

How to improve communication ability in a person with stroke disease?

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Table of Contents

Abstract	3
Introduction	4
Literature Review	5
Research Questions	8
Question 1	8
Question 2	9
Question 3	9
Methodology	10
Sample	10
Data collection	10
Data analysis	11
Result	11
Conclusion	11
Limitation	12
Future directions	12
References	13
Reflection	15
Appendix	16
Figures #1: Questions responses	16
Figures #2: Histograms for each question	18
Figure #3: Communication after the activities Vs before the activities	19

Abstract

In home practice to improve communication and engagement in different activities. The target learner is a 71-year-old man with a stroke disease. Researchers communicate through Zoom meetings virtually and share the reports in Google Docs. They improved the performance of activities and gathering data. A Quantitative Likert Scale was obtained for both parts of all three questions. The patient has a strong interactive communication when talking to his relatives. Cognitive training through activities slightly improved the patient's communication ability, which is a positive outcome to follow-up.

Introduction

A stroke occurs when there is a lack of blood supply, or the blood supply is interrupted to part of your brain preventing the brain from receiving oxygen. Within minutes brain cells can die due to a lack of blood supply. The effects from a stroke can vary depending on how quickly the patient receives medical attention. Complications from a stroke may include paralysis on one side of your body or face or lack of muscle movement. Patients may also have trouble talking or communicating. A stroke can affect control of the muscles in an individual's mouth making it difficult to swallow. The American Stroke Association states that stroke is the #5 causes of death and the leading cause of disability in the United States. Below, on the left, is a picture of the type of stroke that Muhammad suffered. On the right, the most important symptoms that a person has at the time of stroke.



(Figures: American Stroke Association, n.d., 2021)

“Fatty deposits lining the vessel walls, called atherosclerosis, are the main cause for ischemic stroke.” (American Stroke Association, 2021). The effects caused by a stroke depends on the area of the brain affected by the loss of blood flow. One side of

the brain controls the opposite side of your body. If you have a stroke on the left side of the brain, the right side of the body will be affected and will cause speech and language problems.

The priority of this action research is to provide some evaluation that caregivers can work with the patient to improve his communication ability after a stroke. This research will discuss a 71-year-old male who suffered a stroke and has difficulties communicating. This paper will share ways to communicate with the individual by asking three questions on his engagement while watching movies, listening to music and by video phone. Asking him to sing with the caregiver, a song that he knew, was the starting point. Examining different types of music and continuing to measure, when the caregiver is no longer involved in the activity, developed methods for this step. Researchers measured his communication ability by engaging him in different activities and by absorbing the effect of the activities on his speech over time. Researchers shared their thoughts and feelings through weekly Zoom meetings and applied their objective analyses to the next step.

Literature Review

Creating communication channels through social media is common these days: Facebook groups, messaging groups, SnapChat, Instagram, or other interfaces. "What we currently understand connected learning to be is limited to a combination of individual interests, networked and interdependent relationships with interconnected experiences that transcend temporal, spatial and cultural boundaries" (Prestridge et al.,

2021, p. 2171). It is important for the learner to enjoy their time and develop their communication within their community. Facebook and Instagram are two interesting communication apps that people who have suffered from a stroke might be able to use and enjoy the environment. In this action research, we are using WhatsApp to have a video conference with the patient's close family members.

Learning with action and experience might be a better instructional tool to improve communication skills. "Just as challenging, learning from experience in a collective setting recognises that people learn from and co-construct ideas with their peers" (Reynolds, 2011, p.6). Asking the patient to participate in various activities will be a good tool for communication and reflection practice. In this study, watching movies and TV shows is a good way to ask questions about them.

Virtual reality training and assessment is increasingly used for five key areas: medical, industrial & commercial training, serious games, rehabilitation, and remote training such as Massive Open Online Courses (MOOCs) (Vaughan, Gabrys, Dubey, 2016). Virtual activity needs more of an individual focus to access the process to receive learning skills, but at the same time it will allow people with disabilities to use some good learning tools and to reach some communicational component.

Acute and chronic mental stress can play an impact on causes of stroke in individuals. There is an evident association between both acute and chronic emotional stress and risk of stroke. A person with stroke disease has the risk of exposure to another stroke (Kotłęga et al., 2016). Using the American Medical Association Caregiver

Self-Assessment Questionnaire (CSAQ), an easy-to-use screening method, has been proposed to diagnose symptoms of sensitive depression. Recognizing the symptoms of depression and preventing a period of major depression is essential for caregivers under chronic stress, especially in caring for a person with dementia (Epstein-Lubow, et al., 2010). Self-administered questionnaires are available to assess the severity of depression, in some cases short-term measures may be desirable (Kroenke, Spitzer, & Williams, 2003).

For self-assessment, the Mobile Health app is an accessible tool that allows caregivers to expand their care and easily access healthcare providers. Caregivers are allowed to use these programs to save time and money and dedicate their time to themselves (Chang et al., 2018). In addition, mobile apps can be used for better performance, and compatibility. In this way, information for different assumptions is easily obtained and analyzed.

Stroke has different effects in various patients. Everyone with stroke disease should be examined individually and receive specific attention. Using technology is very helpful to restore the ability to communicate with persons paralyzed or who suffered a stroke. The patient with anarthria and spastic quadriparesis caused by a brain-stem stroke, words and sentences were decoded directly from cortical activity during attempted speech with the use of deep-learning models and a natural-language model (Moses et al., 2021).

Apraxia of Speech (AOS) and aphasia are associated with brain injuries. AOS probably occurs with aphasia due to the proximity of the areas of the brain that support speech and language, but it is different for each patient biologically (Basilakos et al., 2015). Action research is useful for focusing on a person who has had a stroke and is suffering from a speech disorder. A good film of improvement in a person with stroke disease by conducting cognitive instruction of music was the inspirational starting point of this action research: <https://youtu.be/7JkTtj00CXw>.

Research Questions

People have variable relationships that change by their situation. Researchers started to absorb the quality of engagement of the patient in communication with others. When and who would be more in companionship around him. After a while, examinations of different activities started. Researchers collaborated on preparing some questions to gather more data. Three questions were prepared, each including two parts. A quantitative method was identified for an easy data analysis in a short time. The Likert Scale in this Action Research is a scale of one to five, one poor and five strong, which was applied to both parts of all three questions.

Question 1

In which level the communication through WhatsApp video calls and phone calls have an impact on the patient's conversational ability?

The patient was engaged in communication when his brothers or sisters talked to him over the phone. He was more involved and excited when the connection was through the WhatsApp video call, which allowed the patient to see his brothers and sisters and recognize them better.

Question 2

In which level does the communication through watching Movies and TV shows have an impact on the patient's conversational ability?

The patient watches TV most of the time, so researchers started to ask him some questions to involve him in some communications about the TV shows. He could talk about movies more than TV shows, and even more about series. He could remember more and say more words.

Question 3

In which level the communication through singing classical and pop music have an impact on the patient's conversational ability?

The patient does not sing without being asked. Researchers started to involve him to sing different types of music. He sang when the researcher sang with him. He could sing some parts; it was hard for him to say specific parts repeatedly. Pop music was easier for him because its sentences were shorter.

Methodology

Researchers are familiar with stroke disease and how it affects the patient's life. They focus on a man who has a stroke. Mohammad does not speak often. He prefers to answer yes or no questions. He even prefers to say his short answers by moving his head or hands.

Sample

A 71-year-old man with a stroke disease, who cannot speak the same after the stroke. He was very active prior to the stroke. He does not have the ability to move as usual, walks slowly, cannot speak fast, and the voice has changed. His memory is not the same. His long-term memory seems better than the short-term memory.

Data collection

Researchers communicate on the Zoom meeting virtually. Reports were shared via the Google docs to be accessible for both. They had access to all the examination questions and results to absorb better and transfer new ideas to apply in the process and future resumption. Mohammad has had the stroke for more than 13 years now. Right after the stroke happened, he had his Pathology and Physiotherapy. He had post stroke speech therapy in the early years of his stroke. Some days he can speak more accurately. He has muscle weakness, so he cannot talk properly, and his voice has been changed. Mohammad's relatives try to speak with him and ask him questions, and he hardly tries to speak better.

Data analysis

Researchers used google forms to create some qualitative questions and apply them for different types of activity to develop a good place to communicate at home. He is more engaged in video calls individually. He could remember movies and series mostly. He could sing music that contained shorter sentences, but he often got tired.

Result

After a while, when researchers stop being involved in patient daily activities, his communication is similar as before with a very little improvement. He is interested in talking to people whom he can remember more. He answers questions about movies and TV shows as short as possible, or not answering. Researchers agreed on the result that even though it is not too different but a little of difference was a lot for them to take advanced steps.

Conclusion

Researchers recognized that collaborating on any steps provided new ideas to apply in the project. They improved the performance of activities. The patient has a strong interactive communication when talking to his brothers and sisters. He asks questions and listens carefully to the conversations. Cognitive instruction would bring more improvement in his communication ability. The improvement in the steps of gathering data by applying new activities was conducted by collaborating. The new ideas were challenging for the researchers and fascinating for the patient.

Limitation

Time was the main limitation. More activities are needed and more repetition. One of the researchers lives in Los Angeles and the other lives with the patient at San Jose. Long distance and pandemic actuate them to collaborate through Zoom meetings or phone calls.

Future directions

In this action research the focus was on Mohammad's communication ability. More samples would indicate a better conclusion to benefit from the research. The quantity of activities was limited. These activities should be repeated over time to be more effective. This research would be more reliable to be reviewed by professionals in the medical field.

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Reflection

Action research on the qualitative side has a good potential of a deeper study. This collaborative research covered two topics, stroke, and communication. Some issues have been solved in weekly Zoom meetings, and more new ideas and good contents were pointed out to be considered during the study. The result of the activities showed little improvement that is a good sign for the future activities.

Appendix

Figures #1: Questions responses

Responses cannot be edited

Activity

Examine the patient communication via various activities:

*** Required**

Name of the activity: *

Communication through WhatsApp video calls

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/25/21, 2:02 AM

Responses cannot be edited

Activity

Examine the patient communication via various activities:

*** Required**

Name of the activity: *

Communication through WhatsApp phone calls

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/25/21, 2:02 AM

Communication Ability in a Person with Stroke Disease

Responses cannot be edited

Activity

Examine the patient communication via various activities:

* Required

Name of the activity: *

Communication through watching Movies

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/26/21, 9:07 AM

Responses cannot be edited

Activity

Examine the patient communication via various activities:

* Required

Name of the activity: *

Communication through watching TV shows

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/26/21, 9:09 AM

Communication Ability in a Person with Stroke Disease

Responses cannot be edited

Activity

Examine the patient communication via various activities:

* Required

Name of the activity: *

Communication through singing Classic Musics

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/25/21, 5:17 AM

Responses cannot be edited

Activity

Examine the patient communication via various activities:

* Required

Name of the activity: *

Communication through singing Pop Musics

1. On a scale of 1 to 5, how do you score the patient's communications skill before the activity? *

Poor 1 2 3 4 5 Strong

2. On a scale of 1 to 5, how do you rate the patient's willingness to engage in the activity? *

Poor 1 2 3 4 5 Strong

3. On a scale of 1 to 5, how do you score the patient's communications skill during the activity? *

Poor 1 2 3 4 5 Strong

4. On a scale of 1 to 5, how do you score the patient's communications skill after the activity? *

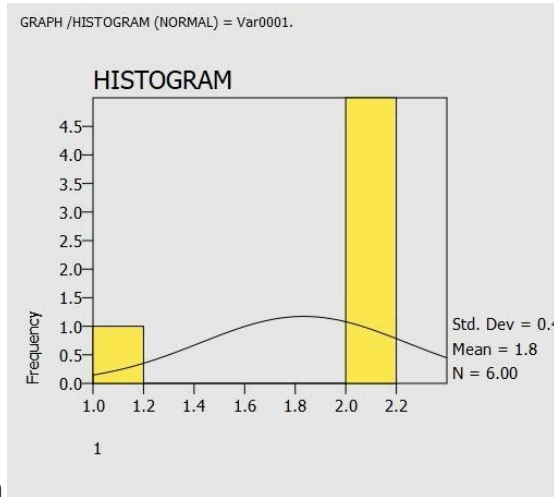
Poor 1 2 3 4 5 Strong

5. On a scale of 1 to 5, how do you rate the patient's willingness to perform the activity continuously? *

Poor 1 2 3 4 5 Strong

Submitted 11/25/21, 5:12 AM

Communication Ability in a Person with Stroke Disease



Figures #2: Histograms for each question

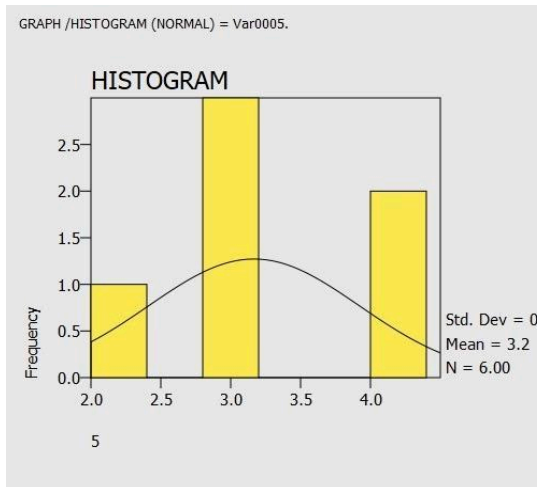
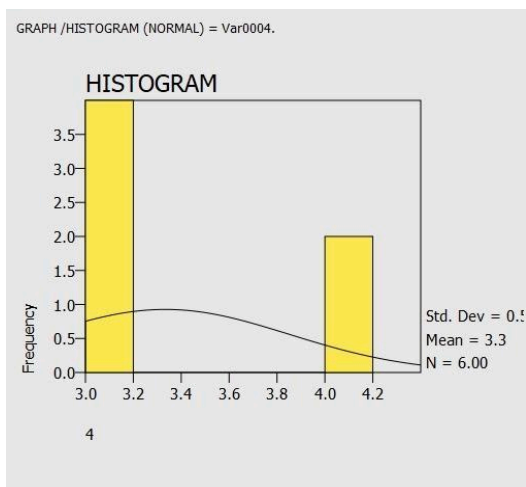
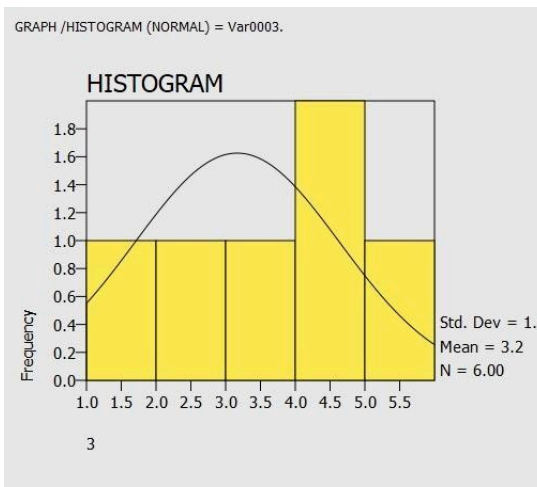
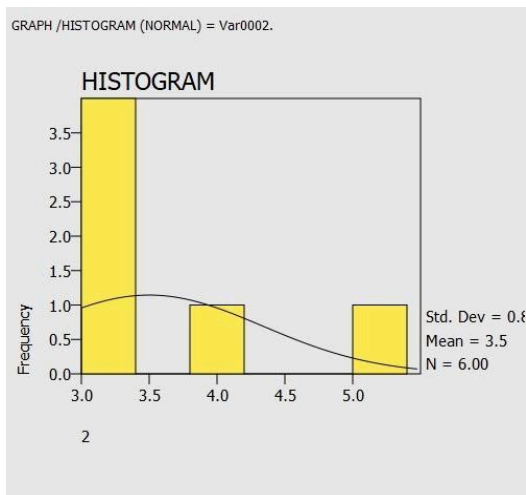
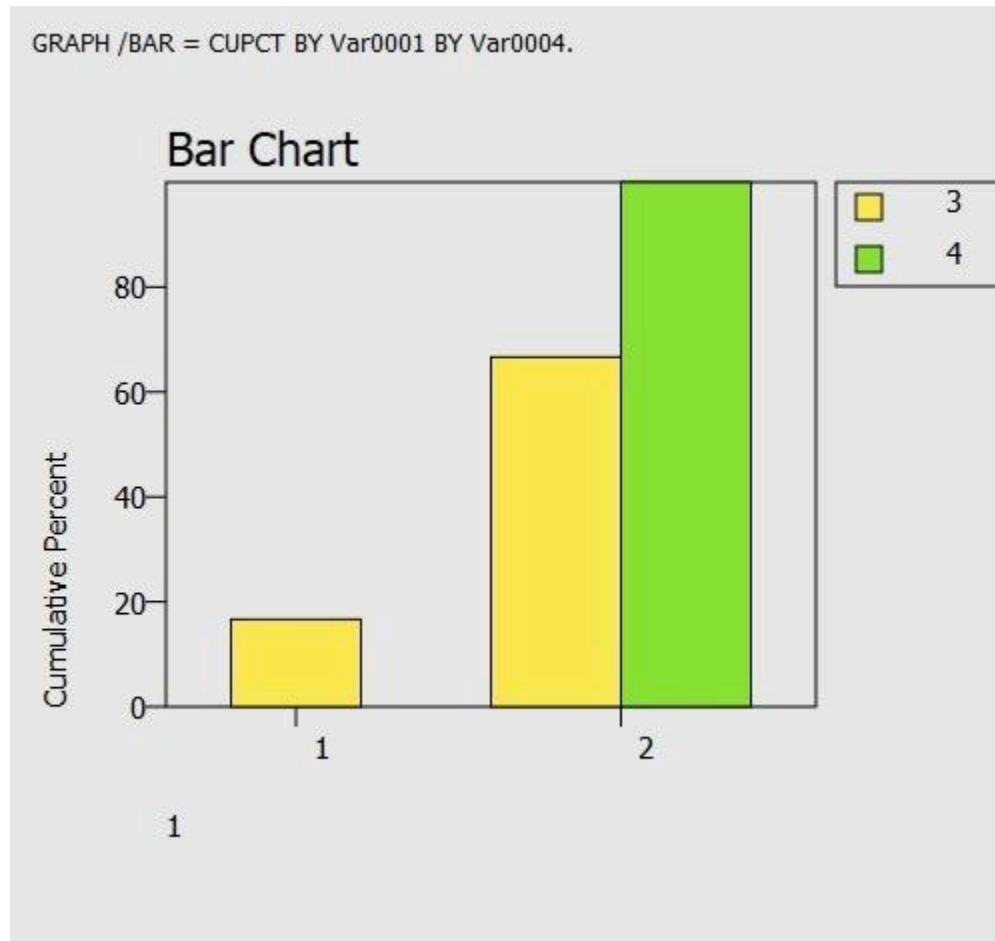


Figure #3: Communication after the activities Vs before the activities



Thank you.