Implementing Community Stroke Outreach Using Peer Educators

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FINANCIAL DISCLOSURE:
No relevant financial relationship exists
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.
Introduction to the problem

- Clinical prognoses for stroke patients depend 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.\(^5\)
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
• 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.  
• Strong reliability and validity were reported during the initial evaluation ($\alpha = 0.83$).  
• 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)
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.
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
## Peer Educators

<table>
<thead>
<tr>
<th>Volunteers’ Demographics</th>
<th>Total 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
</tr>
<tr>
<td>Nurses</td>
<td>6</td>
</tr>
<tr>
<td>Students</td>
<td>3</td>
</tr>
<tr>
<td>Bilingual (Spanish, Ukrainian, Polish, Russian)</td>
<td></td>
</tr>
<tr>
<td>AANN chapter members</td>
<td>3</td>
</tr>
<tr>
<td>Presented during the project</td>
<td>6</td>
</tr>
<tr>
<td>AHA Ambassadors</td>
<td>11</td>
</tr>
</tbody>
</table>
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
Setting

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

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

#### Demographics (N=72)

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>62</td>
<td>84.9</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>15.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>21-29</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>30-39</td>
<td>15</td>
<td>20.5</td>
</tr>
<tr>
<td>40-49</td>
<td>13</td>
<td>17.8</td>
</tr>
<tr>
<td>50-59</td>
<td>22</td>
<td>30.1</td>
</tr>
<tr>
<td>60 or older</td>
<td>18</td>
<td>24.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Degree</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>10</td>
<td>13.9</td>
</tr>
<tr>
<td>Some College</td>
<td>11</td>
<td>15.3</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>23</td>
<td>31.9</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>26</td>
<td>36.1</td>
</tr>
</tbody>
</table>
### Evaluation Plan

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Immediate post</th>
<th>1 month follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed prior to beginning of activity (on-site or email a link to survey using Survey Monkey®️ for all pre-registered community participants)</td>
<td>Given immediately after the presentation and completed on-site</td>
<td>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.</td>
</tr>
<tr>
<td>STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire</td>
<td>STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire</td>
<td>STAT questionnaire, self-efficacy survey with Likert Style question and demographic questionnaire</td>
</tr>
</tbody>
</table>
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).

<table>
<thead>
<tr>
<th>Peer Educators</th>
<th>Baseline STAT Mean Scores</th>
<th>Initial Post STAT Mean Scores</th>
<th>One Month Follow-Up STAT Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>19.43</td>
<td>24.68</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.42</td>
<td>2.91</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

- Scores for stroke knowledge and intent to act were significantly improved post-training; \( \text{t}(16)=8.927, p=0.000 \).

- A McNemar test showed that there was a significant association between the two testing times and likelihood to educate at \( \chi^2 (2)=11.253, p = 0.004 \).
Testing Results

<table>
<thead>
<tr>
<th>Community</th>
<th>Baseline STAT Mean Scores</th>
<th>Initial Post STAT Mean Scores</th>
<th>One Month Follow-Up STAT Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>17.56</td>
<td>19.66</td>
<td>19.93</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.04</td>
<td>3.68</td>
<td>4.45</td>
</tr>
<tr>
<td>P-value</td>
<td>$p = 0.041$</td>
<td>$p = 0.033$</td>
<td>$p = 0.979$</td>
</tr>
</tbody>
</table>

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.
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.
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.
REFERENCES


Thank you!