Published in final edited form as:
Health Promot Pract. 2010 January ; 11(1): 95–103. doi:10.1177/1524839907309867.

Kids Identifying and Defeating Stroke (KIDS): Development and Implementation of a Multi-Ethnic Health Education Intervention to Increase Stroke Awareness Among Middle School Students and Their Parents

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Abstract

Note: The KIDS website can be found at www.med.umich.edu/stroke/kids/

The KIDS (Kids Identifying and Defeating Stroke) Program is a three-year prospective, randomized, controlled, multiethnic school-based intervention study. Program goals include increasing knowledge of stroke signs and treatment and intention to immediately call 911 among Mexican American (MA) and non-Hispanic white (NHW) middle school students and their parents. This article describes the design, implementation and interim evaluation of this theory-based intervention. Intervention students received a culturally appropriate stroke education program divided into four 50-minute classes each year during the 6th, 7th, and 8th grades. Each class session also included a homework assignment that involved the students' parents or other adult partners. Interim-test results indicate that this educational intervention was successful in improving students' stroke symptom and treatment knowledge and intent to call 911 upon witnessing a stroke compared with controls ($p<0.001$). We conclude that this school-based educational intervention to reduce delay time to hospital arrival for stroke shows early promise.

Keywords

stroke; health disparities; Mexican Americans; social cognitive theory; school-based program

BACKGROUND

Stroke is the leading cause of disability in the U.S. and the third leading cause of death. Ischemic stroke accounts for 85% of all strokes. The only FDA-approved treatment for acute ischemic stroke, rt-PA, must be given within three hours of stroke onset. Stroke patients who receive rt-PA have been shown to have at least a 30% relative (11−13% absolute) chance of having minimal to no disability compared with those who receive placebo (Kwiatkowski et al. 1999). This translates into higher rates of patients being discharged to home or rehabilitation rather than to a nursing home, and has been shown to be a cost-saving treatment for stroke (Fagen et al., 1998). Yet only a small percentage of the ischemic stroke population receives rt-PA (Brown et al., 2004). The major barrier to receiving therapy is arriving to the hospital within the three-hour window (Barber et al., 2001; Morgenstern et al., 2002). This is due, at least in part, to a lack of recognition of stroke signs and symptoms (Ferris et al., 2005), which are variable and include weakness, numbness, clumsiness, and visual loss, usually restricted to one side, as well as language disturbances and confusion. The method of arrival to the hospital is also important, as patients who arrive via emergency medical services significantly shorten their arrival time and time to head CT (Morris et al., 2000; Menon, Pandey, & Morgenstern, 1998), a critical step prior to receiving rt-PA. However, stroke patients usually do not activate emergency medical services themselves (Wein, et al., 2000) due to impairment of language, motor function, and cognition. Thus in order to improve acute stroke therapy, it is imperative that close family and friends be able to recognize stroke symptoms and understand the urgency in seeking prompt medical care by activating emergency medical services. Education cannot focus solely on stroke symptoms, but must also motivate behavioral action (calling 9−1−1) by explaining the efficacy of early acute stroke therapy. In one study, 29% of patients presenting after three hours recognized their stroke symptoms, but chose not to seek medical attention quickly (Barber et al., 2001).

Hispanics Americans (HAs) are the largest minority in the U.S. today (Grieco, 2001), with those of Mexican origin being the largest subset (U.S. Census Bureau, 2005a). The incidence of both ischemic and hemorrhagic stroke is approximately 1.5 − 2 times higher in MAs than non-Hispanic Whites (NHWs), with higher rates seen at younger ages (Morgenstern et al., 2004). Conversely, stroke symptom recognition, while poor across all ethnic groups, is lowest among HAs (Ferris et al., 2005; DuBard, Garrett & Gizlice, 2006) with Spanish-only speaking HAs having the worst symptom recognition (DuBard, Garrett & Gizlice, 2006). Given these facts as well as the large public health impact expected from the HA stroke burden (Brown et

al., 2006), educational outreach programs must target this community with culturally specific interventions.

While several community-based media campaigns have been reported in the literature to improve stroke knowledge (Silver et al., 2003; Morgenstern et al., 2002; Beckera et al., 2001), a review of the literature did not identify any controlled trials of school-based interventions that target improvements in the emergency treatment of stroke through increased stroke knowledge and behavioral intention to call 9−1−1. Additionally, few programs have targeted improved stroke knowledge among Mexican Americans (MAs) or among children. This article describes the design, implementation and interim results of the theory-based, multi-ethnic, KIDS Program designed to increase middle school students' and their parents' or other adult partners' knowledge of stroke symptoms and intention to call 9−1−1 immediately when witnessing a stroke.

METHODS

Participants

The KIDS program was implemented in middle schools in Corpus Christi, Texas. An urban locale, Corpus Christi is located in Nueces County on the Texas Gulf Coast. The Corpus Christi Metropolitan Statistical Area has a total population of 383,259, with 54% of the population of Hispanic origin and 40% NHW (U.S. Census Bureau, 2005b). MAs account for over 80% of the Hispanic population. The MA population in Corpus Christi is predominantly second and third generation-born United States citizens; this is not an immigrant population.

The middle schools randomly selected to participate in the KIDS program are part of the Corpus Christi Independent School District (CCISD). Middle school enrollments total 8,682, with primarily HA (74%) students, but also significant numbers of NHW (19%) and African-American (6%) students (CCISD, 2005).

Procedures

The KIDS program was designed as a three-year prospective, randomized, controlled school-based trial. Six of the twelve Corpus Christi, Texas, middle schools were randomly selected and then randomized 1:1 to the intervention or control groups. Within each of the three intervention schools, one sixth-grade science or health teacher was randomly chosen. Students assigned to that teacher received the KIDS stroke education program taught by KIDS program staff, while the students in the control schools were given the standard health or science curriculum. In subsequent years (7^{th} and 8^{th} grades), the students who received the intervention in the sixth grade were taken out of a regular classroom to attend the KIDS project lessons. The stroke education program was divided into four one-hour classes each year during the 6^{th}, 7^{th}, and 8^{th} grades. Each class session also included a homework assignment that involved the students' adult partners.

A pre-test was administered to student participants 3 months before the 6^{th} grade lessons began. The day of the pre-test, students were asked to identify two adults in their community with whom they were closest to participate in the KIDS follow-up tests and homework assignments. While most students chose their parents as adult partners, other common adult partners included grandparents, aunts and uncles, and adult siblings. Pre-tests for adult partners were sent home with the students the same day; if they were not returned, a second copy of the test was mailed to the student's home two months later.

To provide guidance in developing the final year of the project, an interim test was given to students and adult partners following the 7^{th} grade KIDS intervention. Additionally, a post-test was scheduled to be given to students and their adult partners 3 months following the 8^{th}

grade KIDS intervention, followed by a persistence test 1 year after the intervention. The interim test, post-test, and persistence test are identical to the pre-test.

The KIDS Program: Scope and Sequence

The KIDS curriculum was written one year at a time, with each successive year building on the previous year's experiences. Social cognitive theory was used to guide curriculum development. Throughout the three-year project, the KIDS Planning Committee met weekly to discuss the lessons as they were designed and implemented. Additionally, each year's curriculum was pilot tested with middle school students and refined prior to implementation in the intervention schools.

The 6th grade lessons provided a general introduction to the symptoms of stroke, availability of rt-PA and the need to call 9−1−1 right away. The 7th grade lessons were designed to provide more in-depth information on stroke symptoms and their relationship to the portion of the brain that is damaged. Students and their adult partners also began to explore common bystander reactions to witnessing a stroke and internal and external influences on behavior that would influence them to call 9−1−1 right away. The 8th grade lessons included a more specific and in-depth look at influences on seeking immediate emergency care for stroke. Table 1 presents an overview of the KIDS curriculum.

DEVELOPMENT OF THE KIDS PROGRAM

The KIDS Program was systematically developed using several specific types of information. Community surveys in East Texas and in Corpus Christi provided insights into stroke related knowledge, attitudes, and behavioral intentions of both MAs and NHWs (Smith MA, et al., 2003; Morgenstern, et al., 2002). School-based focus groups added information essential to planning a culturally relevant intervention. Social cognitive theory offered a framework for crafting an intervention that would increase stroke knowledge and motivation to contact emergency medical services when witnessing a stroke. Interim-test results from student participants provided important feedback for fine-tuning the final year of the KIDS program.

Community Surveys

In preparation for the KIDS project, a telephone interview survey was conducted in Nueces County, Texas, to determine differences in knowledge of stroke signs, risk factors, and treatment resources among MAs and NHWs (Smith, et al., 2003; Morgenstern, et al., 2002). This survey found that MAs were significantly less likely than NHWs to 1) recognize that a treatment was available for acute stroke, 2) indicate that there was a short time frame for being eligible to receive acute stroke treatment, and 3) say they would call 9−1−1 if they or a loved one were having a stroke. Additionally, MAs were less able to recall stroke symptoms and risk factors, although both groups' responses indicated a lack of knowledge. Neither MAs nor NHWs were able to identify rt-PA or clot-busting drug when asked to name an acute stroke treatment.

Needs assessment data collected previously for another project, The TLL Temple Foundation Stroke Project (Morgernstern et al., 2002), was also helpful in planning the KIDS project. A random digit dialed telephone survey of 691 people in East Texas had found that the best predictors of individuals most likely to call 9−1−1 for a witnessed acute stroke included 1) being NHW; 2) having a perception that peers would call 9−1−1; 3) self-efficacy; 4) expecting that calling 9−1−1 would lead to a good outcome; and 5) reporting one would promptly go to the doctor when medical problems occur.

Taken together, this needs assessment data from two telephone interview studies in eastern Texas clearly indicated that self-efficacy, outcome expectations, perceived norms, and

knowledge of stroke symptoms and treatment are critical components for a successful acute stroke health education intervention.

Cultural Relevance

In designing the KIDS curriculum special care was given to reflect the Corpus Christi dominant MA culture, while also being appropriate for the needs of the NHWs and African Americans. Hispanic cultures, especially MAs, place great value on the family (*familism*) (Tacon & Caldera, 2001). It is common for HAs to have multiple generations living together in a household (Simmons, 2003). The KIDS program incorporated this multigenerational contact by teaching middle school-aged children about stroke and having them teach the information to adult partners at home through specific homework assignments.

The KIDS Project staff included MA health professionals from Corpus Christi who provided guidance in developing lesson activities that incorporated aspects of the local MA culture. Additionally, KIDS Project staff conducted focus groups with volunteer students, parents, and teachers from Corpus Christi early in the planning process, as another way to ensure cultural sensitivity. Focus group questions addressed perceptions about preferred teaching methods and parent's previous experiences with participation in homework assignments. Students, parents and teachers agreed that active learning strategies were preferred, with students noting that using technology is helpful. Parents and teachers revealed that parents are used to providing assistance on student homework assignments, but have little or no experience with students being assigned to teach their parents. Parents suggested that homework activities such as interviews would be acceptable. Students believed that giving rewards for returning adult partner homework assignments might encourage participation. Teachers pointed out that some parents spoke primarily Spanish, which would have implications for homework assignments.

All adult partner homework assignments were created in both English and Spanish. Role-play and web-based scenarios were created to reflect the MA culture, using backgrounds such as the celebration of “El Dia de Los Muertos” (The Day of the Dead), and a Tejano (Texas-Mexican) dance. Scenarios and role-plays were based in settings familiar to the students, such as the Corpus Christi waterfront. Interviewing was incorporated by having 7th grade students interview their adult partners about personal and environmental influences on immediately calling 9−1−1. Incentives, ranging from gel pens to movie passes, were provided to students each year based on both their participation in classroom activities and the number of homework assignments returned.

Social Cognitive Theory

Social cognitive Theory (SCT) focuses on the dynamic and reciprocal interactions between personal factors, environmental influences and behavior as they relate to learning (U.S. Department of Health and Human Services, 2005) emphasizing that individuals can learn by observing the behaviors of others and the outcomes of those behaviors, as well as from personal experiences. Based on the needs assessment, SCT was chosen as the theoretical framework for the KIDS project. Behavioral capability, self-efficacy, and outcome expectations received special emphasis.

Behavioral Capability—In SCT, behavioral capability refers to the knowledge and skills that are necessary to be able to do the recommended behavior. The KIDS project focused on strengthening the behavioral capability of students and their adult partners by increasing their knowledge of symptoms of stroke and acute stroke treatment (rt-PA), as well as the need to get to the hospital within 3 hours after symptom onset. Throughout the project information and training about the correct actions to take when witnessing a stroke were provided, including

noting the time the symptoms started, calling 9−1−1 immediately, and giving the correct first aid while waiting for the ambulance.

To help students gain important knowledge about stroke symptoms an interactive web site was developed for the 7th grade (year 2) curriculum. The KIDS class met in a school computer lab, where students participated in a web activity that illustrated the specific signs and symptoms expected from damage to various parts of the brain (see Figure 1). When students moved the cursor over the different parts of the brain, the stroke damage for that part of the brain was highlighted both on screen and through audio dialog. Students were given a handout with illustrations from the KIDS web site to use when teaching their adult partners about the brain and stroke symptoms.

Role-playing emergency situations of stroke vs. non-stroke were used to promote skill mastery. Students worked together in small groups to analyze each scenario and decide if symptoms of stroke were depicted. Student groups then acted out the scenarios for the class, calling 9−1−1 if stroke symptoms were present.

Self-efficacy—Self-efficacy refers to a person's belief in his/her capabilities and confidence in performing a specific behavior. It includes the belief that one can choose to do the specific behavior under difficult circumstances. The KIDS project focused on increasing self-efficacy for recognizing the symptoms of stroke in an emergency when stress levels are high, and calling 9−1−1 right away even if bystanders make other suggestions for how to handle the emergency.

Individuals interpret several types of information to form their self-efficacy beliefs (Pajares, 2002). Mastery experiences are a strong influence on self-efficacy. Self-efficacy can also be influenced through vicarious learning, especially when the person modeling the behavior is similar to the individuals observing. Vicarious learning experiences were integrated throughout the KIDS curriculum. One example involved the KIDS web site where students observed a scene at a dance with Tejano music playing. A woman has sudden numbness and weakness in her right arm and leg while dancing (see Figure 1). As students move the mouse over the various bystanders they hear a number of suggestions regarding what the woman should do. The middle school aged boy suggests calling 9−1−1 right away, modeling a MA youth recommending the correct behavior to adults. Students used a handout illustrating this scenario to teach their adult partners about how important it is to call 9−1−1 when witnessing a stroke, even when others suggest different actions.

Outcome Expectations—In SCT, outcome expectations refer to beliefs about the consequences of performing the recommended behavior. Specifically, the KIDS lessons were designed to teach students and their adult partners that getting to the hospital in time to receive rt-PA increases the chances of having a better recovery and decreases the chances of disability from stroke. In the Tejano Dance web activity, students were asked to choose which bystander suggestion they thought was correct. Outcomes for each choice were given, including how much time it took to arrive at the hospital, whether the woman received rt-PA, and the level of disability she had when leaving the hospital. A worksheet highlighting the Tejano Dance scenario was created, in both English and Spanish, for students to share with their adult partners.

INTERIM EVALUATION

To provide feedback on the efficacy of years one and two of the intervention, an interim test was administered 4 months after the 7th grade intervention to all students and adult partners. The test was identical to the pre-test. Students in each intervention and control school were located and asked to leave their classes to complete the tests in a central location. Students were then asked to take the test home to their adult partners and return the completed tests to

the school. Five-dollar movie passes were given as incentives to students who returned tests from their adult partners.

The test consisted of 12 questions, divided into three domains of four questions each. Domain 1 tested knowledge of stroke pathophysiology. Domain 2 tested stroke signs recognition and domain 3 assessed behavioral intent and treatment knowledge. The test was written by a stroke neurology professor and an health education professor who had stroke education experience. The KIDS Project stroke educators were blinded to the test questions so they would not "teach to the test". Prior to planning the 8th grade KIDS lessons, interim results were shared with the KIDS stroke education staff by domain only, thus protecting the blinded test questions.

Interim Analysis Methods

The primary outcome measures were improvement among both students and adult partners in the three domains: knowledge of stroke pathophysiology, stroke signs recognition, and behavioral intent and treatment knowledge. The mean number of correct responses for the pre-test and interim-test were calculated for each domain for those individuals who completed both pre- and interim-tests. A paired t-test was used to compare mean number of correct responses (maximum = 4) on pre- and interim-tests for the control and intervention schools. The relationship between intervention status and improvement in domain scores by at least 1 correct response was assessed with a chi-square test.

Interim Results

In year one, 515 sixth grade students (258 control, 257 intervention) and 454 adults (203 control, 251 intervention) enrolled in the study. Of the control students, 90% self-identified as Hispanic and 42% were male. Among the intervention students, 78% self-identified as Hispanic and 55% were male. Of the control adult partners, 89% self-identified as Hispanic, 38% were male, and 88% were between the ages of 30 and 49. Among the intervention parents, 68% self-identified as Hispanic, 37% were male, and 83% were between the ages of 30 and 49.

Interim tests were completed by 181 control students and by 149 intervention students. School transfers resulted in the loss of 60 intervention and 27 control students, who thus did not complete an interim test. Interim tests were completed by 98 control and 39 intervention adult partners. Student transfers accounted for lack of interim test completion for 30 intervention and 6 control adult partners.

The results of the student pre-test and interim-test are shown in Table 2. Students in the intervention group had significant improvement in their interim test scores, compared with their pre-test score in all domains; students in the control group had smaller but significant improvement in domains 2 and 3, and deterioration in domain 1 scores. Intervention students were more likely to improve their scores by ≥1 correct response. Too few adult partner interim-tests were returned to provide meaningful results.

DISCUSSION

Interim results indicated that the KIDS Project intervention did have an impact on student knowledge and behavioral intention. Specifically, the first two years of this school-based educational intervention were successful in improving student knowledge of stroke pathophysiology, recognition of symptoms of stroke, stroke treatment and intent to call 9−1−1 upon witnessing a stroke. Though even the control students improved their knowledge in the latter two domains, their improvement was not as robust as that of the intervention students. The minimal improvement of the control students likely reflects the general accumulation of health knowledge as children age.

The interim results were helpful in guiding the design of the final year of the intervention. Students in the intervention group scored the highest on behavioral intention to call 9−1−1 and understanding that treatment for acute stroke is available. While students showed significant improvement in their knowledge of stroke symptoms, it was clear that additional instruction was needed. The 3rd year curriculum was designed to reinforce learning about stroke symptoms. A Corpus Christi teacher who had experienced a positive outcome after receiving rt-PA for a stroke agreed to share her story with the KIDS project. A short rt-PA success story video, that highlighted symptoms of stroke, calling 9−1−1, receiving rt-PA and a positive recovery, was produced and shown to students. A *fotonovela* based on the video was created to help students share the story with their adult partners.

Through teaching the students and reviewing adult partner homework assignments in the first two years of the intervention, we learned of additional barriers to seeking urgent medical care for stroke. Students and parents were fatalistic regarding efficacy of early stroke treatment and worried about negative consequences of activating emergency medical services if the witnessed symptoms are not due to a stroke. These misconceptions were also addressed in planning the 8th grade (year 3) lessons. Specifically, a lesson was designed to discuss the results of the student's 7th grade parent interviews on influences that might cause someone to delay calling 9−1−1. Following the discussion, students were asked to demonstrate their understanding of these influences by creating Public Service Announcements (PSAs) designed to influence others to call 9−1−1 right away when they witness symptoms of stroke.

Limitations of this study have become apparent. Student attrition, defined as the percent of students who took a pre-test but did not take an interim test, was high between intervention years one and two (42% in the intervention group and 30% in the control group). A large proportion of those students lost were due to transfers out of the schools. No factors have been identified to explain the imbalance in the transfer rates between control and intervention schools. A large proportion of students remaining in the schools simply did not return an interim test (24% of the intervention students, 26% of the control students). The distribution and collection of interim tests was difficult and time consuming in both intervention and control schools as each student had to be individually located. This is a function of the cohort design of the study. With standard middle-school course scheduling issues, it was necessary in year 2 (7th grade) to ask students to miss an elective class on the days KIDS lessons and the interim test were given. Some teachers were unwilling to allow students to miss class for participation in KIDS. Once this problem was identified, KIDS staff members worked with the schools and teachers to educate them on the importance of participation and identify times to deliver the year 3 (8th grade) KIDS lessons and post-test that would be the least disruptive to student schedules. The interim test process thus served as a pilot for the post-test process, alerting KIDS staff members to potential student and parent/adult partner attrition issues that could be addressed prior to administering the post-tests and persistence tests.

We do not know if we were successful in transmitting stroke knowledge and behavioral intention to call 9−1−1 to the parents and other adult partners, as we were unable to collect an adequate number of adult interim-tests for analysis. Incentive prizes were used to increase the return rates of adult partner interim tests, but the percent returned was still too low. Most of the adult partners (83% intervention and 88% control) were between the ages of 30 and 49. It is possible that these adult partners did not participate because they didn't perceive themselves to be at risk for stroke due to their young ages. To address this, a lesson was added in year 3 to teach the students and their adult partners about stroke risk factors, including the increased stroke risk for MAs at an earlier age. The KIDS Project also stressed that a person having a stroke is often physically not able to call 9−1−1 for themselves and must rely on family members or other bystanders to call 9−1−1 for them.

Evaluating adult partners is a critical piece of this educational outreach. To correct for low response rates prior to completion of the intervention, greater efforts were planned for distributing and collecting adult post-tests and persistence tests. For example, a banquet for the students and their adult partners was scheduled for the end of the project at each of the schools with an opportunity to complete and turn in post-tests at the banquet. Since the persistence test occurs during the students' first year of high school, it is being mailed to students and adult partners, preceded by a notification postcard and accompanied by monetary incentives. Both of these survey strategies have been shown to increase return rates (Dillman, 2000).

CONCLUSION

Targeting the younger generation for stroke education is one way to improve community knowledge of stroke symptoms and the need for urgent evaluation, particularly in the MA community where rates of stroke are higher and occur at earlier ages, and family units are cohesive with frequent contact between multiple generations. This is especially important considering that less than 5% of stroke patients call 9−1−1 themselves due to an inability to speak or dial the telephone. Family members are most likely to be in a position to recognize the symptoms of stroke and call 9−1−1 immediately, increasing the chances that the stroke patient may receive acute stroke therapy.

A culturally specific stroke education intervention for middle school children so far appears to increase children's knowledge of stroke pathophysiology, stroke symptoms, stroke treatment and intent to call 9−1−1 upon witnessing a stroke. This could be a model for middle school-based stroke education in multi-ethnic communities. Using homework assignments to transmit this knowledge to parents of middle school students may or may not be effective and requires further study.

Ultimately, the determination of the success of projects aimed at reducing delay time to hospital arrival for acute stroke must involve surveillance of stroke cases in a community. This community has such a system, the Brain Attack Surveillance in Corpus Christi (BASIC) study (Morgenstern et al, 2004). We were not able to utilize this system to monitor the effect of KIDS due to the small proportion of students participating in the study. The study's next phase, an intervention involving all middle school students, may well utilize the BASIC system.

Acknowledgments

This study was funded by NIH grants P50 NS44227 and R01 NS38916. **Ethics**: The KIDS project was approved by the University of Michigan and University of Texas at Houston's Institutional Review Board and the CCISD Administration and Parent Review Board.

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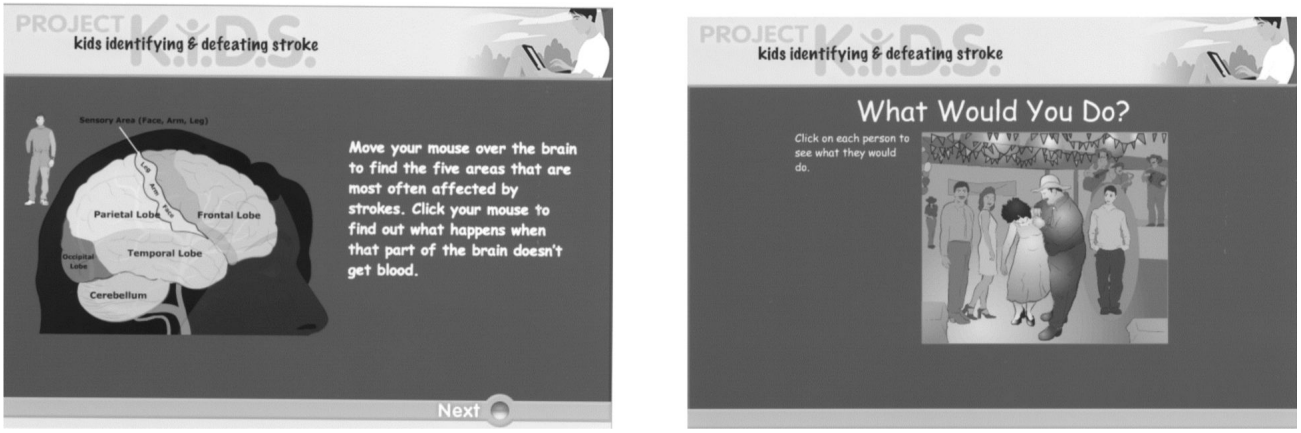

Figure 1.
KIDS Web Activity: Brain Attack Symptoms & Tejano Dance Interactive Stroke Scenario

Table 1

Summary of KIDS Middle School Curriculum by Year and Lesson

Lesson	Year 1	Year 2	Year 3
1	*Class*: Stroke is a Medical Emergency	*Class*: Why Doesn't Everyone Having a Stroke Have the Same Symptoms?	*Class*: What Do You Know About Brain Attacks?
	Homework: Stroke Symptoms Diagram	*Homework*: Why These Symptoms of Stroke?	*Homework*: What Do You Know Quiz
2	*Class*: Can You Recognize the Symptoms of Stroke?	*Class:* Making Posters to Teach Adult Partners About Stroke	*Class*: Understanding Influences on Seeking Emergency Care
	Homework: Stroke Scenarios	*Homework*: Explain & Display Brain Attack Poster	*Homework*: Review Influences on Calling 911
3	*Class*: How Does a Stroke Happen? (Artery Models)	*Class*: What Influences Someone to Call 911?	*Class*: Stroke: Risk & Prevention
	Homework: Demonstrate Artery Models	*Homework*: Influences Adult Partner Interview	*Homework*: Review Stroke Risk Factors & Symptoms Bookmark
4	*Class*: Brain Attack: What Do You Know? Review Game	*Class*: Coping with Stress During Emergencies	*Class*: Treating Strokes: A Success Story Video
	Homework: Review Scenario Answers (from Lesson 2)	*Homework*: Deep Breathing Practice with Stress Dots	*Homework*: Stroke Success Story *Fotonovela*

Table 2

Student Interim Test Results

Question Domains	Control Group (n=181)			Intervention Group (n=149)			Comparison of Improvement in Scores by ≥ 1 Between the Control and Intervention Groups
	Pre-Test	Interim Test	Change in Scores	Pre-Test	Interim Test	Change in Scores	
Stroke Pathophysiology	1.2	0.8	p<0.001	1.2	1.5	p=0.006	P < 0.001
Symptom Recognition	0.9	1.2	p=0.007	1.2	2.1	p<0.001	P < 0.001
Behavioral Intent and Treatment	1.3	1.5	p=0.004	1.5	2.7	p<0.001	P < 0.001