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Research article

Exploring benefits of speech and language therapy interventions for post-stroke aphasia rehabilitation: A qualitative study

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ABSTRACT

Background: The ability to understand and use language is impacted in people with aphasia, often requiring Speech and language therapy interventions to improve their ability to communicate. Currently, there is limited information concerning the experiences of people with aphasia who have undergone speech therapy in many countries such as Ghana where the practice of speech and language therapy is still in its infancy. Such knowledge is known to enhance the uptake of speech and language therapy services and improve both quality and reach.

Objective: This study examines the perceived benefits of speech and language therapy interventions for people with aphasia in Ghana from the perspectives of those living with aphasia, their family members and Speech therapists. Additionally, this study sheds light on the interventions employed by Speech therapists in their pursuit of enhancing communicative competence among people with aphasia.

Design: We employed a qualitative research design with a purposive sampling technique to recruit seven people with aphasia together with a family member and five Speech therapists.

Participants: A total of 19 participants (7 people with aphasia, 7 family members and 5 Speech therapists) were recruited for this study.

Methods: A semi-structured interview guide was used. Interviews were audio recorded, transcribed, and subjected to thematic analysis employing the Interpretative Phenomenological Analysis approach, to explore and comprehend the participants' lived experiences.

Results: Our findings revealed that people with aphasia perceived speech and language therapy interventions to be beneficial as it enhanced their communication abilities as well as their quality of life. Family members of people with aphasia valued speech and language interventions as it gave them the opportunity to play a significant role in the recovery process of their family members with aphasia. Speech therapists described using a combination of impairment and functional/communication-based interventions to improve the communication skills and social participation of their clients with aphasia.

Conclusions: Findings of the study indicate that people with aphasia and their caregivers experience significantly negative impact on their communication and quality of life, underscoring

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their profound appreciation for the relief provided by speech and language therapy interventions. Those who have undergone speech and language therapy interventions are inclined to recommend it to others due to its substantial benefits. This can be leveraged to increase the uptake of speech and language therapy and countries where the practise is still in its infancy.

1. Background

Language production and comprehension are profoundly impaired by aphasia, an acquired neurological disorder caused by disruptions in the brain's intricate language networks [1]. Aphasia is also characterised by linguistic impairments alongside emotional and psychosocial challenges [1]. As social beings, the ability to communicate serves as the cornerstone for all interactions, daily activities, and life roles. This ability is impaired in people with aphasia (PWA), leading to fewer social activities [2]. Consequently, this can result in social isolation, further deteriorating their post-stroke quality of life [3]. Research indicates that aphasia is more detrimental to quality of life than other health conditions, such as cancer and Alzheimer's disease [4]. Unlike cancer, aphasia does not cause death; rather, it forces people to endure the ongoing frustration of reduced communication abilities [5].

The negative impact of aphasia extends beyond PWA, as family members who are considered the primary communication partners of PWA are faced with their own challenges [6].These challenges include dealing with new responsibilities, navigating changes in relationships and family dynamics and their own emotional health problems as they adjust and adapt to PWA [7]. As such, PWA and their family benefit from intervention and support, typically coordinated by Speech therapists.

Speech therapists are trained in speech and language therapy (SLT) interventions which aim to lessen the impact of the communication challenges. This includes coaching PWA and their family members on how to live successfully with aphasia. Even though there is no known medical or surgical treatment for aphasia, research has demonstrated that SLT interventions can be effective in improving the communication abilities of PWA [8]. Research has also shown that, language impairments when identified, assessed, and treated early, can maximise communication, and help PWA interact with their environment towards meaningful activities and roles over time [9].

To assess aphasia requires characterising a person's communicative function, determining the type of language impairment, as well as a person's communicative strengths and support needs [10]. These assessments guide Speech therapists to work with PWA and family members to establish goals aimed at achieving functional communication [9]. Through this, SLT interventions can promote a supportive communication environment for PWA and their family members [11]. Ultimately, interventions seek to restore language function and to assist PWA in using their intact skills to compensate for weaknesses and maximise functional communication [12]. To effectively achieve this goal, principles and guidelines for managing aphasia have been developed with a rapidly expanding evidence base internationally [13–15].

While aphasia services are well established in many parts of the world, the incorporation of SLT into Ghana's healthcare system is a comparatively recent development. Consequently, there is a limited body of research exploring aphasia therapy provision in Ghana, a reality mirrored by several developing countries with equally insubstantial SLT availability. In many low- and middle-income countries, access to SLT remains a significant public health challenge, particularly for individuals with post-stroke aphasia [16]. Several African nations, including Nigeria, Kenya, Uganda, and South Africa, face similar barriers to the provision of SLT services, such as a lack of trained professionals, inadequate healthcare infrastructure, and cultural misconceptions about speech and language disorders [17]. Efforts in these countries to integrate SLT into public health systems highlight both the successes and ongoing challenges of establishing sustainable services [18]. Outside of Africa, studies on the indigenous Aboriginal populations of Australia reveal parallels in the struggle to provide SLT services in remote and underserved communities [19]. Research in this context has shown that culturally tailored, community-driven approaches are necessary to meet the unique needs of these populations [20].

Despite these shared global challenges, little is known about how speech and language interventions benefit PWA in Ghana. While the SLT field is still emerging in Ghana, it is crucial to understand how those who have accessed these services perceive their effectiveness. The benefits and challenges can be used to inform SLT practice and increase uptake of SLT services in Ghana and other countries in similar positions. Therefore, this study aims to fill that knowledge gap by exploring the personal experiences of PWA and their family members. Additionally, the study explores the role of Speech therapists in providing therapy services, including the types of interventions used, and the perceived impact it has on everyday communication abilities of PWA and their family members.

2. Methods

2.1. Sampling and participants

Three different participant groups were involved in this study, namely, people with aphasia (n = 7), their caregivers (n = 7) and Speech therapists (n = 5). The sampling was purposive as all PWA, and their family members were recruited through their Speech therapists. The first author contacted Speech therapists from Korle Bu teaching Hospital (Accra) and Trust Hospital (Accra) to seek permission from PWA and their family/caregivers before the first author contacted them. Data on individuals who were eligible were gathered from the Speech therapists. The first author then used the contact details from the Speech therapists to call the person with aphasia or their family member once permission was obtained from them. The first author briefly introduced the study over the phone and a one-on-one interview was scheduled once they agreed to participate in the study.

The inclusion criteria for persons with aphasia was as follows: aged between 40 and 70 years, aphasia caused by a stroke, must have been at least 6 months post stroke, must have relatively good comprehension as determined by a Speech therapist in a language of their choosing and were living with family members (nuclear or extended). The inclusion criteria for family members in this study required them to be at least 18 years of age and a primary conversation partner of the PWA since the onset of aphasia. Speech therapists were therapists who had been licensed by the Allied Health Professions Council of Ghana and had at least 3 years working experience with PWA.

All PWA and their respective family members engaged in this study exclusively within the familiar confines of their residence except a singular pair of participants who chose to travel to the Korle Bu Teaching Hospital. Speech therapists purposely recruited for this study participated through a combination of in person interviews and online interactions facilitated by video conferencing tools (Zoom Video Conferencing., Zoom Inc).

See Tables 1 and 2 for more detailed description of the participants.

2.2. Data collection procedure

A qualitative research approach with semi-structured questions was employed as the means of data collection. Semi-structured interviews were conducted with five speech therapists, seven PWA and their families. A consent form was provided for the participants to complete before conducting and recording the interviews, with their caregivers serving as witnesses. After the consent was read and explained to PWA, those who were unable to write or append their signature, had their caregivers act as a third-party signatory on their behalf. The participants received complete assurances on the security and confidentiality of their data. Various communication strategies were employed to facilitate the PWA's ability to express their own opinions. Simplified language was used to ensure that questions were easy to understand, and the interviewer allowed extra time for responses. Additionally, visual aids and gesture prompts were integrated to help participants express their thoughts when verbal communication was challenging. When necessary, questions were rephrased or repeated to ensure comprehension, and participants were encouraged to respond using both verbal and non-verbal means. Augmentative and alternative communication (AAC) tools, such as Yes and No picture prompts, were also made available to support communication. Family members helped clarify questions and provided additional context when participants had difficulty understanding or responding.

2.3. Interviews

All interviews were conducted by the first author (GL) who is a speech therapist in training using an interview guide developed in collaboration with the second author (OA) who is a qualified speech therapist with 4 years of clinical experience. All interviews were recorded for subsequent transcription and analysis. Interviewing PWA together with their family took between thirty to 40 min whereas interviewing the speech therapists took ten to 15 min on average. The semi-structured interviews were conducted using an interview guide with follow up or clarifying questions used as needed. This allowed for the generation of fresh ideas from the responses to gather comprehensive and person-centred information from the participants. Questions were specifically designed for each of the three participant groups to lead towards an understanding of the extent to which aphasia impacted PWA and families while also assessing the perceived benefits of speech therapy. Interviews were conducted in multiple languages (English, Twi, Ga and Ewe) all of which the interviewer is fluent in.

2.4. Data analysis

To gain a thorough understanding of the perceived communication benefits that may or may not have been derived from SLT intervention for PWA and their families, the data was analysed using Interpretative Phenomenological Analysis according to the procedures outlined by Smith et al. (1999) [21].

The researchers listened to the recorded data multiple times for accuracy. Transcriptions were made to observe meanings and patterns, followed by documenting key concepts and potential codes for further analysis. Initial codes to represent the patterns and meanings present in the data were generated and documented in a journal for systematic organisation. A subsequent review of the data allowed for the identification of interesting excerpts, to which the relevant codes were applied. Consistency was maintained by making

Table 1
The demographics of the people with aphasia and family study population.

People with aphasia pseudonym	Sex	Age of onset (yrs)	Dosage of Therapy	Caregiver pseudonym	Caregiver's relationship with people with aphasia
Ama	Female	46	1 h/week for 4 weeks	**Mawuli**	Husband
Kojo	Male	61	1 h/week for 6 weeks	**Abla**	Wife
Kofi	Male	48	1 h/bi- weekly for 11 weeks	**Kusi**	Brother
Adzo	Female	58	N/A	**Kwamena**	Son
Kwasi	Male	60	1 h/week for 12 weeks	**Akweley**	Wife
Yaw	Male	57	1 h/bi-weekly for 4 weeks	**Ayi**	Wife
Kwami	Male	55	1 h/week for 7 weeks	**Osei**	Son

Note: N/A- Not Available. Participants could not recall their therapy dosage as it had been over two years.

Table 2
The demographics of the Speech Therapists population.

Speech therapist Pseudonym	Sex	Practice Sector	Years in Aphasia Therapy
Lucy	Female	Public	4 years
Fred	Male	Private	13years
Julie	Female	Public	4 years
Rami	Female	Public	4 years
Suzy	Female	Public	4 years

use of the same code to represent excerpts conveying similar meanings. Grouping of all excerpts linked to a specific code was conducted manually. Once codes were finalised, they were sorted into potential themes. Seven emergent themes surfaced, some with accompanying subthemes, while others stood independently. These themes collectively reflected trends and patterns evident within the dataset.

The primary analysis heavily relied on the interpretation of the principal researcher; nevertheless, the research team engaged in multiple discussions to ensure a reflexive approach in analysing and interpreting the data. The team then collectively reviewed and refined the emerging categories. This process was facilitated through discussions and reflective feedback, aiming to identify and address biases, overstatements, and discrepancies that may have been in the primary analytical and interpretative phases.

2.5. Ethical considerations

The Ethical and Protocol Review Committee of the School of Biomedical and Allied Health Sciences at the University of Ghana granted approval for the study (SBAHS/AA/ASLT/10417716/2021–2022). Based on the ethical clearance, permissions were granted by Speech and Language Clinics at the Korle Bu Teaching Hospital and Trust Hospital, both in the capital city (Accra) of Ghana. Participants received assurances that the information collected will be used exclusively for the study. Participants were informed of the study's objective and the method for gathering data. All families and Speech therapists who consented were included and were informed they could withdraw from the research at any time. Data gathered from the study was treated as confidential and pseudonyms employed to protect the identity of the respondents.

2.6. Reflexivity statement

This work was carried out as part of a Masters research project by the first author (GL). GL was a final year Masters in speech therapy student under supervision of the second (OA) and last authors (TT), with support from the third author (EO). Therefore, GL had the freedom to undertake the project in a manner which encouraged ownership as part of the training process. For this reason, all interviews were performed by GL as it complimented the theoretical (from TT and EO) and practical (from AA) training being received. The experience of directly engaging with persons with aphasia, their family members and other speech therapists, was influenced by a natural drive to understand how the benefits of speech therapy was perceived by all parties.

As has been repeatedly stated, SLT is a young field in Ghana with many unanswered questions. Therefore, this project was motivated by a desire to collect evidence that could be used to showcase the benefit of speech therapy as has been established in other jurisdictions. This information could be used by relatives of persons with aphasia and speech therapists to encourage persons with aphasia to attend speech therapy. As SLT is a young field in Ghana, such data was of particular importance to OA who is a speech

Table 3
Overview of themes and subthemes.

Themes	Subtheme
1. Low Knowledge Levels of Aphasia and Speech and Language Therapy	1.1 Limited Knowledge and Expectations
	1.2 Speech and language therapy Education is Beneficial
2. Poor Communication Prior To Therapy	N/A
3.Negative Impact of Aphasia on Quality of Life	3.1 Finances and Employment
	3.2 Social Participation
	3.3 Identity Crisis
	3.4 Domestic Life
	3.5 Emotional Wellbeing
4. Family's Significant Role in the Recovery Process of People with Aphasia	4.1 Emotional Support
	4.2 Homework Support
	4.3 Communication Support
5. Intervention Approaches Used in Ghana	5.1 Assessment Practice
	5.2 Therapy and Social Participation
	5.2 Intervention Activities
6. Benefit of Speech Therapy for Aphasia	6.1 Communication After Therapy
	6.2 Person-Specific Benefits of Speech Therapy
7. Improvement in Therapy Uptake: Referrals and Recommendations	7.1 Increased Referrals
	7.2 Willingness to Recommend Speech Therapy

therapist because experiences from speech therapists interviewed in this study could inform best practice within the field. EO (health consultant) and TT (neuroscientist) both have interests in behavioural change and factors that influence health seeking behaviour. The influences of these differing interests which underscore the project is evident in the focus of some of the sub themes. Nonetheless, this broadened the perspective from which the interview data was interpreted.

3. Results

A total of 19 participants (7 people with aphasia, 7 caregivers and 5 Speech therapists) were included in this study. Demographic information on the participants is given in Tables 1 and 2.

Table 3 shows themes and sub-themes that were generated from the interviews. These themes reflected the perception that the participants had concerning the effects of aphasia on their communication and overall, wellbeing, their knowledge of aphasia intervention, and how these interventions were of benefit to their communication. Quotations and examples are presented to illustrate the participants' descriptions and experiences.

3.1. Theme 1: low knowledge levels of aphasia and speech and language therapy

The first theme initially highlights the low knowledge levels among the PWA and their caregivers. This theme unfolds into the beneficial aspects of SLT education. The progression of this theme into its subthemes implies that there is a potential for improved outcomes when the PWA as well as their caregivers are involved in informed and collaborative therapeutic practices as engaged by Speech therapists.

3.1.1. Subtheme 1.1: limited knowledge and expectations

Most caregivers revealed that they were unfamiliar with SLT services before their person with aphasia were referred.

> *Kusi (Caregiver)- "No, in fact if not for my brother, I've not heard of speech therapy, it's when he had this condition that we were told that there is speech therapy".*

Some admitted that they anticipated being given medical prescriptions to address aphasia.

> *Akweley (Caregiver) – "I thought maybe they'll give him medicine. I thought maybe only medicine, but it was kind of him writing, then the speech exercises".*

This highlights their misconceptions about speech and language therapy. Initial surprise at the assessment process and therapy setting was expressed by some caregivers, however positive feedback from the PWA changed their perspectives.

> *Kwamena (Caregiver) - "when I entered, I was like, is this place a school or what? Because I saw these 'kids' chair and other ABC things, I said ah what's the meaning of this?.. but the third week when we came Suzy (a Speech therapist) showed her certain pictures, and she was able to recognize and mention their names. That convinced me.".*

Despite initial disappointment with slow progress, caregivers persevered, highlighting the importance of managing expectations at the onset of therapy.

> *Kwamena (Caregiver) – "My expectation was that she can talk normally as she used to do, but first week, second week. I was kind of losing interest … But. I said to myself, "well, she's my mom, so if I'm wasting money on her to get well, I think it's worth it".*

3.1.2. Subtheme 1.2: speech and language therapy education is beneficial

Speech therapists use varied methods to educate the PWA and their families on aphasia, avoiding technical language and relying heavily on visuals.

> *Lucy (Speech therapist) - I explain that this part (Pointing to a picture) of the brain is in charge of this part of our body and it does this and that, and based on what we have found out, this is where your problem is. This is why. If you want to ask him this question, he's not able to answer. Or this is why he may be able to say things, but it doesn't really make sense. So, I usually use diagrams".*

They highlighted that this process prepares the clients for the therapy process. Some caregivers and their PWA, had been pre-informed by the referring physicians on what to expect, leading to high hopes for therapy. They emphasised the role of informed expectations in the rehabilitation process.

> *Kofi (person with aphasia) – "right from the beginning, after talking to almost three of the doctors, all of them concluded that there is a high possibility that the speech will come back again, but it will take time".*

Through the education process, caregivers gained understanding of the various aspects of aphasia such as understanding the connection between aphasia and the brain.

> *Kusi (Caregiver)- "we were told it affected the part of the brain that coordinates speech."*

Caregivers were enlightened in their understanding of the rehabilitation process as they actively contributed towards recovery. Their evolving understanding contributed towards a positive approach to therapy sessions.

Kusi (Caregiver) – "With the therapy it is like something you have learnt before and you have forgotten everything. So, during the therapy exercises, you will refresh your memory. So, it's not like you don't know it already, it's things that you know but because of the stroke it's very difficult to recollect."

3.2. Theme 2: poor communication prior to therapy

This theme reflects the communication challenges faced by PWA before accessing SLT. The difficulties in speaking, writing, and reading are highlighted, along with specific presentations of communication issues.

Some PWA faced severe communication limitations, rendering them unable to speak, resorting to gestures, or struggling to articulate words.

Ama (person with aphasia) - "at first when I speak, they can't hear(understand). *Then I could not even open … talk …. she will ask me …. but I could not talk to her."*

Kofi (person with aphasia) - "I couldn't speak at all. I can't speak at all. When I'm home, I have to use sign language".

Additionally, some PWA exhibited challenges in stringing together long sentences, communicating primarily through single words or experiencing disfluencies in speech.

Osei (Caregiver) - "So sometimes it's fluent, sometimes he stammers".

A caregiver noted that communication with her spouse before therapy was limited to simple affirmations like yes or no.

Abla (Caregiver) - "In fact, before the therapy the communication was not too good. It was just some yes, no."

3.3. Theme 3: negative impact of aphasia on quality of life

This theme explores the detrimental effects of aphasia on various aspects of the quality of life among PWA and their caregivers. The theme is divided into five sub themes based on different domains of quality of life.

3.3.1. Subtheme 3.1: finances and employment

The financial impact of aphasia was brought to light, including the challenges faced by PWA in maintaining employment or businesses underscoring the financial strain associated with the condition.

Kwamena (Caregiver) - "It's affected us big time (significantly) because she has a supermarket, wine shop. Due to the sickness, it's not functioning like how it would if she was there."

Kofi (person with aphasia) - "Yes, I've not started work at all … So, it's been almost a year".

3.3.2. Subtheme 3.2: social participation

Aphasia hampers social participation, as PWA face difficulties in communicating and may withdraw from social activities. Participants express a lack of interest in engaging with others due to communication barriers. Some observed changes in social behaviour, linking it to the language barrier.

Kwami (person with aphasia) - "I didn't feel like stepping out … I'm not able to engage in conversation so I'm not so close to people anymore."

Kusi (Caregiver) - "He wasn't interested in going to social gatherings initially, maybe I'll say because of the speech barrier because he was very instrumental in family disputes but because of this he is a little …."

3.3.3. Subtheme 3.3: identity crisis

Aphasia is known to trigger an identity crisis, transforming once-extroverted individuals into more reserved personalities emphasising the impact of communication difficulties on personal identity, and this was witnessed within our study population.

Abla (Caregiver) - "Because he's the outgoing type, you will not get him at home at this time and he comes back late. But this time, he cannot do the things he normally (does) because communication is not (forth) coming. He feels a bit withdrawn."

3.3.4. Subtheme 3.4: domestic life

Aphasia affects domestic life, with PWA encountering difficulties in simple activities which they didn't use to struggle with prior to having aphasia. Kofi describes the difficulty to remember tasks,

Kofi (person with aphasia) - "When I want to do something. It will take me about 5-10 minutes to remember how to do it",

Abla provides an example of challenges her husband encountered in signing a cheque, emphasising the negative impact on daily routines.

Abla (Caregiver) - "When the thing (Aphasia) happened if you give him a cheque to sign. He's not able to sign it. He'll just turn it upside."

3.3.5. Subtheme 3.5: emotional wellbeing

Aphasia arouses a range of emotional reactions, including fear, despair, rage, frustration, loneliness, shock, shame, and depression. PWA express feelings of frustration, and anguish due to their communication limitations.

Kofi (person with aphasia) - "I felt frustrated. I used to get upset."

Kwasi (person with aphasia) - "you can't express yourself well. It becomes cumbersome. Not worried but kind of frustrated. You know what you want to say but it's not coming."

3.4. Theme 4: Family's significant role in the recovery process of people with aphasia

Family involvement emerges as a deciding factor in the rehabilitation journey of PWA, offering multifaceted support that positively influences emotional well-being and communication abilities. This collaborative effort between PWA, family members, and Speech therapists contributes significantly to achieving positive outcomes in the recovery process. This theme is subdivided into three sub themes which looks at the varied support family provides for PWA.

3.4.1. Subtheme 4.1: emotional support

Family support is perceived as pivotal in motivating PWA to persevere through negative emotions. Encouragement and understanding from family members contribute significantly to the well-being of PWA.

Kofi (person with aphasia) - "My family helps out. They help out, my brother, my sister".

Kusi (Caregiver) - "if you are encouraged by family members, you feel good, you feel comfortable when you feel people around you understand your situations, it helps you to recover."

Speech therapists acknowledge the role of family as a crucial support system, addressing the mental health challenges associated with aphasia.

Suzy (Speech therapist) - "family, they play a very big role in rehab. They act as a support system. When someone has aphasia, they easily get into depression".

3.4.2. Subtheme 4.2: homework support

Family's role extends beyond emotional support. The concept of neuroplasticity, which hinges on consistent practice is vital for recovery. Family members actively participate in intervention activities outside structured therapy sessions, enhancing the rehabilitation process. This involvement is seen as a key factor in maximising gains.

Fred (Speech therapist) - "You know about neuroplasticity, so the more you practise the more you make gains. So even if you practise with your therapist, you do better if you have more opportunities … with the aid of a family member or a carer".

Akweley (Caregiver) - "I see what is done in therapy so I'm able to practise it with him at home".

3.4.3. Subtheme 4.3: communication support

Family members also assist PWA in overcoming communication challenges, stepping in when the PWA struggles with words. They act as therapy assistants, providing crucial support. The family also plays the role as the first point of contact with regards to the aiding recovery or rehabilitation process of PWA,

Rami (Speech therapist) - "in healthcare, if the family is not really accommodating, the healing process doesn't take place, so they are mainly our first point of contact".

Another Speech therapist echoed this sentiment, describing family involvement as a win-win situation, where effective communication between PWA and their family enhances overall outcomes. When the family is made to understand the communication abilities of PWA and are trained in providing communication support, they contribute significantly to the rehabilitation journey.

Suzy (Speech therapist) - "if we can get family on board, it's like a win-win situation. If a family is trained very well, even, let's say when they find themselves in different situations, the family can also act like some sort of communication support for the person because they know how well he's communicating now or what helps with their erhm, the individual's communication."

3.5. Theme 5: the practice of speech and language therapy for aphasia in Ghana

This theme speaks on assessment, intervention approaches as well as activities utilised by Speech therapists. The theme is divided into three subthemes, with the first subtheme highlighting how speech therapists in Ghana assess PWA, followed by how social participation is targeted by Speech therapists and lastly some specific activities PWA were required to engage in.

3.5.1. Subtheme 5.1: assessment practice

The Speech therapists revealed that they do not use formal assessment tools when assessing their clients. Many standardised aphasia assessment tools are designed for English speakers and may not accurately assess individuals who are multilingual as is the case in Ghana. The content and contextual framework of the assessment materials are culturally not relevant to the Ghanaian population and simply translating these tools often fails to capture the nuances of the target language. If assessments fail to consider cultural variations, the results may be inaccurate, leading to potentially ineffective interventions. Owing to this fact, Speech therapists usually do not reveal the severity, or aphasia type to their clients as this information is of little benefit to them.

Lucy (Speech therapist) - "No we don't have a formal tool to use … those ones are not culturally appropriate for me in the clinic".

Suzy (Speech therapist) - "So, I don't really do category specific for clients because even if they know it, what matters is how they are going to function. So, the labelling doesn't really help. I go deeply into explaining what it means to live with aphasia and then how best the family can help the person communicate after being diagnosed with aphasia".

Additionally, some therapists have an informal assessment tool called the Ghana Aphasia Assessment Tool (GHAAST) which they use in their clinics. However, this tool was yet to be standardised.

Suzy (Speech therapist) - "looking at the tool that we developed (GHAAST) we look at the ICF and I look at how the individual is going to function in the society. This is the tool we use in clinic"

3.5.2. Subtheme 5.2: therapy and social participation

Interventions used by Speech therapists were based on the functioning of the individual with aphasia in the community by exploring the impact of aphasia on the individual, family and community. The emphasis was on functional communication, tailored to the individual's needs. Based on this, therapists were able to proceed without the specificity that an accurate assessment tool would have offered. Thus, the objective of therapy extended beyond verbal communication to include all forms of communication modalities, such as gestures, pictorial representations, and written expressions.

Fred (Speech therapist) – "Assisting the person to be able to participate in their everyday environment. So, it also has functional principles. So, what does the person need? So, if the person would need to communicate with his immediate family or the person intends to return to work what do they need to be able to do? So, they need the vocabulary around work they need to be able to, if they are in a position where they need to read text and erm act on it then they should be able to comprehend text. So, you'll be working on those skills."

Suzy (Speech therapist) - "How the Person communicates, then you're looking at how he's functioning in his environment. So, I can take script training, but then I'm not going to use words or pictures that are not important to the client. OK so I make these interventions tailored towards the needs of the client … We are not focusing on just the individual's ability to verbally talk. We are looking at all communication modalities. So, if the person is able to communicate using gestures, pictures, writing, that's OK".

3.5.3. Subtheme 5.3: intervention activities

Intervention activities vary and are tailored to individual needs and strengths. Some activities involve recalling previous routines and tasks related to the profession of PWA, facilitating visualisation and communication.

Kwasi (person with aphasia) - "He tried to make my mind go back to my work. My previous work … I recollect situations that you know I was doing monthly. So, he try to use that to make me come to those things."

Writing activities play a significant role in interventions, with caregivers mentioning assignments given to the PWA, such as writing letters or names. Writing exercises contribute to memory recall and cognitive improvement.

Abla (Caregiver) - "There was one that he was supposed to write a letter to his brother",

Dordor (Caregiver) -, "She writes, my daddy bought her exercise book, so she writes our names. At first, she couldn't even remember her name. As we bought the exercise book for her … now she is able to remember our names and write them."

Other intervention activities encompass naming tasks, reading, and comprehension exercises.

Osei (Caregiver)- "sometimes they give him these drawings, pictures with erm maybe pencil, eraser, then the Speech therapist will point to it for him to mention the name".

Kwamena (Caregiver) – "Reading and playing with cards. And I think the first day she gave us a hard copy of pictures that we should be showing it to her. So that she can remember certain things then.".

3.6. Theme 6: benefit of speech therapy for aphasia

This theme has two sub-themes that delve into the perceived benefits of SLT for PWA. The first subtheme is a comparison between the communication of PWA before and after SLT while the second subtheme throws light on the benefits of SLT as reported by participants from different groups: PWA, caregivers, and Speech therapists.

3.6.1. Subtheme 6.1: communication after therapy

The participants noted improvements in communication skills following speech therapy intervention. Instances of enhanced speech, increased vocabulary, and better responses were noted. Caregivers emphasised the positive changes in their interactions with PWA, indicating a significant impact on daily communication.

> *Kwamena (Caregiver) - "After the therapy started … she started communicating in certain ways like that for some time, yeah. When we started speech therapy. It was very good. She started writing, identifying certain things like cooking".*

> *Osei (Caregiver) - "Initially it was very difficult for him to speak. What he does is 'yes' or 'no' when you ask him a question. He nods or does 'hmmm'. After he started the speech, he started uttering some words. And he can answer some questions and sometimes it flows.*

3.6.2. Subtheme 6.2: person-specific benefits of speech therapy

The PWA acknowledged the substantial benefits of speech therapy, expressing gratitude for the improvement in communication. Responses from the PWA emphasised the rapid progress observed during therapy, surpassing initial expectations. Positive impacts included enhanced pronunciation, improved understanding of situations, and increased morale.

> *Kofi (person with aphasia) - "It is very beneficial. I don't know if I would have gotten better at home … but the therapy helped. When I started the therapy all the people at home realised that the speech was coming. It was a surprise to them that the speech was coming very fast* (recovering rapidly)".

> *Kwasi (person with aphasia) - "Because the therapy have (has), helped me a lot. Now pronouncing things and knowing that you're communicating, it helps a lot."*

> *Kwami (person with aphasia) - "I don't think I would have gotten this better. Not at all. The going helped me."*

Caregivers noted unique benefits, such as the restoration of relationships, alleviation of demands, and the return to normalcy in daily activities. Some described the remarkable recovery of PWA, with some PWA achieving a full restoration of their previous capabilities. The caregivers recognized the role of speech therapy in facilitating communication, reading, and overall 'healing' of the affected brain areas.

> *Abla (Caregiver) - "He was fully recovered, doing everything he previously did. Yes, he was driving, he was going to work and doing all that."*

> *Mawuli (Caregiver) - "It helps the person to speak, to communicate. It has helped us a lot, formerly mommy cannot say a word. Two sessions (in) and (doing) what the lady told us to do, she is getting better".*

> *Osei (Caregiver) - "Yes, it's beneficial to aphasia patients. This is because speech therapy helps the patient in reading and speaking which makes the affected part of the brain to start healing itself".*

Speech therapists highlighted the multifaceted benefits of therapy, encompassing not only direct improvements in communication but also education and support for caregivers. The therapists emphasised the importance of creating awareness and early intervention for better outcomes.

> *Fred (Speech therapist) - "It's not just working with the clients but providing information and education on the condition to the caregivers. It helps them to calm down knowing the progress and progression of the condition."*

> *Rami (Speech therapist) - "So yes, I have seen some of the patients come back and it's almost like they weren't the ones who had the stroke."*

> *Suzy (Speech therapist)- "Yes, it is. We've had some successes, so it is. I think it helps us create some sort of awareness for the family and then the individual who has aphasia. We get to educate them. We get to let people know that there's help if they're able to seek help early, we can intervene early and then we can have better outcomes."*

Overall, the results suggest a consensus among participants on the positive impact of speech therapy in improving communication and overall well-being of PWA.

3.7. Theme 7: improving therapy uptake: referrals and recommendations

Referrals to see Speech therapists usually come from doctors, persons who have benefitted from therapy or their family members. This theme throws more light on referral practices and the preparedness of PWA and their caregivers to recommend others in similar predicaments to undertake speech therapy. This theme is divided into two sub themes.

3.7.1. Subtheme 7.1: increased referrals

The participants highlighted a positive shift in referral practices, particularly by medical doctors. The excerpts indicate that doctors now promptly refer clients with aphasia to Speech therapists, emphasising an increased appreciation for the value of SLT services.

> *Ayi (Caregiver) - "We were referred at the hospital to see the Speech therapist".*

Kusi (Caregiver) - "we were recommended to do the speech therapy by one Dr. Aryee (pseudonym). We went to clinic, yes and he recommended that we should do the therapy".

Ama (person with aphasia) - "I went to the hospital. Yes, at Ridge Hospital, they gave me a letter to Korle Bu".

3.7.2. Subtheme 7.2: willingness to recommend speech therapy

Participants, both the PWA and their caregivers, expressed eagerness to recommend speech therapy to others who have been diagnosed with aphasia. The responses reflect a positive attitude towards the perceived benefits of speech therapy.

Kusi (Caregiver)– "I'll recommend it to anyone, anytime."

Kofi (person with aphasia)- - "Oh I will, I would suggest that they go to therapy."

Kwami (person with aphasia)- "Yes. They should attend speech".

Akweley (Caregiver) – "I'll tell them to go and see speech".

4. Discussion

The overarching aim of this study was to explore benefits of SLT interventions towards the restoration of communication from the perspectives of PWA and their caregivers. Additionally, we sought to shed light on the role of Speech therapists and the intervention strategies they used to help PWA reach their full communication abilities. The questions we set out to answer are individually discussed in the subsequent sections. Expectedly, the interviews brought to light the indispensable role families play in the recovery process of PWA. Added to the intentionality of techniques employed by Speech therapists, our study dispels existing notions that Speech therapists in developing countries are more occupied with issues of assessment than with therapy [22].

4.1. Perceived benefits of speech and language therapy interventions

Our findings suggest that PWA and their families consider SLT interventions beneficial. PWA and their caregivers in this study indicated how SLT interventions were instrumental in PWA's ability to engage in functional communication with their caregivers. This was demonstrated in PWA regaining their ability to comprehend language, write, read, and communicate through speech. This confirms previous studies that have provided evidence of SLT's effectiveness in improving measures of functional communication, receptive language, and expressive language in stroke survivors with aphasia [23,24].

The findings of this study suggest that the benefits of SLT interventions go beyond improving PWA's capacity for communication and extend to enhancing their quality [23,25]. PWA shared how aphasia had negatively impacted their ability to engage in social interactions, carry out household tasks, maintain their finances, and limit their ability to work for a living. Thus, PWA attested to the positive impact of restored communication after attending SLT, suggesting an improved quality of life based on domains such as health, social participation, independence, communication, and environmental factors [26]. Generally, speech therapists regard it as standard practice to provide interventions that foster social participation, with the expectation that this will positively influence other domains integral to the assessment of quality of life [22,23]. These improvements however are often not systematically measured by the Speech therapists due to the absence of specific tools designed to evaluate quality of life in Ghana as is the case in other African countries [27]. This gap highlights the need for developing and validating assessment tools that are culturally relevant and can accurately measure the broader impacts of SLT interventions, including emotional and psychosocial well-being [28].

It is important to recognise that the absence of standardised measurements by therapists does not imply a lack of improvement in the quality of life for PWA. This assertion is supported by reported benefits from PWA in this study, which are substantiated by several other studies [29–31].

4.2. The role of speech therapists in improving the communication abilities of people with aphasia

Speech therapists have a variety of responsibilities throughout the rehabilitation of PWA, a few of which were highlighted in our findings. Firstly, Speech therapists play the role of an educator, which includes educating clients and the client's family on aphasia, its causes, and recovery trajectory. In this study Speech therapists confirmed that the education they provide to families and PWA, puts them at ease to focus on the therapy which leads to improved outcomes as similarly reported by others [32].

Secondly, Speech therapists help people cope with post stroke aphasia by offering the family emotional support and counselling in their own unique ways. One individual with aphasia commented that he felt encouraged going for SLT because the Speech therapist understood what he was going through and gave him encouragement. Additionally, by improving the family's understanding of aphasia the stress on PWA and their caregivers can be reduced as confirmed in Refs. [29,33]. Aphasia frequently results in emotions like frustration, disbelief, rage, or sadness, which raises concerns about the ability of PWA to engage in normal daily activities and social interactions [6]. As a result, it's critical to provide emotional support to all aphasia patients, not just those who have been diagnosed with depression.

Lastly, Speech therapists revealed they often must train family members on their new roles in the lives of PWA. Family involvement in communication rehabilitation is crucial to foster supportive relationships that enhance communication, boost self-esteem, and

increase confidence of PWA [34]. Therefore, Speech therapists play a vital role in training family members on effective communication strategies with PWA and teaching them communication skills to facilitate interactions with them [35].

4.3. Intervention strategies speech therapists used to help people with aphasia reach their full communication abilities

The impairment-based approach and the functional communication-based approach are the two intervention approaches used in aphasia therapy [8]. Most Speech therapists concentrate on social participation or functional communication using impairment-based strategies just like the Speech therapists in this study [36]. They disclosed that their main goal for PWA was to increase their social participation (functional communication). However, they worked toward this goal by implementing strategies that are adapted from the impairment-based approach. Therefore, by reducing limitations in linguistic performance, functional communication is promoted, and social participation of PWA is improved. It has been argued that none of these approaches is better than the other, and the ideal aphasia therapy program would consider each of these approaches to give PWA a chance to participate in treatment at various levels [36].

Speech therapists also revealed their use of informal tools in assessment and therapy like the Ghana Aphasia Assessment Tool (GHAAST) which though not standardised is contextually relevant. It emphasises the biopsychosocial framework of the World Health Organization's (WHO, 2002) International Classification of Functioning, Disability, and Health (ICF). Many standardised aphasia assessment tools are designed for English speakers and may not effectively evaluate multilingual individuals, as commonly found in Ghana. The content and context of these assessments often lack cultural relevance or familiarity c for the Ghanaian population. As such, simply translating these tools often misses the nuances of the target language, leading to inaccurate assessments [37]. Additionally, many of these tools assume a certain level of familiarity with specific cultural references, which may not be applicable in Ghana, resulting in erroneous outcomes [28].

4.4. Family support goes a long way to make interventions beneficial

The Speech therapists in this study emphasised the importance of family involvement in continuing therapy activities and exercises outside structured sessions. Our findings agree with the literature that families are the most crucial rehabilitation partners throughout the entire therapy process [24,29]. Without the help of family, PWA's pace of recovery would be incredibly slow or unlikely. For example, due to financial restrictions, PWA do not receive professional therapy as often as is ideal. In Ghana, SLT services are offered through both public and private healthcare providers. Unfortunately, SLT services are not included as part of the national health insurance scheme [38]. Consequently, clients in both the public and private sectors typically pay out-of-pocket for these services, with costs varying widely depending on the provider and specific services required. To work around this, caregivers are typically trained to practise the intervention activities with PWA. This is known to yield similar results as they would have if the client had been practising with a Speech therapist [39].

Aside from being a conversation partner, the emotional support that family provides to PWA assists in motivating them to work hard to regain communication skills. Our findings suggest that, in terms of daily activities, family also serves as the functional support system for PWA. This includes driving them to therapy appointments and helping them around the house. This multidimensional role of family in the intervention and recovery process has been reported in other studies, underscoring the need to encourage relatives to participate in the therapy sessions of PWA [24,29]. By doing so, relatives have the chance to observe as the Speech therapist works with PWA. The family member can then carry over what they've observed in the clinic at home with the PWA thereby reducing the time and resources spent on therapy.

5. Clinical implications

Based on the findings of this study, Speech therapists could consider incorporating measures of quality of life in their interventions. This may raise the need for additional training to identify the most effective therapeutic approaches that enhance PWA's quality of life as perceived by the PWA. By doing so, the PWAs specific needs are met.

Additionally, integrating the success stories of PWA into the healthcare system could encourage new patients to engage in therapy. This could take the form of support groups or lived experience experts. To facilitate this, specific training programs targeted at the caregivers of PWAs should be considered as a standard practice. This is because all Speech therapists in this study acknowledged the vital role that caregivers play in supplementing the services provided by specialists.

Beyond this, there is a need to systematically investigate and standardise interventions employed in Ghana. This is important to grow the field and design targeted interventions based on research.

Finally, a coordinated and more in-depth study on the benefits of SLT interventions for PWA across multiple sites in the country could be carried out. This is because, outside of the capital where this study took place, the demographics and dominant language becomes even more diverse. Additionally, a longitudinal study could be incorporated to track the long-term benefits of SLT for PWA.

6. Limitations

We are mindful that the generalisability of this study is impacted by the small sample size of seven PWA and their caregivers. Therefore, the results should not be interpreted as representing the views of the entire population of PWA and their caregivers in Ghana. It is pertinent to acknowledge the potential for bias in the responses provided by PWA and their families, stemming from a

perceived pressure to express positivity regarding SLT. This potential bias may have arisen due to the primary researcher's identity as a Speech therapist in training. Another limitation is the lack of information on the time post-onset of each participant. We agree this detail is necessary to grasp the backgrounds of the participants and the potential impact on the study's findings. Future research will aim to collect and report this information to provide a clearer context for the therapy outcomes.

7. Conclusions

Overall, our findings suggest that PWA and their caregivers perceive SLT interventions to be beneficial to their communicative abilities. The study also revealed that Speech therapists target the cognitive linguistic difficulties of their clients by providing interventions that seek to improve their life participation. Hence, they design interventions around things relevant to their clients and their caregivers. Despite the absence of standardisation, this approach has proven successful over the years and may be unique to countries in a similar developmental stage to Ghana as far as SLT is concerned. Worthy of note is that the role of the family in the rehabilitation process was deemed crucial to yield more positive outcomes. In addition, the study supports the prevailing notion that aphasia has a profound and negative impact on the quality of life of PWA and their families, even though formal measures need to be incorporated into assessments. Finally, those who experienced SLT are likely to recommend it and so this must be leveraged on to improve the uptake of SLT services in countries where the profession is still in its infancy.

CRediT authorship contribution statement

Grace Larweh: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Abena Asiedua Owusu Antwi:** Writing – review & editing, Methodology, Formal analysis, Data curation, Conceptualization. **Ewurama Ampadu Owusu:** Writing – review & editing, Supervision, Project administration, Methodology. **Thomas Amatey Tagoe:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Conceptualization.

What is already known

- Studies from developed countries have provided evidence of speech and language therapy intervention's effectiveness in improving measures of functional communication, receptive language, and expressive language in stroke survivors with aphasia.
- There are many countries where speech and language therapy is a recent addition to the healthcare system with no evidence alluding to the intervention's effectiveness.

What this paper adds

- This paper describes the benefits speech therapy intervention provides as perceived from the point of view of people with aphasia and their family in a low-middle income country where speech therapy is a recent addition to the healthcare system.
- This paper sheds light on the techniques Speech therapists in Ghana employ to provide intervention for people with aphasia.
- This paper reports that Speech therapists consider family members of people with aphasia as an indispensable support, such that without the presence and help of family, people with aphasia's pace of recovery would be incredibly slow or unlikely.

Declarations

This study was reviewed and approved by the Ethical and Protocol Review Committee of the School of Biomedical and Allied Health Sciences at the University of Ghana with the approval number: SBAHS/AA/ASLT/10417716/2021–2022, dated September 15, 2022.

During the preparation of this work the authors used Microsoft Copilot in order to improve grammar and readability. After using this tool/service, the author(s) reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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Appendix 1

Interview Guide Used During Semi-Structured Interview

For People with Aphasia
● What was the age of aphasia onset? ● How was communication before therapy began? ● How did you feel during those times of communication difficulty? ● What did your SLT tell you about your condition and did you understand your condition? ● What were your expectations before therapy began and were they met? ● How many sessions did you go to? ● Which aspects of your life were most affected by aphasia and what did it do to your quality of life (work, relationships, finances, mental health, community life, isolation)? ● Do you think SLT is beneficial? ● How has your life improved or gotten worse after therapy? ● Do you think you would have recovered without SLT? ● Are you likely to refer someone in a similar condition to attend SLT? If **yes**, why? If **no**, why not?
For Family Member
● How were you communicating with your family member before therapy began? ● What did the Speech therapist tell you about your family member's condition? ● What were your expectations before therapy began? ● What would you say is the role of family in the therapy process? ● Describe a typical therapy session. ● How is communication now with your family member? ● Would you say SLT is beneficial and if so, to what extent?
For Speech Therapist
● What are the types of aphasia you are aware of? ● What would you say is the goal of aphasia therapy? ● Do you use any formal tools for assessment? ● How do you assess quality of life pre and post therapy? ● What are the interventions you use in your line of work? ● What do you suppose is the role of family in the intervention process? ● How often is therapy held with your clients and how do you track progress? ● Would you say SLT is beneficial and if so, to what extent?

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