

# RAPIDO: Promoting stroke awareness among Spanish speakers

BY ALEJANDRA CASTRO; ANDREA ANCER LEAL, BSN, RN, LMSW; TAHANI CASAMENI MONTIEL; ANJAIL SHARRIEF, MD, MPH; MARY CARTER DENNY, MD, MPH; AND JENNIFER E.S. BEAUCHAMP, PhD, RN, FAAN

**Abstract:** The mnemonic BE-FAST (Balance, Eyes, Face, Arm, Speech, Time) has been developed for the public to better remember and identify the warning signs of stroke. However, discrepancies may arise when translating stroke educational materials from English to Spanish. This article discusses the use of a culturally tailored tool, RAPIDO, to raise stroke awareness in Spanish-speaking populations.

**Keywords:** health communication, health education, Hispanic, Spanish, stroke

The Hispanic population represents 18.9% of the US population, with a total of approximately 59 million citizens.<sup>1,2</sup> Hispanics of different cultures and backgrounds compose one the largest and fastest rising ethnic groups in the US.<sup>3</sup> Although the Hispanic population is burdened with comorbidities, increased risk factors for disease, and limited access to healthcare, Hispanics have lower case fatality rates than non-Hispanic Whites (NHW) for many diseases, including stroke.<sup>4</sup> However, the survival advantage appears to have recently diminished, and stroke incidence is higher in Hispanics compared with NHW.<sup>5</sup> Due to the heightened risk of new or recurrent stroke in Hispanics, targeted stroke awareness measures are needed to prevent further increase in stroke-related mortality. As Hispanic peers, nurses, and future nurses living in the US, we feel strongly about advocating for those in our community that experience healthcare disparities due to the lack of stroke awareness tools for Hispanic populations.

## Impact of English proficiency on healthcare access

Improving healthcare access to obtain health equity has been an objective by the US Department of Health and Human Services, particularly through its *Healthy People 2020* national health promotion initiative launched in 1980.<sup>6</sup> However, improved access to healthcare by establishing a primary care provider has made little impact toward achieving the 2020 health equity goal.<sup>7</sup> Hispanic populations are reported to have the worst rates of primary care access compared with all other ethnicities.<sup>8</sup> Furthermore, Hispanics, particularly those who prefer using the Spanish language, are twice as likely to be underinsured than their counterparts who prefer to use the English language.<sup>9</sup> The lack of culturally competent care, including language-appropriate patient education, impedes access to equitable healthcare for Hispanics.

An individual's health literacy is associated with health outcomes and status.<sup>10</sup> Individuals who reported low health literacy are more likely to

experience repeated hospitalizations and negative health outcomes.<sup>11</sup> Hispanic populations that report speaking English less than "very well" are categorized as having limited English proficiency (LEP).<sup>12</sup> Patients with LEP reported highly negative experiences related to overcoming the language barrier when accessing specialty healthcare.<sup>13</sup> Although the use of medical interpreters is often available in clinical settings, it is known that healthcare providers underuse the service considerably in patients with LEP.<sup>14</sup> In our bedside experiences, we have witnessed the extent of frustration that patients with LEP often encounter when healthcare teams underuse language services. This poses a great risk to Spanish-speaking patients in specialty healthcare settings given the complexity of their illnesses and the advanced patient education often required.<sup>13</sup>

Ethnic and racial minority groups with LEP are at a great disadvantage due to limited healthcare access and language gap between healthcare professionals and patients.<sup>15</sup> A study of LEP among Latino and Asian

minority populations suggested that LEP and lower health literacy posed a greater threat to health outcomes compared with limited or low health literacy alone.<sup>15</sup> Educational pamphlets intended for Spanish speakers are often translated from English to Spanish in an attempt to bridge the language barrier in healthcare; however, these attempts show no improvement in the level of health literacy, risk factor prevention, and survival advantage in the Hispanic population.<sup>16</sup> Further developments that create focused interventions targeting the improvement of health literacy in Spanish speakers are warranted.

In the realm of cerebrovascular disease and stroke, the time between stroke sign and symptom onset and treatment is crucially correlated to potential disability and mortality.<sup>17</sup> Hispanics have a greater prevalence of stroke risk factors and are more likely to have recurrent cerebrovascular events.<sup>18</sup> Spanish speakers are also less aware of stroke signs and

symptoms when compared with non-Hispanic Blacks or NHW and report lower medical knowledge when compared with NHW stroke survivors.<sup>19</sup> Continued low stroke awareness among Hispanic stroke survivors permeates sustained adverse outcomes in mortality and disability.<sup>16</sup> Given Hispanics' greater prevalence of stroke risk factors and lower health literacy, healthcare professionals must use effective techniques and tailored Spanish content in order to enhance stroke awareness in this population and provide patient-centered stroke education. Furthermore, providing stroke awareness and education to Hispanic populations is a pivotal part of the role of nurses.

### Identification of translational discrepancies

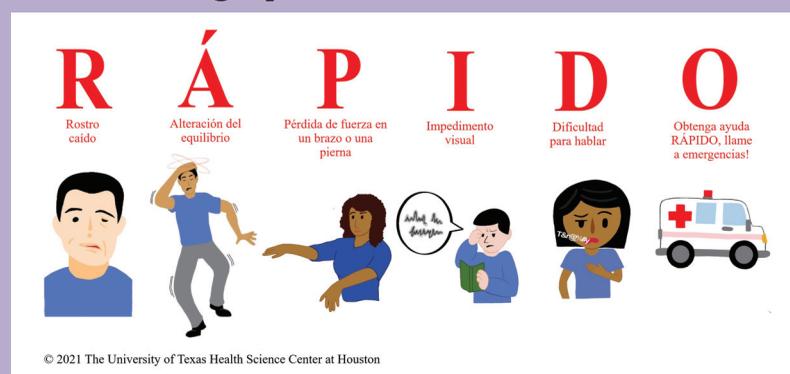
To promote stroke awareness among Spanish speakers, we translated a 5-minute educational video from English to Spanish by adding Spanish subtitles. This video was created for English-speaking stroke survivors

and their informal caregivers, such as spouses, to provide information about the types of strokes, signs and symptoms, stroke prevention strategies, and recommended lifestyle changes.<sup>20</sup> Our goal was to extend the reach of the video to Spanish speakers. During the translation process, we identified several translational discrepancies, lack of stroke-specific messaging for Spanish speakers, cultural differences among Spanish dialects, and varied medical terminology across languages.

The mnemonic BE-FAST (Balance, Eyes, Face, Arm, Speech, and Time) is a commonly used and endorsed tool that provides a quick summary of stroke signs and symptoms in English.<sup>21</sup> BE-FAST has shown to be effective at identifying patients with stroke who present with classic stroke symptomology and enhancing the possibility of rapid treatment, ultimately improving patient outcomes.<sup>22–26</sup> However, no known Spanish tool similar to the BE-FAST mnemonic has been developed to educate the Spanish-speaking Hispanic population in the US and direct them to activate emergency services.<sup>27</sup>

During our team's translation of the stroke educational video, we were unable to directly translate and adapt the BE-FAST content into Spanish that also fit the BE-FAST initials; therefore, the translation was ineffective in creating a useful mnemonic device. Language discordance creates a gap in translational accuracy and a deficiency in developing a concrete messaging of the BE-FAST mnemonic tool for the US Spanish-speaking population. The need for effective Spanish health literacy encompasses a larger issue within our healthcare system and cannot be addressed overnight; however, the nursing community can continue to advocate for underserved popula-

### RAPIDO infographic



Translation: "Rostro caído" - facial drooping, "Alteración del equilibrio" - loss of balance, "Pérdida de fuerza en un brazo o pierna" - unilateral weakness, "Impedimento visual" - visual impairment, "Dificultad para hablar" - difficulty speaking or understanding speech, and "Obtenga ayuda rapido, llame a emergencias!" - obtain help fast, call emergency services.

Adapted from the following: Animaker; Alabama Cooperative Extension System, by Tamara Warren, Kristen Campbell, Constance Wilson, 2019; VectorStock/bakhtiarzein.

tions by improving health literacy and pioneering language-specific messaging for at-risk populations.

Another problem we encountered was the differences in dialects among Spanish speakers of different cultures in the US. Although many Latinos identify Spanish as their native language, the differences in terminologies used to describe health disorders vary between cultural groups and geographic locations.<sup>28</sup> A study conducted in Spain found discrepancies in terminologies used to define stroke among participants living in the same country.<sup>28</sup> In the medical community in Spain, the word “ictus” is recognized as the common term for stroke. Yet the study discovered for some participants, “ictus” was not recognized as a term relating to stroke. Terms like transient ischemic attack or “ataque isquémico transitorio” are heavily unrecognized. The most common term used was “embolia,” which means embolism.<sup>28</sup> Spanish speakers in the US face greater difficulties with identifying specific medical terminology due to our diverse origins and cultures. This ambiguity requires translators to interpret the material and provide a translation with tailored content and terminology that can be understood by the targeted demographic. Our group chose to adapt the Spanish translation of the stroke educational video to Central American Spanish dialects due to the large number of Mexican Americans and Central Americans that make up the Hispanic population in our region.

### **Proposed solutions: RAPIDO**

We propose the creation of a mnemonic tool that standardizes stroke-specific messaging across the US Spanish-speaking population. This educational device is similar to BE-FAST regarding acute stroke

signs and symptom recognition. Our proposed mnemonic is RAPIDO: R is for “rostro caído” (facial drooping), A is for “alteración del equilibrio” (loss of balance), P is for “perdida de fuerza en un brazo o pierna” (unilateral weakness), I is for “impedimento visual” (visual impairment), D is for “dificultad para hablar” (difficulty speaking or understanding speech), and O is for “obtenga ayuda rapido, llame a emergencias!” (obtain help fast, call emergency services!). Using simple terminology is key to ensuring that learners understand the context of the material since individuals tend to easily remember personal and relatable information.<sup>29</sup> We also created a visual aid for RAPIDO that could be adapted into other stroke education tools. (See *RAPIDO infographic*.) This visual strategy amplifies the content and helps learners to better retain information.

RAPIDO provides a framework for stroke-specific interventions that address the interconnection between language, culture, health literacy, and health outcomes. The RAPIDO mnemonic has the potential to increase the likelihood of stroke awareness and stroke sign and symptom recognition among US Hispanics by targeting Spanish speakers who do not benefit from the BE-FAST mnemonic. In Costa Rica, researchers have developed a mnemonic to best fit their demographic. The CAMALEON mnemonic (CAra [face], MAño/brazo [hand/arm], Lenguaje [language], and teléFONO [telephone]) encompasses many important aspects of stroke symptomology.<sup>27</sup> However, the RAPIDO mnemonic sets the intention of obtaining medical assistance quickly which is a better-suited message for Spanish-speaking Americans. Nevertheless, further evaluation of the RAPIDO mnemonic and its function as an educational tool is

needed to determine its effectiveness for our targeted population. Once RAPIDO is evaluated and confirmed as an effective tool, the next step is to implement it in a Spanish stroke awareness campaign to provide culturally sensitive stroke education to US Spanish-speaking populations. ■

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Alejandra Castro is a student in the Cizik School of Nursing at the University of Texas Health Science Center (UTHealth). Andrea Ancer Leal is a nurse clinician at Ben Taub Hospital and a research assistant at UTHealth. Tahani Casameni Montiel is a research coordinator in the UTHealth's Cizik School of Nursing and a student at Texas Woman's University. Anjail Sharrief is an associate professor and the director of Stroke Prevention at UTHealth's Stroke Institute. Mary Carter Denny is an assistant professor with the department of neurology at MedStar Georgetown University Hospital in Washington, D.C. Jennifer E.S. Beauchamp is an associate professor at UTHealth's Cizik School of Nursing.

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