical errors and overall participation percentage in face-to-face and teletherapy services. This allowed the investigators to determine the correlation in personal style and participation across service delivery models.

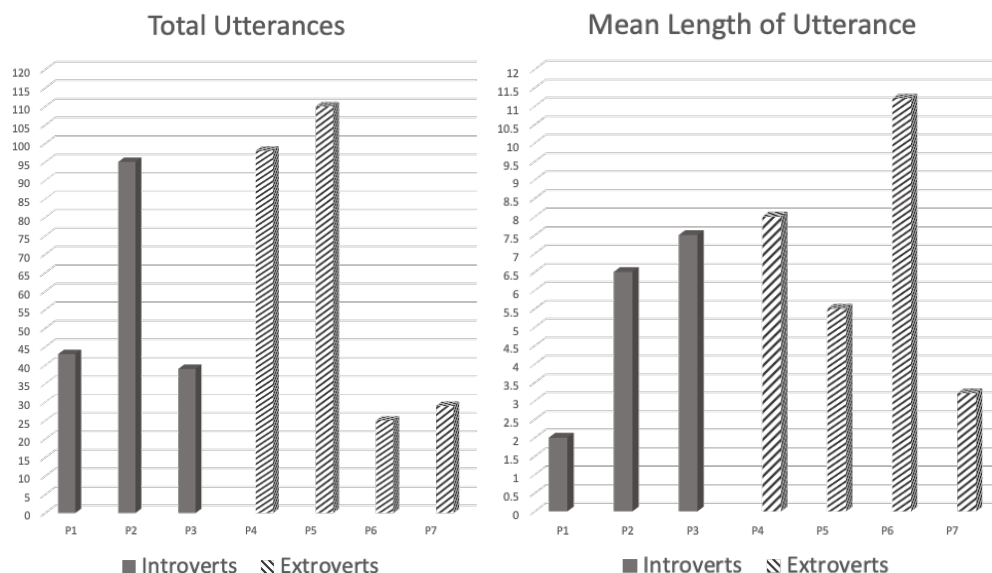
Results

Data regarding our topic was collected via previously recorded teletherapy and traditional therapy sessions along with the completion of a 28 Likert scale questionnaire. The participants were grouped into two categories: introvert and extrovert, which were determined by the answers to various questions they provided on the questionnaire. The questionnaire was divided into three sections: before my stroke, after my stroke, and currently. The participants were divided into the introvert and extrovert groups by the responses they provided to the following questions: after my stroke I consider myself an outgoing person, after my stroke I consider myself a shy person, and after my stroke I enjoy large social gatherings.

During the review of the various group therapy videos, the investigators focused on determining the average utterance length in words, total comments, independent comments, response to peers, and direct response to clinician per participant. The investigators compared the average results for the extrovert group and the introvert group.

Due to Kean’s database server being shut off due to lack of use with the temporary closure of the on-campus clinic, the investigators were only able to collect data for face-to-face group therapy sessions on three participants: participant one who considered themselves introverted and participant four and five who considered themselves extroverted. Of these three participants, the investigators were able to compare the average utterance length in words, total comments, independent comments, response to peers, and direct response to clinician from face-to-face group therapy sessions and teletherapy group therapy sessions. This allowed the investigators to determine personal styles and how they impacted the participants’ performance and participation throughout the various sessions.

Figure 1. Average total utterance and mean utterance length in words for introvert and extrovert participants in group therapy session held via teletherapy.



In Figure 1, participants 1-3 who are identified as introverts had an average of total utterance to be 59 and the average utterance length in words was 5.3 while in group sessions held via teletherapy. For the extrovert participants 4-7 the average number of utterances for was 65, and the average utterance length in words was 6.9 while in group sessions held via teletherapy.

Introverts (participants 1-3)	Average number of response type
Independent response	43
Direct response to clinicians	25
Direct response to peer	11
Extroverts (participants 4-7)	Average number of response type
Independent response	25
Direct response to clinician	14.25
Direct response to peers	25.25

Table 2, represents the average number of responses while in group teletherapy broken down into the three types of responses (Independent, direct response to clinician, direct response to peer.)

In Table 2 the average type of responses for participants 1-3 while in virtual group sessions were as follows: independent responses was 43, direct responses to peers was 11, and direct responses to clinician was 25. For the extrovert participants 4-7 the average type of responses were: independent responses were 25, direct response to peer was 14.25, and direct responses to clinician was 25.25.

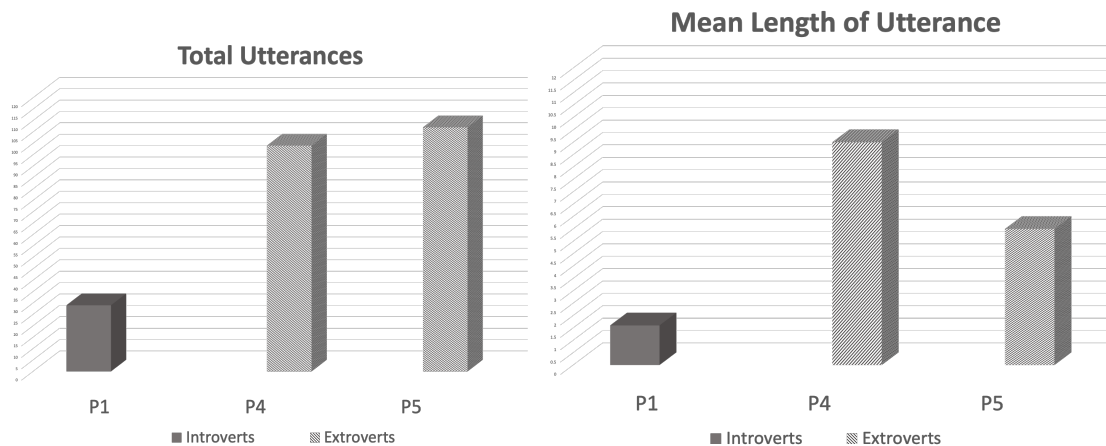


Figure 2, average total utterance and average utterance length in words for introvert and extrovert participants via face-to-face in-person group therapy.

Limited in-person data was acquired due to COVID-19 restrictions. However, Figure 2 represents the current data obtained and the comparison between responses for both in-person therapy and teletherapy for participants 1, 4, and 5. Participant one was identified as an introvert, and participants 4 and 5 were identified as extrovert. For participant one the data shows that the total number of utterances while in face-to-face group therapy was 29, and the average utterance length in words was 1.6. For participants 4 and 5 the average total utterance while in face-to-face group therapy was 103, and the average utterance length in words was 7.25.

Introvert (Participant 1)	Number of response type	Number of response type
	(Face-to-Face therapy)	(Teletherapy)
Independent response	4	8
Direct response to	24	35
Direct response to peer	1	0

Total times spoken	29	43
Extrovert (Participant 4)		
	Number of response type (Face-to-Face therapy)	Number of response type (Teletherapy)
Independent response	47	50
Direct response to	39	28
Direct response to peers	21	20
Total times spoken	107	98
Extrovert (Participant 5)		
	Number of response type (face-to-face therapy)	Number of response type (Teletherapy)
Independent response	29	42
Direct response to	31	31
Direct response to peers	39	33
Total times spoken	99	106

Table 3, compares the average number of responses during face-to-face group therapy to the number of responses during in virtual/teletherapy broken down into the three types of responses (independent, direct response to clinician, direct response to peer)

In the table presented above, it demonstrates the direct comparison between behaviors observed during face-to-face group therapy sessions and teletherapy sessions. As hypothesized, participant one who described themselves as introverted presented with nearly 65% more interactions during teletherapy sessions compared to face-to-face sessions. More specifically, the highest increase was observed during direct responses to the clinician. It was also hypothesized that participants who considered themselves extroverted would demonstrate reduced participation during teletherapy sessions; however, their interaction levels appeared to average

the same. Participant four demonstrated a small decrease in interaction during teletherapy sessions while participants 5 demonstrated a small increase in interaction during teletherapy.

Discussion

The purpose of this study was to determine how personal styles of individuals with aphasia can impact their participation levels within group therapy sessions across service delivery models, specifically in traditional face-to-face sessions and teletherapy. This area was investigated since clinicians noticed a shift in behavior amongst group therapy members at the Kean University Center for Communication Disorders after the recent change in service delivery. Additionally, there is minimal research regarding this newly emerging topic. Therefore, it is important for clinicians to continue researching these areas in order to provide the most incorporative treatment sessions for all participants. The study included seven participants who are recurrent clients to the university clinic who have attended in-person and virtual aphasia group therapy sessions. Data regarding our topic was collected via previously recorded teletherapy and traditional therapy sessions, along with the completion of a 28 Likert scale questionnaire. The investigators analyzed the recorded sessions to calculate the average utterance length in words, total utterances, response to peers, direct response to clinician, and independent comments per each participant in both in-person and virtual sessions, then compared these results to the questionnaire responses. Unfortunately, due to a University server being disabled due to lack of use, the investigators were only able to collect data from three participants' face-to-face therapy sessions who had in-person sessions saved on DVDs (participants 1, 4 and 5). Results indicated that introvert and extrovert participants displayed no significant difference between total utterances produced and utterance length in words within the

session. Additionally, we have been able to determine that participants who considered themselves introverted participated less frequently during in-person group sessions and are more likely to participate independently in group sessions via teletherapy. Participants who considered themselves extroverted present with no change in participation across service delivery models. Lastly, participants demonstrate meta-awareness of their participation across service delivery models. Therefore, our hypothesis was partially supported since extroverted participants maintained the same level of participation across service delivery models.

Limitations

Due to COVID-19 and ongoing clinic closure, the investigators were unable to obtain data for all participants during in-person group therapy sessions in order to provide a comparison for each individual. We urge future investigators to consider researching the area of individuals with aphasia and their participation levels during therapy sessions across service delivery models. Additionally, since participants for this study were volunteers; the investigators were unable to include an equal number of males and females in the study.

Conclusion

This study focused on how differences in personal styles can impact participation levels amongst individuals diagnosed with aphasia as they attend group therapy sessions through different service delivery models. Data collection was limited due to COVID-19 so the topic could not be fully investigated; however, it was determined that individuals who consider themselves introverted may present with increased participation levels during teletherapy while those who consider themselves extrovert may display similar participation levels. The findings of this research may help clinicians analyze their patient's behavior and facilitate increased

participation levels, and it may also provide insight to group therapy members on how their personal styles can impact their individual success during various sessions. The investigators of this study recommend future students, practitioners, and scholars to research further into this growing topic.

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APPENDIX 1: Recruitment email

Email to recruited participants

“Dear Participant #___,

Thank you for signing up to participate in our research titled, “How differences in personal style can impact participation in group therapy sessions across delivery models.” Below please find a link to the questionnaire along with consent forms that need to be complete in order to access and begin the questionnaire. Please note, this questionnaire is not anonymous and the researchers will know your answers to each question. If you encounter any technical difficulties accessing the website or files please reply to this email and the investigators will assist you. If you would like assistance completing this survey, you may also reply to this email and I will schedule a time with you to do so. Your time and contribution to our study is greatly appreciated.

Follow this link to the Survey: (link provided)”

APPENDIX 2: Participant Personality Survey Research Questionnaire

Answer the following questions to the best of your abilities.

1. What is your gender?
 - a. Male
 - b. Female
 - c. Do not wish to disclose

2. How old are you?
 - a. 18-30
 - b. 31-43
 - c. 44-56
 - d. 57-69
 - e. 70-82

BEFORE MY STROKE...

3. I considered myself to be an outgoing person.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

4. I consider myself to be a shy person.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

5. I enjoy large social gatherings.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

6. I am comfortable speaking in the presence of others.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

7. I enjoy more intimate conversations.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

8. I often rely on others to start a conversation and keep it going.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

9. My mood can change quickly.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

10. I would never let myself cry in front of others.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

11. I often have a hard time understanding other people's feelings.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

AFTER MY STROKE...

12. I considered myself to be an outgoing person.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

13. I considered myself to be a shy person.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

14. I enjoy large social gatherings.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

15. I am comfortable speaking in the presence of others.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

16. I enjoy more intimate conversations.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

17. I often rely on others to start a conversation and keep it going.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

18. My mood can change quickly.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

19. I would never let myself cry in front of others.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

20. I often have a hard time understanding other people's feelings.
- a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

CURRENTLY...

21. I enjoy attending face-to-face Aphasia Group Therapy.
- a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly Agree
22. I am an active participant in face-to-face Aphasia Group Therapy.
- a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
23. I have noticed an improvement in my speech and language abilities while participating in face-to-face Aphasia Group Therapy.
- a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
24. I think there is a big difference between in person group therapy and tele-health group therapy.
- a. Strongly disagree
 - b. Disagree

- c. Neutral
- d. Agree
- e. Strongly agree

25. I prefer to participate in face-to-face Aphasia Group Therapy rather than tele-health group therapy.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

26. I rather participate in tele-health group therapy than not to do group therapy at all.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

27. I participate in tele-health group therapy **just as much** as I participated during face-to-face therapy.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

28. I participate in tele-health group therapy **more than** I participated during face-to-face therapy.

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

APPENDIX 3: Informed Consent

Title of Project: How differences in personal style can impact participation in group therapy sessions across delivery models

Researchers: Chelsea A. Libreros-Cortes, Kylie Trebour, and Nicholas Zablocki
Department: Nathan Weiss Graduate College, Communication Disorders and Deafness
Contact Information: Email: libreroc@kean.edu

Faculty Advisor: Jessica Scheuer
Department: Nathan Weiss Graduate College, Communication Disorders and Deafness.
Contact Information: Telephone: (908) 737-5801 Email: scheujes@kean.edu

i) **Invitation to Participate:**

We are inviting you to participate in a research study. Participation in this study is completely voluntary. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

ii) **Purpose of Study:**

The purpose of this study is to determine how one's personal style can impact their participation levels within a group therapy session across delivery models, including face-to-face therapy and telerehabilitation. Results from this study will allow us to investigate the participant's perceptions and preferences on the recent change of service delivery models as a result of the COVID-19 pandemic. Additionally, it will provide information on how an individual's personal style can contribute to their participation level in group therapy sessions across service delivery models.

iii) **Participant Selection:**

You have been selected to participate in this study because you are or were a client at the Kean University Center for Communication Disorders (KUCCD) who participated in aphasia group therapy.

iv) **Procedures:**

If you would like to participate in this study you would be asked to complete a short Likert scale survey with a focus on your understanding of your personal style and how it may impact your participation during various service delivery models for stroke rehabilitation. The survey will include questions on your perceptions and preferences of the service delivery models and personal style characteristics. To complete this survey, you will need to have access to the internet. This survey may take approximately 10 to 20 minutes to complete.

Additionally, the investigators will be conducting chart reviews of your KUCCD files to obtain background information along with accessing your previously recorded Group Therapy session videos to collect information on your engagement and participation throughout the session.

v) **Potential Risks:**

You will be required to complete a questionnaire regarding your personal feelings towards teletherapy in comparison to face-to-face therapy. This may cause negative psychological states, due to having to reminisce and possibly become nostalgic toward the recent drastic changes to everyday life, as well as stress from self evaluating and determining your own change in behavior as a result of face-to-face services transitioning to teletherapy.

One week after the initial questionnaire link is sent to the participants, investigators will follow up with the participants to see if they have questions or to schedule an individual zoom meeting as needed. This will allow the participants to address and answer questions or concerns without requiring them to contact the investigators independently. Additionally, at the completion of the Qualtrics form the participants will be provided with the primary investigator's and the faculty administrator's email and telephone number if the participants may need to contact them with any questions or concerns immediately following the completion of the questionnaire. If you would wish to receive professional services please contact the Kean University Psychological Services at (908) 737-5890 to address any kind of negative emotions you may feel as a result of study activities.

vi) **Potential Benefits:**

No direct benefits are expected to result from this study. This study serves to benefit the field of speech-language pathology. This study will allow us to investigate how personal style differences can contribute to participation level in group therapy sessions across service delivery models.

vii) **Financial Obligation:**

There are no financial obligations required for participating in this study.

viii) **Compensation/Treatment:**

Participation in this research is completely voluntary. There is no compensation awarded for participating in this study.

ix) **Confidentiality:**

All participation in this study will be kept confidential. Video recordings from aphasia group sessions and client records will be accessed through the KUCCD clinic's files and not replicated in any way. All results and data will be stored in a safe and guarded environment. Survey data will be downloaded then deleted from Qualtrics and the computerized files will be kept on a password protected drive, locked in a file cabinet in the primary investigator's office when not in use. All computerized files and paper records will not contain any identifying participant information. Records will be stored in locked file cabinets for five years. After five years, the records will be shredded and files will be deleted. Any and all conversations between you and the

researcher that take place during the study will be treated as private, and thus will not be shared with anyone other than the researchers.

x) Participation:

Participation in this research study is voluntary. You have the right to decide not to participate. You may choose to stop participating at any point. If at any time you decide to stop participating, you may do so without penalty and your results will be withdrawn.

Questions/Comments:

If you should have any questions or concerns regarding this study, please direct all questions to the primary investigator, Chelsea A. Libreros-Cortes or the faculty advisor, Jessica Scheuer. If you should have concerns regarding your rights as research participants, please contact Kean University's IRB.

Contact Information

Primary investigator/Researcher : Chelsea A. Libreros-Cortes libreroc@kean.edu

Faculty Advisor: Jessica Scheuer (908) 737-5801 or scheujes@kean.edu

IRB: (908) 737-3461 or IRB@kean.edu

If you agree to participate in this study, please check the corresponding box below. By doing so, your electronic signature indicates that you have read and understood the provided information in this document, and that you are agreeing to participate in this study.

Additionally, your consent will allow disclosure of your client records and group session videos from the Kean University Center for Communication Disorders to all members of the research team.

At any time during the course of this study should you have any questions or concerns please contact the primary investigator or the faculty advisor at the telephone number or email address listed above.

By clicking the button below you are acknowledging your participation in this study is voluntary and you are 18 years of age or older, and you are aware you may choose to terminate participation in this study at any time.

APPENDIX 4: Debriefing Form

Title of Project: How differences in personal style can impact participation in group therapy sessions across delivery models

Researcher/PI: Chelsea A. Libreros-Cortes

Contact Information: Kean Email: libreroc@kean.edu

Faculty Advisor: Jessica Scheuer

Contact Information: Telephone (908) 737-5801 Email scheujes@kean.edu

Thank you statement:

Thank you for agreeing to participate in this study! The general purpose of this research is to investigate the role personal traits play in teletherapy group dynamics and how specific personal style characteristics can impact participation during group therapy sessions.

Recap Statement:

Aphasia, an acquired language disorder resulting from a brain injury, currently affects about 1 million people in the United States (ASHA, n.d.). The leading cause of aphasia is a stroke, leaving 25 to 40 percent of survivors with an expressive and/or receptive disorder that can affect one or more of the four language modalities: spoken language expression, spoken language comprehension, written expression, and reading comprehension (ASHA, n.d.).

Telepractice is the application of telecommunications technology to the delivery of speech language pathology and audiology professional services at a distance by linking clinician to client or clinician to clinician for assessment, intervention, and/or consultation (ASHA, *Telepractice* 2020) It is stated by ASHA that telepractice services must be equivalent to the quality of services provided in person and consistent with adherence to the *Code of Ethics* (ASHA, 2016a), *Scope of Practice in Audiology*(ASHA, 2018), *Scope of Practice in Speech-Language Pathology* (ASHA, 2016b), state and federal laws (e.g., licensure, Health Insurance Portability and Accountability Act [HIPAA; U.S. Department of Health and Human Services, n.d.-c]), and ASHA policy (ASHA, *Telepractice* 2020). Due to the current global pandemic of COVID-19 telepractice services are now used within schools, medical centers, rehabilitation hospitals, community health centers, outpatient clinics, universities, clients' homes, residential health care facilities, child care centers, and corporate settings . As long as the clinician provides services within compliance with the national, state, institutional, and professional regulations there are no limits to where these services can be provided.

Due to the COVID-19 pandemic, speech and language services at Kean University Center of Communication Disorders (KUCCD) are provided through teletherapy.

The purpose of this study is to determine how one's personal style can impact their participation levels within a group therapy session across delivery models, including face-to-face therapy and telerehabilitation. The survey you have taken provides us with data regarding your personal traits

that allow us to identify correlations between personal traits and level of participation in group therapy.

Based on previous research conducted by Jin K. Hammock and Moon J. Lee on the effects on individuals communication experience in comparison with face-to-face communication, which found that typically shy individuals felt less communication apprehensions during online discussion as opposed to face-to-face communication (Hammick & Lee, 2014). We predict that participants who were previously considered to be introverted will appear to be more extroverted within aphasia teletherapy group services. More specifically, for individuals who participated less during face-to-face services will appear to participate more (i.e., more engaged, more responsive to questions provided by the clinician, more responsive to other group members) during teletherapy services.

Compensation/Treatment:

There are no financial obligations, compensation, or risks in connection to this research.

Questions/Comments:

If you should have any questions or concerns regarding this study, please direct all questions to the primary investigator, Chelsea A. Libreros-Cortes or the faculty advisor, Jessica Scheuer. If you should have concerns regarding your rights as research participants.

- **Primary investigator/Graduate student:** Chelsea A. Libreros-Cortes (908) 868-3294 or libreroc@kean.edu
- **Faculty Advisor:** Jessica Scheuer (908) 737-5801 or scheujes@kean.edu
- **IRB:** (908) 737-3461 or IRB@kean.edu

If you feel as though the materials in this study caused you to feel uncomfortable in any way please contact the Kean University Psychological Services located on 215 North Avenue Hillside, NJ East Campus Room 138. Their phone number is (908) 737-5890. Also, if you would like to participate in a debriefing session with the primary investigator, Chelsea A. Libreros-Cortes please contact her via the information provided above

If you are interested in reading more about aphasia and teletherapy for individuals with aphasia, try the following:

Aphasia Definitions. (2018, June 20). Retrieved November 02, 2020, from <https://www.aphasia.org/aphasia-definitions>

Aphasia: Incidence & Prevalence. (n.d.). Retrieved November 02, 2020, from https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589934663&ion=Incidence_and_Prevalence

Aphasia and its effects. (2019, October 01). Retrieved November 02, 2020, from <https://www.stroke.org.uk/what-is-aphasia/aphasia-and-its-effects>

Telepractice. (n.d.). Retrieved November 02, 2020, from <https://www.asha.org/Practice-Portal/Professional-Issues/Telepractice/>

Thank you for your participation!