

Stroke Knowledge among Speech-Language Pathology Graduate Students

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Background

Each year, approximately 700,000 individuals experience stroke with 500,000 sustaining an initial event and the remaining 200,000 having a recurrence of stroke ¹. Even though nationwide stroke education programs exist, the public's knowledge of common stroke risk factors and early warning signs remain considerably low ^{2,3}.

Some new approaches to stroke education are now beginning to target students in middle schools ^{4,5}. Other approaches are emphasizing educational programs designed to target specific community-based organizations, such as churches and social organizations. Medical schools are now offering more instructional opportunities to medical students as a means of improving their stroke knowledge ^{6,7}.

Most believe that stroke-related educational programs with a specific focus on prevention can improve the knowledge and awareness of stroke. The scope of practice for speech-language pathologists (SLPs) includes "prevention," such as strategies to prevent and control specific stroke risk factors before and after stroke ⁸. SLPs are expected to have adequate knowledge of stroke risk factors and early warning signs of stroke in order to educate patients at risk for initial or recurrent stroke. Little is known about stroke knowledge among students currently enrolled in Communication Sciences and Disorders (CSD) programs who are in training to practice in the field of speech-language pathology.

Purpose: To assess knowledge of stroke risk factors, recognition of early warning signs and recognition of the first action to seek help (activation of the 9-1-1 system) in the event that someone is having a stroke in students currently enrolled in a CSD program

Methods

Participants

First-year and second-year CSD students were included in this study.

CSD-1: First-year students enrolled in general CSD curriculum courses.

CSD-2: First-year students enrolled in an interdisciplinary neuroscience course at the time of the study that provides first-year students with their initial exposure to stroke-related information.

CSD-3: Second-year students enrolled in a discipline-specific course (Stroke Syndromes). Students enrolled in Stroke Syndromes has previously completed the interdisciplinary neuroscience course.

Survey Content

Stroke risk factors: Five important risk factors (excluding hypertension) for stroke from a list of 20 items. Risk factors were obtained from the 2007 Heart Disease and Stroke Statistics - 2007 update.¹ The remaining 15 items were created by the authors of this study.

Stroke Warning Signs: Five warning signs from the Behavioral Risk Factor Surveillance System (BRFSS) Heart Attack and Stroke module. The remaining 15 items were created for the purposes of the project by the authors.

First action for treatment: List of actions from the BRFSS Heart Attack and Stroke module: (1) take the patient to the hospital, (2) tell them to call the doctor, (3) call 9-1-1, (4) call their spouse or family member or (5) do something else.

Statistical Analyses: Chi-Square analyses to test the relationship between year and (1) knowledge of risk factors, (2) early warning signs and (3) appropriate first action to call 9-1-1.

Results

Table 1: Recognition of Stroke Risk Factors among CSD Students by Class

	All Students	CSD-1	CSD-2	CSD-3	
	%	%	%	%	p-value
Smoking	97.4	92.9	100.0	100.0	0.172
Diabetes	60.5	46.4	84.6	50.0	0.008*
High Cholesterol	89.5	89.3	84.6	95.5	0.475
Age	84.2	85.7	80.8	86.4	0.837
Physical Inactivity	89.5	82.1	96.2	90.9	0.237
All five risk factors	40.8	28.6	57.7	36.4	0.336

*Hypertension was used as an example on the survey

Table 2: Recognition of Early Warning Signs of Stroke and Appropriate Action among CSD Students by Class

	All Students	CSD-1	CSD-2	CSD-3	
	%	%	%	%	p-value
Sudden confusion, trouble speaking or understanding	89.2	75.0	80.8	95.5	0.153
Sudden numbness or weakness of the face, arm or leg	100.0	100.0	100.0	100.0	NS
Sudden trouble seeing in one or both eyes	82.9	89.3	69.2	90.9	0.073
Sudden trouble walking, dizziness, loss of balance or coordination	76.3	75.0	61.5	95.5	0.022*
Sudden headache with no known cause	75.0	46.4	84.6	100.0	0.000*
Call 9-1-1 as first action	78.9	92.9	69.2	72.7	0.072
Recognized all 5 warning signs	36.8	17.9	19.2	81.8	0.000*
Recognized all 5 warning signs and appropriate action to call 9-1-1	28.9	21.4	11.5	59.1	0.011*

Conclusions

All of the students who participated in the survey recognized smoking, high cholesterol, physical inactivity and age as important risk factors for stroke. Their recognition of all five stroke risk factors was low across the three classes.

Recognition of individual early warning signs of stroke was generally high among the CSD students surveyed. Recognition of three of the five early warning signs was higher among CSD-3 students. These findings suggest an added benefit of multiple stroke education opportunities.

Recognition of all five early warning signs of stroke and all five early warning signs of stroke and first action to 9-1-1 in the event of a stroke was significantly low across the three classes and generally lower than recognition of individual early warning signs.

Limitations: (1) HTN, the most commonly recognized stroke risk factor was not included in the survey and (2) use of close-ended questions which can influence some responses relative to more open-ended questions.

References

- Rosamond W, Flegal K, Friday G, et al. Heart disease and stroke statistics—2007 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation*. Feb 6 2007;115(5):e69-171.
- Pancioli AM, Broderick J, Kothari R, et al. Public perception of stroke warning signs and knowledge of potential risk factors. *JAMA*. Apr 22-29 1998;279(16):1288-1292.
- Greenlund KJ, Neff LJ, Zheng ZJ, et al. Low public recognition of major stroke symptoms. *Am J Prev Med*. 2003;25(4):315-319.
- Gonzales NR, Brown DL, Maddox KE, et al. Kids Identifying and Defeating Stroke (KIDS): design of a school-based intervention to improve stroke awareness. *Ethn Dis*. Spring 2007;17(2):320-326.
- Williams O, Noble JM. Hip-Hop Stroke: A Stroke Educational Program for Elementary School Children Living in a High-Risk Community. *Stroke*. Jul 17 2008.
- Billings-Gagliardi S, Fontaineau NM, Wolf MK, Barrett SV, Hademenos G, Mazor KM. Educating the next generation of physicians about stroke: incorporating stroke prevention into the medical school curriculum. *Stroke*. 2001;32(12):2854-2859.
- Maron BA, Dansereau LM, Maron BJ, Easton JD. Impact of postgraduate medical education on recognition of stroke. *Cardiol Rev*. Mar-Apr 2005;13(2):73-75.
- Dickerson LM, Carek PJ, Quattlebaum RG. Prevention of recurrent ischemic stroke. *Am Fam Physician*. Aug 1 2007;76(3):382-388.