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Survey of Potential Disparity Issues Among Minority Stroke Survivors in Central Brooklyn

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Background

- Stroke is a leading cause of death and disability
 - Ranks second after heart disease worldwide and the 5th leading cause of death in the US.
- 80% decrease in stroke mortality over the past 60 years in the United States
 - NYC has a group of people with high rates of chronic illnesses, such as hypertension, stroke hospitalization, diabetes, and diabetes-related deaths.

Problem: Blacks and Latinos continue to have worse stroke outcomes than Whites, with higher rates of recurrent strokes and struggle with uncontrolled hypertension, diabetes, and hyperlipidemia leading to persistent risk factors.



Background




Central Brooklyn (East Flatbush)

Demographic

- Community of 77,589
- 83.3% Black, 6.8% Hispanic and 3.8% White,
- 53% born outside the US
- 15% of adults without health insurance

Health Outcomes

OBESITY, DIABETES AND HYPERTENSION (percent of adults)

	East Flatbush	Brooklyn	NYC
 Obesity	34%	27%	24%
 Diabetes	15%	12%	11%
 Hypertension	36%	29%	28%

Source: NYC DOHMH, Community Health Survey, 2015-2016



Goal

The study examined challenges for African-Americans/Afro-Caribbean stroke patients in Central Brooklyn, including access to health information, trust in healthcare, and technology usage for managing health risk factors.



Methods

- A quantitative descriptive study. Participants were recruited from Downstate Clinics
- Eligibility criteria:
 - Adults 18+ years old
 - Stroke survivors or a patient that has experienced at least one transient ischemic attack (TIA)
 - Or a patient with at least 3 well-established stroke risk factors from the following:
 - Cigarette smoking, heart disease, atrial fibrillation, diabetes, hypertension, high cholesterol
 - English speaker
 - Self-report race as Black and a Central Brooklyn zip code
- Self-report measure of eHealth literacy - eHeals (A lot, Some, A little, or Not at all)
- Compensated participants with a \$25 Amazon gift card
- Used RedCap for data collection
- SUNY Downstate Health Services University Institutional Review Board approved the study
- SPSS v. 26.0



Results

- 64 people responded to the survey; with 34 females and 29 males

Table 1. Level of Trust in the Healthcare System

A Doctor				
Education level	A lot	Some	A little	Not at all
Master's degree (1)	100%	-	-	-
Bachelor's degree (5)	80%	20%	-	-
Associate degree or trade school (8)	88%	13%	-	-
Graduated high school or GED (26)	73%	23%	-	4%
Some high school (15)	67%	27%	7%	-
Grade school (9)	100	-	-	-
Family or Friends				
Master's degree (1)	-	100%	-	-
Bachelor's degree (5)	20%	60%	20%	-
Associate degree or trade school (8)	50%	25%	-	25%
Graduated high school or GED (26)	23%	54%	23%	-
Some high school (15)	67%	27%	-	7%
Grade school (9)	44%	22%	-	33%
Religious Organizations and Leaders				
Master's degree (1)	-	-	-	100%
Bachelor's degree (5)	-	40%	60%	-
Associate degree or trade school (8)	25%	38%	-	38%
Graduated high school or GED (26)	15%	27%	39%	19%
Some high school (15)	27%	27%	33%	13%
Grade school (9)	44%	22%	11%	22%



Results

- All six educational levels had higher percentages:
 - Doctor's sources for health-related information
 - More education were more likely to seek health information from the doctor first than those with less education

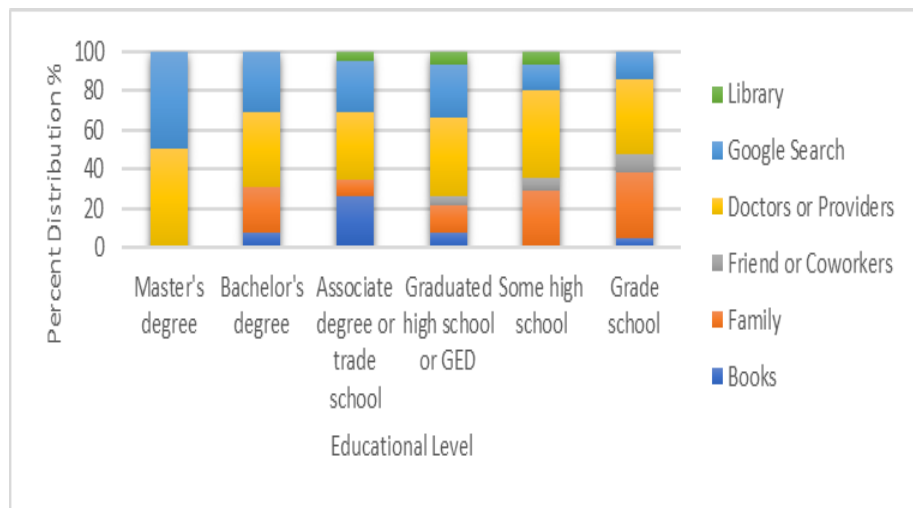


Figure 1. First Source to Seek Health Information in %



Results

- Master's and bachelor's degrees were more likely to use digital features interventions:
 - Doctor's appointments, medication reminders,
 - Meal scheduling and reminder
 - All participants expressed interest in using doctor's appointment features
- 66% were interested in medication reminders, and more than half of the participants saw value in meal and medication functions

Table 2. Features Use/Preferred in Digital Health Intervention

Education Level	Doctor/ Rehab Appt	Med Reminder	Meals & Med Schedule	Sch Social Activities	BP Tracking	Glucose Tracking	Cholesterol Monitoring
Master's degree (1)	100%	100%	100%	-	-	-	-
Bachelor's degree (5)	80%	80%	40%	0%	80%	80%	40%
Associate degree or trade school (8)	50%	50%	13%	13%	25%	50%	38%
Graduated high school or GED (26)	65%	50%	15%	15%	69%	38%	42%
Some high school (15)	67%	53%	56%	7%	53%	53%	33%
Grade school (9)	67%	56%	-	-	78%	67%	22%
Total	100%	66%	55%	16%	9%	61%	50%



Conclusion

- Many patients rely on their doctors as their primary source of health-related information
- Less educated individuals trust medical professionals for health information
- Other studies found that:
 - Patients are lost to follow-up after experiencing a stroke due to lack of trust in healthcare system may be a primary reason
 - Stroke patients may stop getting medical care due to distrust in the healthcare system, leading to a loss of follow-up
- Patients of color seek medical care from other, possibly contradictory sources beyond just healthcare providers
- More educated people are more confident in seeking and using reliable health information from their healthcare providers.
- Small sample size may limit the generalization of results for larger population
- This pilot study was a precursor to a telehealth stroke disparities clinical trial



References

1. Rajsic S, Gothe H, Borba HH, Sroczynski G, Vujicic J, Toell T, Siebert U. Economic burden of stroke: a systematic review on post-stroke care. *The European Journal of Health Economics*. 2019 Feb;20(1):107-34.
2. Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, De Ferranti S, Després JP, Fullerton HJ, Howard VJ, Huffman MD. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015 Jan 27;131(4):e29-322.
3. Bang OY, Chung JW, Lee MJ, Kim SJ, Cho YH, et al. (2016) Cancer Cell-Derived Extracellular Vesicles Are Associated with Coagulopathy Causing Ischemic Stroke via Tissue Factor-Independent Way: The OASIS-CANCER Study. *PLOS ONE* 11(7): e0159170. <https://doi.org/10.1371/journal.pone.0159170>.
4. Freedman B, Potpara TS, Lip GY. Stroke prevention in atrial fibrillation. *The Lancet*. 2016 Aug 20;388(10046):806-17.
5. Ovbiagele B, Goldstein LB, Higashida RT, Howard VJ, Johnston SC, Khavjou OA, Lackland DT, Lichtman JH, Mohl S, Sacco RL, Saver JL. Forecasting the future of stroke in the United States: a policy statement from the American Heart Association and American Stroke Association. *Stroke*. 2013 Aug;44(8):2361-75.
6. Hsieh C-Y. Medication Adherence and Stroke Prevention: What Real World Data Tells Us. *Acta Neurol Taiwan*. 2019;28(4):86-87.
7. [Appleby E, Gill ST, Hayes LK, Walker TL, Walsh M, Kumar S. Effectiveness of telerehabilitation in the management of adults with stroke: A systematic review. *PLoS One*. 2019;14(11):e0225150.
8. Norman CD, Skinner HA. eHEALS: the eHealth literacy scale. *Journal of medical Internet research*. 2006 Nov 14;8(4):e507.
9. Tennant B, Stollefson M, Dodd V, Chaney B, Chaney D, Paige S, Alber J. eHealth literacy and Web 2.0 health information seeking behaviors among baby boomers and older adults. *J Med Internet Res*. 2015 Mar 17;17(3):e70. doi: 10.2196/jmir.3992. PMID: 25783036; PMCID: PMC4381816.
10. Fayseil MA, Kaufman DR, Jumbo AE, Afable A, Levine SR. Discontinuity of Stroke Care in a Predominantly Black Urban Cohort: Insight from EHR Data. In: *MedInfo23. Proceedings of the 19th World Congress on Medical and Health Informatics*; 2023 Jul 8-12; Sydney, Australia.
11. <https://www1.nyc.gov/assets/doh/downloads/pdf/data/2018chp-bk17.pdf>