

## **Analysis of Stroke**

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Across the world, stroke is a prominent disease that causes disability and death. Your brain is a highly vascular organ. During a stroke, one of these blood vessels becomes occluded or bursts and blocks the normal blood flow through the brain from happening. Symptoms can arise as blurred vision, muscle weakness, and slurred speech. Depending on how fast someone gets treatment for these symptoms determines their prognosis. Since time is key in the diagnosis of stroke, education on early recognition, stroke symptoms, and preventative lifestyles can help decrease the regularity of strokes in a community.

## **Statement of the Problem**

Cerebrovascular accidents can be classified as ischemic or hemorrhagic. Ischemic strokes happen when a blood vessel in the brain becomes obstructed. “The obstruction is most often thrombotic and can form at atherosclerotic plaques in the cerebral arteries or can embolize from more distant locations, such as the heart and carotid arteries.” (Anthony, 2021).

Hemorrhagic strokes happen when a blood vessel in the brain ruptures and causes intracranial bleeding. The rupture can result from tumors or cerebral aneurysms (Anthony, 2021). A transient ischemic attack, also abbreviated as a TIA, is not classified as a cerebrovascular accident but still has the characteristics of a stroke. A person will have the same symptoms but disappear after a short period of time. This is known as a miniature stroke and still needs the same prompt medical attention since it can indicate a near-future stroke. The rupture or blockage of a blood vessel usually happens in the right or left side of the brain. Depending on where the incident occurs shows on only one specific side of the body. For instance, if the blockage is on the right side, you will see left-sided symptoms, and vice versa. These symptoms can range from visual disturbances, slurred speech, imbalance, muscle weakness, and numbness. Certain factors

increase the risk of a cerebrovascular accident happening. Risk factors include hypertension, hyperlipidemia, smoking cigarettes, excessive alcohol consumption, obesity, physical inactivity, drug use, diabetes mellitus, and obstructive sleep apnea (Naveed, 2024).

“Time is brain” is a phrase used to represent the importance of identifying symptoms of stroke and receiving medical attention promptly to help reduce mortality and disability (Leona, et al. 2021). Upon early arrival of stroke symptoms into a healthcare facility, medical professionals can implement lifesaving treatment measures. However, with early recognition of risk factors, strokes can be prevented altogether. Physical activity, eating a low-salt and low-fat diet, and cessation of excessive drinking or smoking can cut down the risk of stroke by 80% (American Stroke Association, n.d.). When educating the community on stroke, it is important to include these risk factors since they are modifiable through lifestyle changes.

Every 40 seconds someone in the United States experiences a stroke (Center for Disease and Prevention, 2024). Additionally, it is estimated that 795,000 people have a stroke each year with 610,000 of those strokes being first-time incidents (Center for Disease and Prevention, 2024). With most strokes being first-time cases, this emphasizes modifiable risk factors. By encouraging the community to have regular check-up appointments with a provider, the modifiable risk factors can be identified, and lifestyle changes can be made early. Following this, one out of six cardiac disease deaths is related to stroke in the United States (Center for Disease and Prevention, 2024). This highlights the relationship between cardiac health and stroke. One major cardiac risk factor for strokes is hypertension, which can be prevented through regular physical activity and eating balanced meals.

When strokes are left untreated, this can create many problems across the nursing community such as nursing burnout and hospital systems paying an increased amount for

treatment of strokes. Stroke patients can require a higher level of care and close monitoring. They will be high fall risks due to their one-sided weakness and may be difficult to interact with due to their dysphasia. Nurses can experience high levels of stress due to this “Sources of stress included work performance anxiety (e.g., fear of errors), workload burden/conflicting demands, and family/physician interactions” (Saramago, et al. 2020). Another concern with untreated strokes is the cost effect on hospital facilities. Across the United States, it is estimated it costs 34 billion to treat strokes (Khan, et al. 2021). This leaves less spending money for the hospitals where they may have to increase hospital costs to compensate. This can deter people from reaching out for medical care from the start.

### **Risk Reduction/Treatment of the Problem**

Strokes can overall be prevented through a healthy lifestyle, controlled blood pressure, and regularly scheduled appointments with your primary healthcare provider. A healthy lifestyle includes a balanced diet, a healthy weight, regular physical activity, smoking cessation, limitation of alcohol, and medication adherence (Center for Disease and Prevention, 2024). Additionally, it is important to check your labs and blood pressure routinely with the checkup appointments. With labs, high cholesterol levels can be a major risk factor for stroke (Center for Disease and Prevention, 2024). High cholesterol affects arteries and leads to a disease called atherosclerosis, which is a fatty plaque buildup along the arterial walls. This plaque can eventually break off and become a blood clot that flows to the brain or become fully obstructed and cut off oxygen supply to the brain. By going to regular checkups, your primary provider may prescribe medications that help decrease these risk factors. These medications can help decrease blood pressure, decrease the viscosity of your blood, and decrease the amount of bad cholesterol in your body.

But once a stroke occurs, there are certain medications that a provider can give to deliver life-saving treatment. Activase, also called tPa, and Tenecteplase, also called TNKase are both medications that help break up a clot to promote blood flow and are the gold standard treatment for stroke (Mayo Clinic, 2024). The quicker these medications are administered; the better outcome is for the patient after stroke. Emergency surgeries can also be done to open the artery or stop bleeding. An angioplasty with a stent can be done for ischemic strokes to open the artery. For hemorrhagic strokes, an endovascular embolization puts tiny coils where the rupture is to stop the artery from bleeding and causes clotting at the site (Mayo Clinic, 2024). Once the blockage or rupture is treated, it is important to start treating the symptoms that occur post-stroke. The overall goal is to regain as much bodily function to return to baseline. Weakness usually occurs unilaterally and can cause impairments in swallowing, speech, movement, and fine motor skills(Mayo Clinic, 2024). Speech pathologists, physical therapists, and occupational therapists are all expected to be a part of the care for stroke patients to get them as close to baseline as possible.

Healthcare professionals can use specific screening protocols when a person comes in with stroke-like symptoms. These include the BEFAST acronym, Stroke Risk Assessment, and NIHSS Stroke Scale. BEFAST is a quick way to remember stroke symptoms such as balance, eyes, face, arms, speech, and time. Stroke risk assessment helps identify specific risk factors in an individual's life to help promote healthy changes (American Stroke Association, n.d.). NIHSS stroke scale is a screening used to assess the severity of stroke through categories for movement and speech.

### **Teaching**

Throughout the community health poster on stroke, it is important to set objectives for the learner. These objectives will be that the learner can state two different risk factors of stroke and three different symptoms of stroke by the end of the presentation. To obtain these objectives, my group will use a variety of teaching strategies. This includes making sure that all medical terms are explained at a sixth grade reading level to promote comprehension. We will also use graphics to adhere to all learning styles. These graphics will include the BEFAST acronym and the arteries appearance during an ischemic and hemorrhagic stroke. Teaching tools will also be used throughout the presentation. The learners will receive handouts at the end to take home with them. The handouts will be educational documents on symptoms and risk factors for stroke. Another teaching tool will be using a diaphragm about the risk factors of stroke and how likely they are to cause it. Organizing the presentation by objectives, teaching tools, and teaching strategies will ensure the learner is obtaining the most information about prevention against strokes.

### **Conclusion**

In closing, stroke is a life-threatening disease that needs to be treated promptly to reduce abnormal body function post-stroke. Education on early recognition, stroke symptoms, and preventative lifestyles, can help decrease the regularity of strokes in a community. Evidence-based practice for strokes shows that changing unhealthy lifestyle practices early helps decrease the prevalence of stroke. It also shows that early screenings such as the NIHSS Stroke Scale can help determine the extent of strokes quickly and accurately. During the community health poster, the learner will be able to state two different risk factors and three different symptoms of stroke. Utilizing education to the community can help decrease the occurrence of stroke and save lives.

## Resources

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