Implementing Community Stroke Outreach Using Peer Educators

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Presenter Disclosure Information

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No relevant financial relationship exists

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Objectives

- Describe challenges of the current stroke treatments and how stroke literacy influences stroke outcomes.
- Discuss approaches used to plan and implement an evidence-based community educational program.
- Report the findings of this translational research project.

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Introduction to the problem

- Clinical prognoses for stroke patients depends on the timing of recanalization. [5]
- The length of time elapsed since the onset of symptoms predicts the degree of functional recovery over clinical prognosis in acute strokes.[5]
- Current rates of acute stroke treatment are between two to 21.4% with significantly higher potential eligibility among acute stroke patients.[5,6]
- The majority of patients lose their eligibility as the time from the onset of symptoms exceeds a three-hour window. [5]

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Literature Review

- Among modifiable factors contributing to prehospital delay:
  - inability to appropriately identify stroke symptoms
  - lack of knowledge as to available treatments and implications related to delay in treatment
  - low rate of ambulance use
- Timely Emergency Medical Services (EMS) evaluation is associated with better outcomes and reduction in pre-hospital delays. [6,7,8]
- Average rates of ambulance utilization among stroke patients estimated at 63.7%.[6,7,8]
- Stroke knowledge gaps:
  - understanding the importance of early EMS activation
  - consequences of delays in seeking care
  - knowledge of symptoms unique to stroke[4,9]

- Peer-educators format for community education interventions has been studied and demonstrated efficacy in improving immediate and short-term knowledge of signs and risk factors of stroke. [20, 21]

- Earlier studies also evaluated self-efficacy transformation by assessing participants' confidence and readiness to act in emergency situation and showed significant and sustained progress. [20, 21]

Purpose of Project

- Prepare peer educators to lead community education events on stroke and evaluate their self-efficacy as potential educators

- Evaluate community knowledge and behavioral intent to call 911 for stroke symptoms before and after an educational intervention conducted by peer educators

AHA 2020 Impact Goal

By 2020, to improve the cardiovascular health of all Americans by 20 percent while reducing deaths from cardiovascular diseases and stroke by 20 percent.

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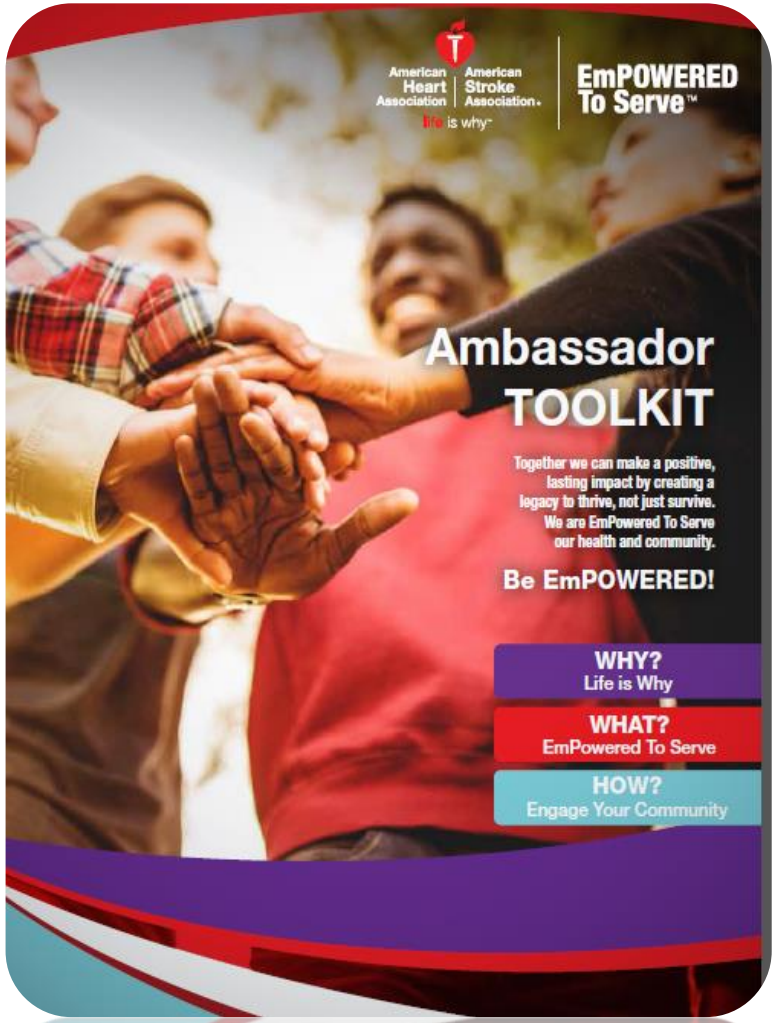
Tools

- Stroke Action Test (STAT) was selected as the validation tool.
- 28 items:
  - 21 describe clinical situations related to acute stroke
  - 7 describe non-neurological symptoms. [24]
- Strong reliability and validity were reported during the initial evaluation (α =0.83). [24]
- Self-efficacy was measured prior to intervention and at follow up :
  - "How confident are you that you are able to recognize stroke symptoms?" with degree of confidence rated on a scale 0-100, with "0" representing "Can not at all" and "100" representing "Highly, certain can do."

Program Elements

- Facilitator Materials (Spanish , English)
  - PPP with presenter notes
  - Lesson plan
  - Resource List
  - Posters
  - Brochures
  - Fact Sheets
  - Videos
- Evaluations
  - Ambassador Questionnaire (Spanish , English)



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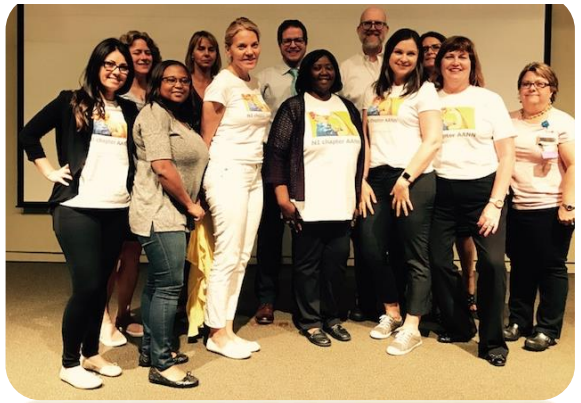
Marketing



- **Volunteers recruitment:**
  - Peer educators were recruited via social networks and professional organizations
  - No medical experience was required
- **Community engagement**:
  - Marketing of the educational events was done via local newsletter, AHA/ASA website and flyers.
  - The activities targeting non-English speakers were advertised as such.

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Step 1. WORKSHOP:

- Conducted by AHA/ASA representative
- Site: community hospital
- Goal: training community volunteers as peer educators
- Participants: 16 volunteers attended the workshop
- Format: three-hour training session: lecture and return demonstration
- Evaluation : self-efficacy questionnaire and STAT questionnaire (pre and post)
- Printed materials and PPP of the presentation
- Empowered To Serve Ambassadors' community membership
- Plan a timeframe for community events and site recruitment techniques
- Follow up: small group sessions following the initial workshop

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Peer Educators

Volunteers' Demographics	Total 16
Male	3
Female	13
Nurses	6
Students	3
Bilingual	3 (Spanish, Ukrainian, Polish, Russian)
AANN chapter members	3
Presented during the project	6
AHA Ambassadors	11

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Step 2. Community events:

- Format: lecture with PowerPoint presentation supplementation and optional blood pressure screening
- Conductor: trained peer educators with the support of the project administrator.
- Target audience: community participants (general public interested in attending health promotion events)
- Settings: community centers

Activity plan:

- Baseline survey (prior to the presentation)
- Presentation
- Follow up survey
- Q&A session
- Distribute printed materials to take home
- One month follow up survey (mail or e-mail)
- Optional: blood pressure screening, Stroke risk card

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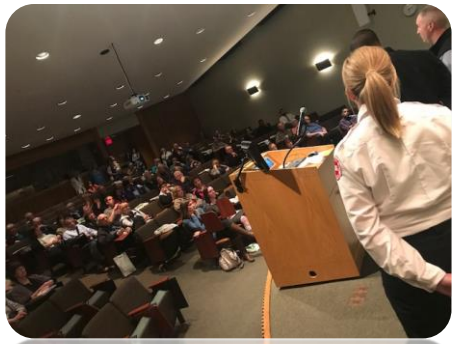
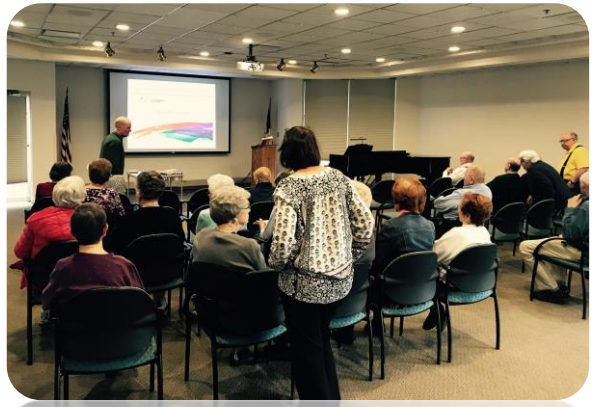
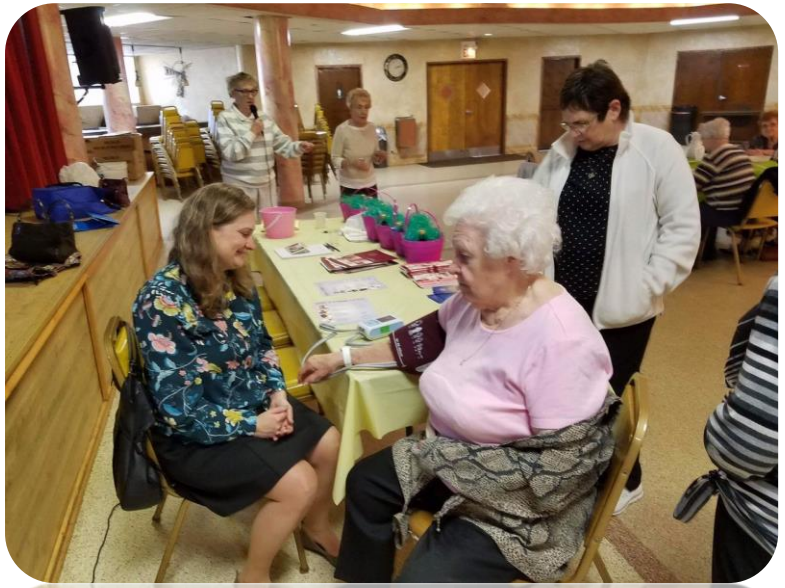
Setting

- Community Hospital (Comprehensive Stroke Center)
- Local Senior Centers
- Local churches
- Local Library







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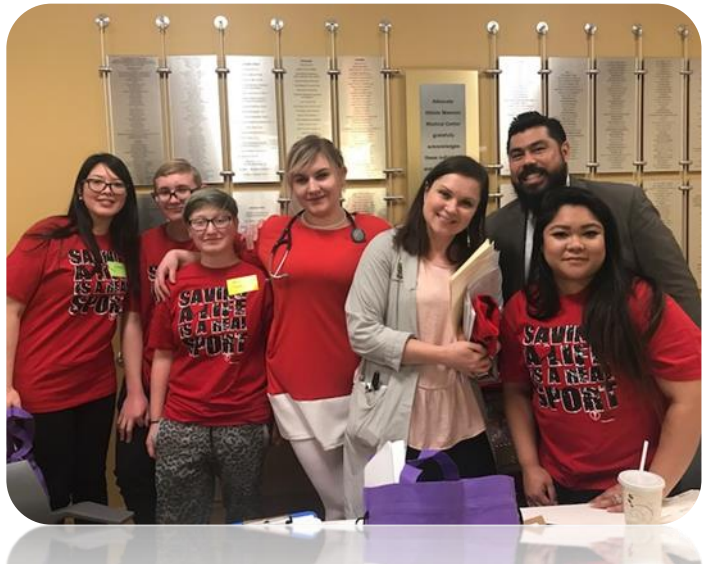
Events Summary

Only February, March and April events were included in the sample due to project timeline limitations.

Total of 365 community participants attended events during February –April

6 peer educators had an opportunity to present during 3 months of the data collection



Month	Type	Settings	Attended/Target Audience	Language	Incentives
January	Workshop	Hospital class room	16 Peer Educators	English	Sandwiches AHA T-shirts CD with presentation materials
February	Lecture	Hospital class room	6 Community	English	Handouts
	Lecture	Hospital class room	5 Community	English	Handouts
	Lecture	Hospital class room	6 Community	English	Handouts
	Lecture	Hospital class room	4 Community	English	Handouts
March	Lecture	Hospital class room	17 Community	English	Handouts
	Lecture	Senior Center	30 Community	English	Handouts
	Lecture and health screening	Senior Center "Forever Young"	62 Community	Russian	Handouts
	Lecture and health screening	Senior group at local church	35 Community	Ukrainian	Handouts
	Lecture and health screening	Senior group at local church	12 Community	Polish	Handouts
April	Lecture	Senior Independent living community	38 Community	English	Handouts
	Community Event	Local Hospital	150 Community	English	Screening T-Shirts Food Handouts
May	Community Event	Local Hospital	76 Community	English	Screening T-Shirts Food Handouts
June	Lecture	Local Library	42 Community	English	Handouts
July - August	Lectures	Local Library	Community	English	**FUTURE events**

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Demographics of Participants

Demographics (N=72)		
Gender	**n**	**%**
Female	62	84.9
Male	11	15.1
Age		
18-20	2	2.7
21-29	3	4.1
30-39	15	20.5
40-49	13	17.8
50-59	22	30.1
60 or older	18	24.7
Educational Degree		
High School	2	2.8
Associate's Degree	10	13.9
Some College	11	15.3
Bachelor's Degree	23	31.9
Graduate Degree	26	36.1

Evaluation Plan

Baseline	Immediate post	1 month follow up
Completed prior to beginning of activity (on-site or email a link to survey using Survey Monkey® for all pre-registered community participants	Given immediately after the presentation and completed on-site	Emailed all participants a link to survey using Survey Monkey®. Three follow up reminders were sent. Mailed paper survey to those who requested paper format.
STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire	STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire	STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire

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Testing Results

Peer Educators :

- Stroke knowledge and intent to act was measured at baseline and initial post workshop. The means and standard deviations for stroke knowledge and intent to act shown in the table (higher score indicating higher knowledge and intent to call 911)
- Scores for stroke knowledge and intent to act were significantly improved post-training; t(16)=8.927, *p*= 0.000.
- A McNemar test showed that there was a significant association between the two testing times and likelihood to educate at X^2 (2) =11.253, *p* = 0.004.

Peer Educators	Baseline STAT Mean Scores	Initial Post STAT Mean Scores	One Month Follow-Up STAT Mean Scores
Mean	19.43	24.68	Not applicable
Std. Deviation	3.42	2.91	Not applicable

Testing Results

Community	Baseline STAT Mean Scores	Initial Post STAT Mean Scores	One Month Follow-Up STAT Mean Scores
Mean	17.56	19.66	19.93
Std. Deviation	6.04	3.68	4.45
P-value	$p = 0.041$	$p = 0.033$	$p = 0.979$

Community:

- Stroke knowledge and intent to act was measured at baseline, initial post and follow-up one month (Table)
- ANOVA was significant at F (2, 144) = 4.832, $p = 0.009$ indicating improvement in knowledge from baseline testing for both immediate and follow up evaluation as compared to baseline stroke knowledge
- The Post Hoc Sidak tests revealed that baseline was significantly lower than initial post ($p = 0.041$) and one month follow-up ($p = 0.033$).
- However, initial post was not significantly different from one month follow-up ($p = 0.979$) indicating retention information one month later.
- Self-efficacy: McNemar test found that there was a significant association between the three testing times and confidence level at X^2 (2) =19.738, $p = 0.001$, supporting the idea of positive influence of knowledge on the level of confidence or self-efficacy

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IMPLICATION FOR PRACTICE

- Cost effective approach to raising community awareness about stroke emergencies and does not require a significant financial investment.
- Utilizing volunteers as peer educators, the program can be implemented with groups of various sizes without a significant increase in work force utilization.
- To ensure successful implementation, a stepwise approach based on participants' existing knowledge and degree of self-efficacy is recommended.
- Using a "peer-led" format also provided unique educational prospects for the ethnic communities with limited English fluency by employing volunteers proficient in native languages.

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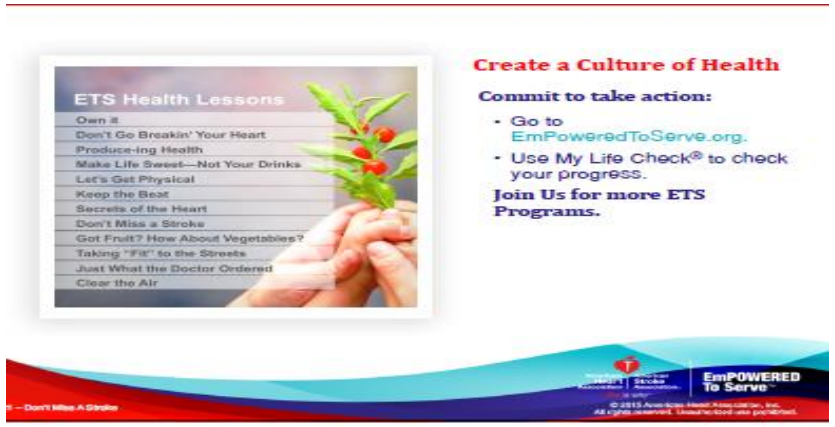
Sustainability

- Programs have been well received, and a local library requested regular educational programing using the *Empower to Serve* curriculum.
- AHA/ASA Ambassador program requires an annual commitment for all volunteers.
- Hospital support of the project: community outreach required in order to remain stroke certified.
- Expansion of the project through the local chapter of AANN called "Health Education Initiative" became a chapter platform for community outreach and was presented at the annual chapter symposium in June, 2017.



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REFERENCES

1.American Stroke Association. (2014). Ambassadors. Retrieved from https://www.empoweredtoserve.org/index.php/about/ambassadors/ .

2.Mozaffarian. Heart disease and stroke statistics-2015 update: a report from the American Heart Association (vol 131, pg e29, 2015). Circulation. 2015 Jun 16;131(24):E535-.

3.Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, Das SR, de Ferranti S, Després JP, Fullerton HJ, Howard VJ. Executive summary: Heart Disease and Stroke Statistics-2016 update: A report from the American Heart Association. Circulation. 2016 Jan 26;133(4):447.

4.Mowla A, Doyle J, Lail NS, Rajabzadeh-Oghaz H, Deline C, Shirania P, Ching M, Crumlish A, Steck DA, Janicke D, Levy EI. Delays in door-to-needle time for acute ischemic stroke in the emergency department: A comprehensive stroke center experience. Journal of the Neurological Sciences. 2017 May 15;376:102-5.

5.Chen NC, Hsieh MJ, Tang SC, Chiang WC, Huang KY, Tsai LK, Ko PC, Ma MH, Jeng JS. Factors associated with use of emergency medical services in patients with acute stroke. The American journal of emergency medicine. 2013 May 31;31(5):788-91.

6.Paul CL, Ryan A, Rose S, Attia JR, Kerr E, Koller C, Levi CR. How can we improve stroke thrombolysis rates? A review of health system factors and approaches associated with thrombolysis administration rates in acute stroke care. Implementation Science. 2016 Apr 8;11(1):51.

7.Yanagida T, Fujimoto S, Inoue T, Suzuki S. Causes of prehospital delay in stroke patients in an urban aging society. Journal of Clinical Gerontology and Geriatrics. 2014 Sep 30;5(3):77-81.

8.Tiller D, Herzog B, Kluttig A, Haerting J. Health literacy in an urban elderly East-German population–results from the population-based CARLA study. BMC public health. 2015 Sep 10;15(1):883.

9.Ellis C, Knapp RG, Gilbert GE, Egede LE. Factors associated with delays in seeking treatment for stroke care in veterans. Journal of Stroke and Cerebrovascular Diseases. 2013 Oct 31;22(7):e136-41.

10.Ganzer CA, Insel KC, Ritter LS. Associations between working memory, health literacy, and recall of the signs of stroke among older adults. Journal of Neuroscience Nursing. 2012 Oct 1;44(5):236-43.

11.Morren JA, Salgado ED. Stroke literacy, behavior, and proficiency in a South Florida population. Journal of Stroke and Cerebrovascular Diseases. 2013 Oct 31;22(7):962-8.

12.Beal CC, Flanders SA, Bader SG. Can Children Reduce Delayed Hospital Arrival for Ischemic Stroke?: A Systematic Review of School-Based Stroke Education. Journal of Neuroscience Nursing. 2016 Jun 1;48(3):E2-13.

13.Beckett J, Barley J, Ellis C. Patient perspectives of barriers and facilitators of treatment-seeking behaviors for stroke care. Journal of Neuroscience Nursing. 2015 Jun 1;47(3):154-9.

14.Nishijima H, Kon T, Ueno T, Haga R, Yamazaki K, Yagihashi K, Funamizu Y, Arai A, Suzuki C, Nunomura JI, Baba M. Effect of educational television commercial on pre-hospital delay in patients with ischemic stroke. Neurological Sciences. 2016 Jan 1;37(1):105-9.

15.Dombrowski SU, White M, Mackintosh JE, Gellert P, Araujo-Soares V, Thomson RG, Rodgers H, Ford GA, Sniehotta FF. The stroke 'Act FAST'campaign: Remembered but not understood?. International Journal of Stroke. 2015 Apr 1;10(3):324-30.

16.Mullen Conley K, Juhl Majersik J, Gonzales NR, Maddox KE, Pary JK, Brown DL, Moyé LA, Espinosa N, Grotta JC, Morgenstern LB. Kids Identifying and Defeating Stroke (KIDS): development and implementation of a multiethnic health education intervention to increase stroke awareness among middle school students and their parents. Health promotion practice. 2010 Jan;11(1):95-103.

17.Williams, O., Leighton-Herrmann, E., DeSorbo, A., Eimicke, J., Abel-Bey, A., Valdez, L., ... Teresi, J. A. (2016). Effect of two 12-minute culturally targeted films on intent to call 911 for stroke. Neurology, 86(21), 1992-1995.

18.Wang L, Chen CM, Liao WC, Hsiao CY. Evaluating a community-based stroke nursing education and rehabilitation programme for patients with mild stroke. International journal of nursing practice. 2013 Jun 1;19(3):249-56.

19.Wall HK, Beagan BM, O'Neill HJ, Foell KM, Boddie-Willis CL. Addressing stroke signs and symptoms through public education: the Stroke Heroes Act FAST campaign. Preventing chronic disease. 2008 Apr;5(2).

20.Kilkenny MF, Purvis T, Werner M, Reyneke M, Czerenkowski J, Cadilhac DA. Improving stroke knowledge through a 'volunteer-led'community education program in Australia. Preventive medicine. 2016 May 31;86:1-5.

21.Glanz K, Marger SM, Meehan EF. Evaluation of a peer educator stroke education program for the elderly. Health Education Research. 1986 Jul 1;1(2):121-30.

22.Bandura A. Health promotion by social cognitive means. Health education & behavior. 2004 Apr;31(2):143-64.

23.Skolarus LE, Murphy JB, Zimmerman MA, Bailey S, Fowlkes S, Brown DL, Lisabeth LD, Greenberg E, Morgenstern LB. Individual and community determinants of calling 911 for stroke among African Americans in an urban community. Circulation: Cardiovascular Quality and Outcomes. 2013 May 1;6(3):278-83.

24.Billings-Gagliardi S, Mazor KM. Development and validation of the stroke action test. Stroke. 2005 May 1;36(5):1035-9.

25.Freedman, D., Pisani, R., & Purves, R. (2011). Statistics: Fourth edition. New York, New York: W.W. Norton.

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Thank you!

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