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BRIEF COMMUNICATION

Emergency Communications within the Limited English Proficient Chinese Community

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Abstract Limited English speaking communities face communication challenges during emergencies. Our objective was to investigate Chinese limited English proficiency individuals' perceptions of and inclination to interact with emergency communication systems. A telephone survey was conducted in Mandarin or Cantonese with 250 ethnic Chinese individuals who spoke little or no English. Respondents who spoke no English were less likely to name 9-1-1 as their first source of help for a medical emergency than those who spoke some English ($p < 0.01$). Those reporting higher levels of confidence in handling the situation were more likely to name 9-1-1 as their first source of help, as were those who listed 9-1-1 as their most trusted source of help ($p < 0.01$). For this group, the results indicate that calling 9-1-1 may require a sense of self-efficacy. Not calling 9-1-1 in a medical emergency can have serious health consequences, thus interventions are needed to increase confidence in accessing 9-1-1.

Keywords Underserved populations · English proficiency · Emergency preparedness · Telephone survey · Chinese-Americans

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Background

The unpredictable nature of disasters makes it unlikely that the level of preparedness of most individuals will fully fit the situation. Therefore, knowing where and how to obtain relevant information during an emergency situation and being able to communicate effectively are critical for optimal personal and community health and safety outcomes. However, seeking and understanding emergency information is especially challenging for substantial portions of the United States population who have limited English proficiency (LEP). This article reports on our survey research with Chinese LEP individuals about their knowledge and perceptions of telephone-based emergency communication systems, their inclination to seek information, and their information source preferences during emergency situations.

Methods

Applying a previously validated list of 50 Chinese last names [1, 2] to the greater Seattle area telephone listings, we identified 3,518 households with one of these names. Our study subjects are Chinese LEP who were 18 or older and spoke little or no English. Two trained trilingual interviewers (fluent in Mandarin, Cantonese, and English) conducted the telephone survey between April and July, 2010. We made 11 contact attempts for each phone number in our sample and offered a $10 gift card for participation. When identify eligible subjects by asking: Are you Chinese? How well do you speak English? If more than one person in the household fit these criteria, we asked to speak with the person with most recent birthday. If that person was not at home, we asked for suitable time to call. This

study was reviewed and approved by the Institutional Review Board of the University of Washington.

The survey presented the two hypothetical situations, each followed by a set of questions about participants' perceptions of the situation and where they would go for information and help. The hypothetical situations were intentionally selected to provide urgent and non-urgent circumstances. The first scenario involved news that ***a new type of flu*** causing sickness and hospitalization in the community. The participant is asked to imagine wondering if it is safe to go out to the store given the flu going around. In the second scenario, the participant is asked to imagine ***witnessing a friend fall off a ladder***. The friend is injured such that she is unable to stand by herself. Examples of the survey questions:

Example 1: Do you think this is a serious/urgent situation for you; How confident are you in dealing with this situation; How much help/information would you need to protect you and your family in this situation; If you need help/information, where would you go first to get help? (Responses: 9-1-1, hospital or clinic, a community based organization, friend, family member, King County Public Health Department); which of the sources would you trust in helping you deal/providing you information with this situation?

Results

A total of 1,788 phone numbers were called, reaching a total of 517 eligible individuals. Of these 517 individuals, 260 refused to participate, 7 agreed to participate but did not complete the interview, and 250 complete interviews were obtained, for a response rate of 48.4 %. We stopped calling when we successfully completed 250 given the budgetary constraints. About two-thirds of the respondents were female (n = 169), nearly half were over age 65 (n = 112), three-quarters were married (n = 181) and three-quarters lived in a household with no children under age 18 (n = 181). Education level varied with 38 % of respondents having less than 7 years of schooling and 19 % having more than 12 years, the remaining 44 % having between 7 and 12 years of education. Over 50 % of respondents have lived in the United States for 15 years or longer (n = 128).

Significant predictors for naming 9-1-1 as the first source of help for fall scenario included English proficiency, perceived need for help, level of trust in 9-1-1 and confidence in handling the situation. Respondents who spoke English "not at all" were significantly less likely to name 9-1-1 as their first source of help than those who spoke English "not well" ($p < 0.01$). Those who perceived themselves as needing "a lot" of help were less likely to name 9-1-1 than those needing "some or no" help ($p = 0.015$). Those reporting higher levels of confidence in handling the situation were more likely to name 9-1-1 as their first source of help, as were those who listed 9-1-1 as their most trusted source of help ($p < 0.01$).

Significant predicators of naming a community-based organization (CBO) as the first source of information for the flu scenario included English proficiency, level of trust in the information source and level of confidence in handling the situation. Respondents who spoke English "not at all" were more likely to name CBOs as their first source of information than those speaking English "not well" ($p < 0.01$). Those naming CBOs versus other sources as their most trusted source of information were more likely to seek information there first ($p < 0.01$). Those who were only "somewhat" or "not at all" confident in handling the flu situation where more likely to name CBOs as their first source of information than those who expressed more confidence ($p = 0.03$).

We conducted multivariate analysis for both scenarios. For the fall scenario, those who speak no English had 70 % lower odds of naming 9-1-1 as their first source of help than those who speak some English. Those who listed 9-1-1 as their most trusted source for help had 20 times higher odds of naming 9-1-1 as the first source of help. Those who were somewhat (OR 3.2) or very confident (OR 7.4) in handling the situation had higher odds of naming 9-1-1 as their first source of help. The only significant result for listing a CBO as the first source of information in the flu scenario was trust, with those who named a CBO as their most trusted source of information having 11 times higher odds of naming a CBO as their first source of information.

Discussion

Our results highlight the importance of trust for limited English speaking Chinese. When seeking help or information, trust in the source greatly increased the odds of the participant naming that source as where they would turn first. This result is in line with other studies of ethnic minorities that indicate trust is a critical factor in information and care seeking behavior [3–7]. Determining how to increase trust in sources that public health officials utilize to reach Chinese LEP communities could be beneficial in increasing the effectiveness of messaging.

The level of English proficiency played important roles in the results for both scenarios but, interestingly, in opposite ways. That those with no English skills are more likely to turn to CBOs for information may tell us that these organizations are good conduits of information, as is often their mission, for those most linguistically isolated. Additionally, CBOs were listed by those with lower levels of

confidence in their ability to handle the situation. The results from this survey suggest that this method of outreach may be effective for reaching those with limited self-efficacy and no English skills and should be confirmed with additional research.

For the fall scenario, those who spoke no English were significantly less likely to say they would call 9-1-1. Additionally, participants needing a lot of help to manage the situation and who reported less confidence in dealing with the situation were less likely to name 9-1-1 as their first source of help. This may indicate that, for Chinese LEP individuals, calling 9-1-1 requires a sense of self-efficacy—that feeling helpless or insecure may be a substantial barrier to reaching out for help from 9-1-1. These results are consistent with earlier focus group findings that showed significant barriers to calling 9-1-1 for Chinese LEP communities because of their perceived inability to communicate with the 9-1-1 operator in English [8]. The inclination to call someone other than 9-1-1 in a medical emergency can have serious health consequences if this action leads to a delay in care. Additional research should be conducted to develop interventions or messaging campaigns to increase confidence in accessing 9-1-1 for this population.

Limitations

One limitation in this study was the reliance on land lines to reach our study sample, which excluded households without a telephone and households with only cell phone service. A report from the Center of Diseases Control indicated that 25–30 % households in Washington State use a cell phone only [9]. Thus, we may have missed a portion of the LEP Chinese community that utilizes cell phones only.

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