Determinants of Recurrent Stroke Incidence in a Clinical Sample

Critical Thinking Group 3

Data 621

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**Abstract**

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Stroke incidences are a serious and debilitating phenomenon that is the leading cause of death for Americans and affects an estimated 795,000 Americans each year (World Health Organization, 2023). In terms of demographics, the risk of stroke tends to increase with age and with the presence of high blood pressure, high cholesterol, obesity, diabetes, and smoking. Furthermore, stroke tends to disproportionally affect individuals based on race and ethnicity, with the likelihood of a stroke in Black adults being twice as high compared to White adults, highlighting a clear systematic disparity.

These medical emergencies are characterized by interference in cranial blood flow, resulting in a variety of symptoms, including lateral numbness, confusion, speech deficits, mobility difficulties, severe headache, the loss of consciousness and even death (ICD10, 2024). In addition, depending on the severity, the presence of a stroke can result in long-term deficits, including permanent disablement. Importantly, the long-term risks associated with stroke are exacerbated by the fact that stroke survivors face double the risk of stroke recurrence within 10 years following the first incidence (Ravinder-Jeet et al., 2018).

Despite the clear importance of recurrent stroke regarding clinical outcomes, there is presently a dearth in the literature surrounding the prognosis of recurrent stroke (Ferrone et al., 2022). However, a meta-analysis of 9 studies regarding stroke outcomes by Ferrone et al. (2022) indicated that three studies reported on mortality rates; one of which reported a 25.9% mortality rate for in-hospital and hospice occurrences (Shah et al., 2020, as cited in Ferrone et al., 2022). Two other studies reported mortality rates of 20.6% 30 days following the incidence of a recurrent stroke and 11.6% 4 years following the occurrence of a recurrent stroke (Albright et al., 2018; Engel-Nitz et al., 2010; as cited in Ferrone et al., 2022). Finally, Albright and colleagues found that only 11.3% of recurrent stroke patients reported disability-free outcomes. Although more research is needed regarding these outcomes, it is clear that recurrent stroke is a debilitating public health issue that requires attention in terms of delineating factors associated with prognosis, risk, and, importantly, prevention.

Identifying risk-factors and preventative measures for recurrent stroke can be particularly difficult, as strokes are not homogeneous in nature. Indeed, stroke incidences can present as a variety of subtypes with differing risk-factors and, by extension, differing preventative measures to combat onset (Kolmos, Christoffersen & Kruuse, 2022). For instance, although the presence of diabetes mellitus (DM) is presumed to be a primary risk-factor for stroke recurrence, some evidence suggests that it may only be a risk-factor for recurrent cardioembolic (CE) stroke subtypes (Kolmos et al., 2022). On the other hand, white matter hyperintensities (WMH) present as a risk-factor for all stroke types except recurrent CE and lacunar infarct (LI) subtypes. Conversely, other factors, such as smoking, hypertension, age, and a history of prior stroke or transient ischemic attack (TIA) are general risk-factors for all stroke subtypes.

It is clear that recurrent stroke is a public health issue that requires further study and documentation regarding both risk-factors that can result in the onset of recurrent stroke, as well as long-term outcomes in terms of disability and mortality. The purpose of this study is to examine the potential risk-factors of recurrent stroke onset, and the outcomes of recurrent stroke within a clinical sample. We predict that [insert prediction here] based on [insert reasoning/literature support here].

**Methods**

**Sample**

**Measures**

**Procedures**

**Analysis**

**Results**

**Discussion**

**Conclusions**

**Limitations**

**References**

*2024 ICD-10-CM Diagnosis Code I63.9: Cerebral infarction,* ICD10Data. (2024). <https://www.icd10data.com/ICD10CM/Codes/I00-I99/I60-I69/I63-> /I63.9#:~:text=2024%20ICD%2D10%2DCM%20Diagnosis,9%3A%20Cerebral%20infar ction%2C%20unspecified

Albright, K. C., Huang, L., Blackburn, J., Howard, G., Mullen, M., Bittner, V., ... & Howard, V. (2018). Racial differences in recurrent ischemic stroke risk and recurrent stroke case fatality. Neurology, 91(19), e1741-e1750.

Engel-Nitz, N. M., Sander, S. D., Harley, C., Rey, G. G., & Shah, H. (2010). Costs and outcomes of noncardioembolic ischemic stroke in a managed care population. Vascular health and risk management, 905-913.

Ferrone, S. R., Boltyenkov, A. T., Lodato, Z., O'Hara, J., Vialet, J., Malhotra, A., ... & Sanelli, P. C. (2022). Clinical Outcomes and Costs of Recurrent Ischemic Stroke: A Systematic Review. Journal of Stroke and Cerebrovascular Diseases, 31(6), 106438.

Kolmos, M., Christoffersen, L., & Kruuse, C. (2021). Recurrent ischemic stroke–a systematic review and meta-analysis. Journal of Stroke and Cerebrovascular Diseases, 30(8), 105935.

Shah, S., Liang, L., Kosinski, A., Hernandez, A. F., Schwamm, L. H., Smith, E. E., ... & Xian, Y. (2020). Safety and outcomes of intravenous TPA in acute ischemic stroke patients with prior stroke within 3 months: Findings from get with the guidelines–stroke. *Circulation: Cardiovascular Quality and Outcomes*, *13*(1), e006031.

Singh, R. J., Chen, S., Ganesh, A., & Hill, M. D. (2018). Long-term neurological, vascular, and mortality outcomes after stroke. International Journal of Stroke, 13(8), 787-796.

WHO EMRO | *Stroke, Cerebrovascular accident* | *Health topics*. (2023). World Health Organization - Regional Office for the Eastern Mediterranean. <https://www.emro.who.int/health-topics/stroke-cerebrovascular-accident/index.html>