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Barriers to Calling 911 and Learning and Performing Cardiopulmonary Resuscitation for Residents of Primarily Latino, High-Risk Neighborhoods in Denver, Colorado

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Abstract

Study objective—Individuals in neighborhoods composed of minority and lower socioeconomic status populations are more likely to have an out-of-hospital cardiac arrest event, less likely to have bystander cardiopulmonary resuscitation (CPR) performed, and less likely to survive. Latino cardiac arrest victims are 30% less likely than whites to have bystander CPR performed. The goal of this study is to identify barriers and facilitators to calling 911, and learning and performing CPR in 5 low-income, Latino neighborhoods in Denver, CO.

Methods—Six focus groups and 9 key informant interviews were conducted in Denver during the summer of 2012. Purposeful and snowball sampling, conducted by community liaisons, was used to recruit participants. Two reviewers analyzed the data to identify recurrent and unifying themes. A qualitative content analysis was used with a 5-stage iterative process to analyze each transcript.

Results—Six key barriers to calling 911 were identified: fear of becoming involved because of distrust of law enforcement, financial, immigration status, lack of recognition of cardiac arrest event, language, and violence. Seven cultural barriers were identified that may preclude performance of bystander CPR: age, sex, immigration status, language, racism, strangers, and fear of touching someone. Participants suggested that increasing availability of tailored education in Spanish, increasing the number of bilingual 911 dispatchers, and policy-level changes, including CPR as a requirement for graduation and strengthening Good Samaritan laws, may serve as potential facilitators in increasing the provision of bystander CPR.

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Conclusion—Distrust of law enforcement, language concerns, lack of recognition of cardiac arrest, and financial issues must be addressed when community-based CPR educational programs for Latinos are implemented.

Provision of bystander cardiopulmonary resuscitation (CPR) is an important link in the chain of survival.[1] Research has shown that CPR can double or even triple a person's chance of surviving a cardiac arrest event.[2,3] However, health inequities exist. Black and Latino cardiac arrest victims are 30% less likely than whites to have bystander CPR performed.[4] Individuals in neighborhoods composed of minority and lower socioeconomic status populations are more likely to have an out-of-hospital cardiac arrest event, less likely to have bystander CPR performed, and less likely to survive.[5-10] Previous research has shown that these neighborhoods can be identified and targeted for potential out-of-hospital cardiac arrest interventions designed to address these issues.[3,11-13]

To increase bystander CPR rates, it is important to understand the barriers to learning and performing CPR. Our previous research in lower-income, primarily black neighborhoods in Columbus, OH,[14] identified 3 major barriers to learning CPR, which included financial, informational, and motivational factors. We also identified barriers to performing CPR that included fear of legal consequences, emotional issues, knowledge, and risk to personal health. Participants suggested that family or self-preservation, emotional, and economic factors may serve as potential facilitators in increasing the provision of bystander CPR.

Although to our knowledge this was the first study to identify barriers in blacks, little is known about how these barriers and facilitators differ for other racial or ethnic groups. As a result, we wanted to specifically study whether the results from Columbus were applicable to high-risk neighborhood residents in Denver, CO. In accordance with previous research,[11,12,15] we identified 5 neighborhoods in Denver in which the incidence of out-of-hospital cardiac arrest was 2 to 5 times higher than the median for the county and rates of bystander CPR were below average.[16] These high-risk neighborhoods were composed of primarily Latinos and lower socioeconomic status residents.

Before we implemented a targeted CPR intervention in these high-risk neighborhoods, we wanted to understand the underlying barriers and facilitators to calling 911, learning and performing CPR for the residents. Therefore, the goal of this research was to use qualitative methods to understand common barriers that may decrease use of 911 and learning or performing bystander CPR for out-of-hospital cardiac arrest victims in primarily lower-income, Latino neighborhoods in Denver.

MATERIALS AND METHODS

Setting

The city and county of Denver has a population of 634,256 individuals and covers approximately 153 square miles, with 52.7% of residents classified as white, 31.7% as Hispanic or Latino, and 10.4% as black by the 2010 US Census Bureau.[17] It has a consolidated city and county government composed of 78 statistical neighborhoods defined by the Denver Regional Council of Governments, made up of 144 census tracts,[17] which are

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administrative units that have been used as proxies for neighborhoods in community- and neighborhood-level analysis because they are designed to represent social and economically homogenous groups of approximately 2,500 to 8,000 persons.[18,19]

Three spatial analytical methods were used to identify high-risk neighborhoods (defined as having a high out-of-hospital cardiac arrest incidence and low prevalence of bystander CPR). The analytic approach that was used to identify these census tracts was based on previous research using geographic information systems.[15] Briefly, data from the Denver subset of the Cardiac Arrest Registry to Enhance Survival data set, an ongoing out-of-hospital cardiac arrest surveillance registry that collects data from emergency medical services (EMS) systems throughout the United States,[20] were used to identify high-risk neighborhoods (defined by census tracts) in Denver. Consecutive adults (≥18 years) who experienced out-of-hospital cardiac arrest of cardiac cause and were treated by EMS were studied during January 1, 2009, to December 31, 2011. Data were geocoded with ArcGIS (version 9.3; Environmental Systems Research Institute Inc., Redlands, CA) and Geoda software (http://geodacenter.asu.edu), and spatial analysis methods were used to identify high-risk census tracts.[16]

Five of the 13 neighborhoods identified as high risk were chosen as target areas for the study, according to existing community partnerships, consultation with community liaisons who thought that these neighborhoods would have the most diverse experiences, and the emphasis to study cultural barriers primarily in Latinos. The neighborhoods had a crude annual incidence of out-of-hospital cardiac arrest that ranged from 1.06 to 1.33 per 1,000 people (Denver County mean 0.67 per 1,000). During the 3-year study period, bystander CPR prevalence ranged from 0% to 15% (Denver County mean 19%). These 5 neighborhoods were composed of residents who were primarily Hispanic or Latino (range 16.3% to 83.9%; Denver County mean 31.5%), black (range 0% to 40.2%; Denver County mean 10.4%), or had a lower median household income (range $24,907 to $39,432; Denver County mean $49,041).[17]

Study Design

We used community-based participatory research principles; particularly, soliciting perspectives from diverse community members who have a stake in the outcome is critical to ensure success of any future intervention.[21] We chose to use qualitative methods with both focus groups and detailed semistructured interviews. Focus groups allowed residents who were both English- and Spanish-speaking from Denver's high-risk neighborhoods to discuss their understanding of cardiac arrest and CPR. Detailed interviews with community leaders provided a closer look at the barriers raised by the focus groups and how to incorporate existing resources to develop a neighborhood-based CPR intervention. Participants were allowed to take part only in an interview or focus group. All community members who were aged 13 years or older, spoke either English or Spanish, and resided in the high-risk neighborhoods were eligible for participation.

Community liaisons, who were leaders from the target neighborhoods, recruited focus group participants and key informants by using a mixture of purposeful and snowball sampling techniques during the spring and summer of 2012. Community liaisons were chosen

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according to their existing relationships in the target neighborhoods, leadership positions within their own neighborhoods and the University of Colorado, and their involvement with multiple previous community-based studies.[22-25] We recruited residents of the 5 target neighborhoods so that we could have a focus group composed of residents from the same neighborhood (purposeful sample). One to 2 focus groups were conducted in each of the 5 neighborhoods (total of 6 focus groups).[26] We asked respondents who agreed to attend the focus groups to recommend others who also live in the target neighborhoods and assist us in recruiting for future focus groups (snowball sample). Snowball sampling identifies study participants, who then recruit other potential focus group members to participate in the study. We continued to recruit participants in the focus groups and key informant interviews until our target sample size and saturation of themes were reached.[27] A priori, we divided groups according to the neighborhood in which the participants lived, as well as the primary language spoken at home. Focus groups were stratified by neighborhood because we were interested in neighborhood-level factors that may affect the likelihood of performing CPR. Participants could also choose which language they felt most comfortable speaking. We had postulated that concerns may be different for individuals not primarily speaking English. Written informed consent was obtained from each participant in their primary language for the audiotaping of the focus groups and interviews. For children aged 13 to 17 years, we required a parental signature on the consent form. Each study participant received a $10 gift card for participation. The research protocol was approved by the Colorado Multiple Institutional Review Board.

We employed 2 trained moderators who were fluent in both English and Spanish to conduct the focus groups and interviews. In total, we had 55 focus group participants (in 6 focus groups) and 9 key informant interviews. Each focus group lasted approximately 60 to 120 minutes, engaging 6 to 15 participants in each group. Interviews lasted approximately 30 to 90 minutes. The same interview guide was used for focus groups and interviews (Appendix E1, available online at http://www.annemergmed.com).

Data Collection and Processing and Primary Data Analysis

We conducted a content analysis of these data.[28] Coding and analysis of data was facilitated by use of NVivo (version 9.0; QSR International, Doncaster, Victoria, Australia). A qualitative content analysis was used with a 5-stage iterative process to analyze each transcript: development of a coding schedule, coding of the data, description of the main categories, linking of categories into major themes, and the development of explanations for the relations among themes.[29,30] Before data collection, an initial codebook was created containing codes and categories of themes, concepts, events, people, and actions which may be encountered in the data. These a priori codes were based on what the investigators may expect to find according to the literature and what the investigators hoped to find according to the research questions. Coding strategies were based on the grounded theory techniques of open, axial, and summary coding.[31] Open coding is used to name and categorize key concepts, categories, and patterns of experience by breaking down, examining, comparing, and grouping phenomena. Axial coding is used to specify the relationships and interrelationships of categories to the phenomenon under study (ie, preferences for time of day for messages and sex-defined preferences for message content). Summary coding

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synthesized open and axial codes into key themes and categories to summarize all the content.

First, overriding themes were identified and compared across the content areas. These themes were then grouped together or assigned to subthemes. Two reviewers (C.S., L.B.Y.) read through each transcript independently and coded all transcripts line by line. The 2 reviewers then met to discuss the transcipts to expand and refine existing categories iteratively. No intercoder agreement statistics were calculated, but disagreements were resolved by consensus by the full study team. Two types of audit processes were used to ensure that the content was validated. First, respondent validation was conducted: At the end of the first 3 focus groups, and then again at the end of the coding of the study, the codebook was distributed to the entire research team (including the community liaisons) for input and validation. Second, multiple coders also independently coded each transcript and then met to discuss major themes.[32]

RESULTS

Demographics of the 64 focus group participants and key informants are included in Table 1. The majority of the participants were aged 30 years or older (70%), women (75%), and Latino (88%). Forty-seven percent of the participants had not completed high school. Almost half of the participants (46%) had an annual household income of less than $30,000. The final data were presented to the community by printed materials and 2 oral presentations in 2 of the high-risk neighborhoods.

Our analyses identified 6 key barriers to calling 911: fear of becoming involved because of law enforcement, financial, immigration status, lack of recognition of cardiac arrest event, language concerns, and violence (Table 2). For example, the effect of documentation status on the individual and for others who lived in their residence was an important determinant of whether 911 would be called. Multiple study participants voiced concerns about police first responders coming on scene and asking for identification before the victim would be assisted. There was a general distrust of law enforcement, of which 911 services were bundled. Participants did not want to call 911 for others because they were afraid to get involved, especially if illegal activities were occurring in the neighborhood or within their own family or house. Gangs, violence, and fear of retaliation for calling 911 and having police show up in the neighborhood were all major concerns voiced in all 6 focus groups. In addition, participants were concerned about the financial implications of calling an ambulance because many were currently working multiple jobs just to afford bare necessities such as food and shelter and did not want the victim to incur additional cost. Finally, language concerns affected the likelihood of calling 911. Participants were frustrated that they may be placed on hold during an emergency situation because a 911 dispatcher would need to connect with a translator.

Study participants reported the following barriers to learning CPR: financial (eg, cost, transportation to site, child care), informational (eg, lack of understanding about what a cardiac arrest is and how CPR can save a life, lack of awareness about upcoming classes, lack of access to technology, few resources for non–English-speaking people), and

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motivational (eg, personal health concerns, financial disincentives). However, there was a unique barrier that related to cultural issues of first- versus third- or fourth-generational immigrants. One study participant stated the following:

"Just because we don't have people knocking on the door doesn't mean that people don't want it. I think part of it is that people don't know what the potential benefits of it are. You know, I'm not sure how many people are exposed. We have had a lot of folks that have emigrated from Mexico, so I don't know what their health awareness level is, versus maybe folks that have been here a long time. Or even if they have been here a long time…how important it is. All of a sudden they realize that all their family members have died of a heart attack or a stroke and they don't really know what that all means yet."

It is possible that the awareness of cardiac arrest and importance of bystander CPR may not be as high in other countries. As a result, there may be a significant lack of understanding and familiarity with CPR. Multiple study participants believed that a first step to facilitating the learning of bystander CPR was to lobby for policy environment change by requiring CPR as a graduation requirement. Then, schools could be used to train not only students but also families. A focus group participant stated the following:

"In conjunction with the students being educated is that it gets to the parents of those same students. Then they talk about it and then with the large Hispanic and the large Mexican population that has recently immigrated. Then they would feel more comfortable that this is, especially within a school setting, that they would just feel the authority that is behind it, more confidence and more willingness to do it."

Study participants reported commonly cited barriers to performing CPR: fear of legal consequences (eg, fear of lawsuit, misunderstanding of Good Samaritan laws, age of cardiac arrest victim), emotional disconnection from community (eg, lack of community cohesion, questioning whether other residents would stop to assist), knowledge (eg, unsure of how and when to perform CPR, confusion from frequent CPR guideline changes, fear of doing it incorrectly), and risk to personal health (eg, administering mouth-to-mouth resuscitation to a stranger, unsafe setting).

There were some additional cultural barriers that were identified in the primarily lower-income Latino study population (Table 3). Age and sex affected the likelihood of performing CPR on a person of a different sex or age. For example, participants believed that there may be concerns about performing CPR on a child, a man performing CPR on a woman, or touching the chest of a cardiac arrest victim. In both instances, participants were concerned that their attempts to help by performing CPR on a victim may be misconstrued. There was also fear that if police and paramedics arrived on scene, they would ask the bystander for identification or blame the bystander for the victim's health condition. Language concerns were an additional reason for not performing CPR. Participants were concerned there would not be a bidirectional mode of communication either with the dispatcher or with the responding EMS. Finally, racism affected the likelihood of performing CPR. For example, participants stated that there are many gangs in their community that are Latino or black, so according to the victim's race, people were afraid that bystanders would not get involved.

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Participants suggested ways to increase the number of people who were trained in bystander CPR. They believed that having their own data, such as the number of people who receive bystander CPR in their own neighborhood, may motivate people and increase training numbers. They would be more likely to take on opportunities to spread CPR training. Personal survivor stories, especially in their own cultural groups, were also influential and would increase people's motivation to learn CPR if the person was similar in age, race or ethnicity, or sex. Participants also believed that 2 policy changes could have a major effect on increasing the number of people who are trained in CPR. Participants suggested that making CPR a requirement for graduation from high school or for receiving a driver's license were also important methods to increase training. Finally, working with local, trusted community-based organizations (eg, churches, small businesses) was an important way to spread knowledge about cardiac arrest and the importance of bystander CPR.

Participants also suggested ways to increase the performance of bystander CPR. At the individual level, participants stated that certain cues to action, such as culturally tailored messaging and bilingual 911 dispatchers, would play a critical role in their decision to perform bystander CPR. Participants believed that they would be more likely to perform CPR now that they had had the training and were able to practice performing CPR on the manikins. Increasing the number of people who knew CPR, as well as the level of trust and reciprocity between neighbors, would make them more likely to act in a cardiac arrest. Finally, increasing the knowledge of Good Samaritan laws would also make them more likely to act, knowing that they would not be punished if the victim did not survive the cardiac arrest.

LIMITATIONS

This was an exploratory study to help understand barriers to calling 911 and cultural barriers for CPR provision in high-risk neighborhoods. We had a small number of participants, so generalizability is a concern. However, the individuals we interviewed were from the target areas and primarily Latino, and the majority had household incomes below $30,000 per year. Although it is possible for additional focus groups to elicit newer information, the team believed that a saturation of themes was obtained in the process of analyzing the 6 focus groups and 9 key informant interviews. Furthermore, there may also be some selection bias in the sample because the study participants were all recruited from the area by community liaisons who lived and worked in the neighborhoods and were primarily women. However, because we were most interested in reaching a target population living in the highest-risk neighborhoods that is traditionally difficult to reach, this was actually a strength of the study. Research will need to be conducted to examine how the barriers to calling 911 elucidated in this research may be similar or different in nonminority populations, men, and other groups (eg, limited English proficiency, lower-income neighborhoods in other cities). Groups were also recruited by community liaisons who lived in the area to allow participants to feel more comfortable disclosing their thoughts about why bystander CPR prevalence was low in their neighborhoods.

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DISCUSSION

To our knowledge, this is the first study of residents of primarily lower-income, Latino neighborhoods to attempt to reveal common barriers that may decrease use of 911 and learning or performing bystander CPR for out-of-hospital cardiac arrest victims. The barriers identified in this research may change the way in which public education campaigns for early recognition and activation of 911 are implemented in the community.

The fear of becoming involved because of the distrust of law enforcement, a result of possible undocumented status or outstanding warrants, was a common barrier that precluded our high-risk neighborhood residents from calling 911. The fear and distrust of police has been documented in other disease states[33-36]; however, this concern has never been addressed in the activation of 911 services for out-of-hospital cardiac arrest victims. Communities may want to work closely with law enforcement and EMS to ensure that police, fire, and first responders do not ask for any type of documentation before assisting the person. This information must be addressed in community-based CPR training so that the fear of deportation or outstanding warrants does not deter individuals from activating 911 services. Another suggestion provided by our study participants was that law enforcement participate in the training in the community to help reassure residents in these high-risk neighborhoods that police are willing to help.

Language barriers were also an important concern for study participants. Previous research has shown that callers with limited English proficiency are more likely to have significant delays in the timing and receipt of lifesaving interventions by dispatchers (eg, hands-only CPR instruction).[37,38] Many of our participants believed that if they called 911, they were unlikely to have a competent interpreter who could assist them in their primary language. In addition, participants were unsure of where to go to receive CPR training in Spanish outside of the school system. Previous research has shown that there is a paucity of accurate information available on CPR for Spanish-speaking audiences on the Internet.[39] Therefore, a concerted public education effort must be made to educate Spanish-speaking audiences about CPR. It is also imperative that 911 call centers be equipped to handle calls in multiple languages, without significant holding periods for callers with limited English proficiency. Because there can sometimes be a delay in communicating the urgency of the situation, community CPR training should also teach callers to say key words to say such as “heart stopped,” and “Spanish interpreter,” so that delays can be avoided in identifying the type of call being made (with the corresponding level of emergency response) and the language that is needed for interpretation services.

Lack of recognition of out-of-hospital cardiac arrest symptoms was also identified as a common barrier to calling 911 and performing CPR. Study participants suggested that additional time be given to discussing how to recognize a potential out-of-hospital cardiac arrest victim, given that the awareness of cardiac arrest and bystander CPR is low in Spanish-speaking countries.[40] This highlights the importance of continuing public education efforts by organizations such as the American Heart Association and the American Red Cross in educating the public about the myriad ways in which out-of-hospital cardiac arrest patients can present. Once again, the importance of early recognition, especially for

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community members who may emigrate from other countries, must be considered core content for community-based CPR training.

Finally, financial costs of 911 activation were another significant barrier to 911 use. According to study participants, in Mexico, patients' families must pay before transport can occur. Even in the United States, these cultural ideas about 911 persist and community members are hesitant to call for EMS because they do not have the means to pay for transport at EMS arrival.[33,36] This vital information must be addressed in community-based CPR training so that neighborhood residents are aware they do not need to pay up front and can be billed later. Even with this barrier addressed, community members may still be hesitant to call 911 because of the high cost of ambulance transport versus waiting for a family member or friend to drive them to the hospital. This may be an important consideration for public education campaigns that are being created to decrease time to the hospital for time-sensitive conditions such as cardiac arrest, myocardial infarction, and stroke.

Distrust of law enforcement, language concerns, lack of recognition of cardiac arrest, and financial issues must be addressed when community-based CPR educational programs are implemented for Latinos. Research will need to be conducted to better understand how culturally sensitive, tailored public education campaigns may affect the provision of bystander CPR and ultimately out-of-hospital cardiac arrest survival in high-risk neighborhoods.

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APPENDIX E1

Interview guide

1. Opening
    a. Tell us your name, where you are from. [Get demographic info from registration form given in beginning.]
2. Introductory
    a. What would you do if someone suddenly fell down in front of you and appeared to be unconscious?
    b. Have you ever seen someone do this? What did you do? What did other people do?

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c. What is your understanding of the things that can cause someone to fall down? [Probe: do they know the difference between a heart attack and heart arrest?]

3. Transition

a. What is your understanding of CPR and what is it that CPR is doing?

b. Have you ever seen someone do CPR? [Probe: If so, who and what were the circumstances?]

c. Have you done it yourself? [Probe: If so, why did you decide to perform CPR? If you did not do CPR, why did you not perform CPR?]

d. How many of you have taken a course in CPR? When and what type of training have you done?

e. How and why did you decide to learn CPR?

f. How did you hear about CPR training?

g. If you are not trained in CPR, what are your thoughts about taking a CPR course?

4. Key

a. What would you do if you were out on the street in your neighborhood and you and your neighbors saw someone fall down? [Probe: What if you found out they weren't breathing and didn't seem to have a pulse?] [Probe for reasons for answer.] [Probe for possible differences if somebody they knew or if a stranger.]

b. What would be the obstacles that would make people not do CPR? What might make it easier for people to do CPR?

c. Generally speaking, how do you think people in your neighborhood would respond if you were in trouble? [Probe for reasons.]

d. How do you think people in your neighborhood would respond if you fell down? [Probe: If you weren't breathing and didn't have a pulse?] [Probe for reasons.] [Probe differences between known vs strangers.] [Could probe for differences between in own neighborhood and other places—what places—and based on race or other characteristics.]

e. What would make people want to or not want to take a CPR class?

f. What would be the best way to let people in your community know that CPR training was going to occur (ie, e-mail, news media, flyers, etc)?

g. What kinds of incentives would it take to get people to attend training (ie, food, CPR kit, magnet)?

h. What is your understanding of hands-only CPR?

i. How did you hear about this?

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j. If we were to teach you to do CPR only with your hands, without having to blow into someone's mouth, how might that affect your likelihood of doing CPR? Why or why not?

k. [Bring out CPR Anytime kit.] Has anyone ever seen or used one of these?

l. [Play the first 8 minutes of the CPR Anytime kit.] What do you make of this kit? [Probe: how do you feel about the people in the video? How does this training video make you feel? Would you feel comfortable performing CPR after this training?]

m. What would make you more likely to take this home and teach your family members?

n. What would make people in your community decide to take CPR training?

o. How can we best work together to get the message and trainings out to your communities? [Write things down on a flip chart.]

p. What do you see as the priority areas for your neighborhood right now? Do you see CPR training as being a high enough priority for this to be implemented in your area? Why and why not?

q. What kind of role would you be interested in playing in this promoting CPR in your community?

5. Ending

a. What else have we not covered? Have we missed anything?

Prefocus group questions:

Now I'm going to ask you how many times you've done certain things in the past 12 months, if at all. For all of these, I want you just to give me your best guess, and don't worry that you might be off a little. About how many times in the past 12 months have you [activity]:

Note: for all questions 5a to 5k, interviewer probes for an actual number and if respondent cannot provide an actual number, the interviewer follows up with this: Would you say you never did this, did it once, a few times, about once a month on average, twice a month, about once a week on average, or more often than that? [If respondent answers "a few times," probe with the following: Would that be closer to 2 to 4 times or 5 to 9 times?]

[How many times in the past 12 months have you]

a. had friends over to your home?

b. been in the home of someone of a different neighborhood or had them in your home?

c. been in the home of someone of a different race or had them in your home?

d. worked on a community project?

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e. donated blood?

f. attended any public meeting in which there was discussion of town or school affairs?

g. attended a political meeting or rally?

h. attended any club or organizational meeting (not including meetings for work)?

i. been in the home of someone you consider to be a community leader or had one in your home?

j. volunteered?

k. served as an officer or served on a committee of any local club or organization?

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Editor's Capsule Summary

What is already known on this topic

Poor and minority neighborhoods have higher rates of out-of-hospital cardiac arrest and lower rates of bystander cardiopulmonary resuscitation (CPR) and survival.

What question this study addressed

Using focus groups and interviews, the study explored factors that hindered or promoted calling 911 and performing CPR in 5 low-income Latino neighborhoods in 1 city.

What this study adds to our knowledge

Distrust of law enforcement, language barriers, lack of recognition of cardiac arrest, and financial concerns were the key issues identified.

How this is relevant to clinical practice

Although this information is unlikely to directly change practice, medical directors and policy planners can use it to tailor outreach programs.

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Table 1

Demographics of focus groups and key informant interviews.

Characteristic	Count (n=64)	Percentage
Age, y *		
<20	7	11
20–39	28	44
40–59	18	29
≥60	9	15
Sex †		
Female	47	75
Race/ethnicity †		
Latino	55	88
Black	1	2
White	4	6
Other	3	4
Education (highest level) †		
Primary school, some high school	30	47
Completed high school	6	10
Some college	13	21
Completed college	5	8
Master’s degree/doctorate degree	9	14
Annual household income, $		
<10,000	10	16
10,001–20,000	14	22
20,001–30,000	5	8
30,001–50,000	9	14
50,001–100,0000	9	14
100,001–200,000	4	6
Unknown	13	20

* Of the 64 total participants who filled out the prefocus group survey, only 62 provided an age.

† Only 63 of the 64 participants provided a sex, race or ethnicity, and education.

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Table 2

Barriers to calling 911.

Code	Illustrative Quotes
Immigration status	Quote 1: Interaction with the law enforcement if they had to give their name and would they be afraid that they would check; you know, we do have a lot of undocumented people who live in our neighborhood who are around here that are afraid, you know. The law enforcement is not positive. Quote 2: Also there are some people who don't have [legal] papers.… They also think that if we go to the hospital they won't be able to treat us because of that.
Fear of becoming involved	Quote 1: Well, I think in order to avoid getting involved with problems with the law, or any other things…I think that it's one of the first fear(s) one can have. If I get involved, they'll think I did something to them, so it's better to… Quote 2: You are afraid that they'll think that you had something to do with what has happened, and because of this sometimes you don't help right away…because you could get involved in a problem.
Violence	Quote 1: And I think part of it too is sometimes there's a perception that there's a lot of illegal activity going on, and they're afraid that if they call the police officers or the ambulance that the neighbors are going to get mad at them and retaliate. Quote 2: I actually called 911 once, and the boyfriend of the woman who I felt had quit breathing came in and was going to kick my ass because she had overdosed on heroin. That would have been a pretty good motivation not to have called 911.
Financial	Quote: We've talked about it before, 'cause it's happened to us where somebody called 911 over an allergy reaction and we all ended up with big, big bills, I mean, big expense and…and so we've learned, if I get sick don't call 911!
Language	Quote 1: Subject: But I think a lot of, you also have to take into consideration that a lot of people that live in this neighborhood only speak Spanish, so if you have someone only speaking English trying to tell them how to do CPR, it's going to fail. So there is a need to have a translation there, and I know it's horrible to be put on hold but at the same time you want it done to where it's successful, and not hindered. Quote 2: I think it's hold, everybody gets tired of being put on hold…and even if it's for a split second, they say, "Hold on, let me transfer you to someone" or whatever, or "Hold on, let me have.…" No one wants, to say "hold on," you know. Now here I am, trying to do something, and you're telling me to hold on.
Lack of recognition of cardiac arrest event	Quote: They may think that the person is going to come back, maybe they have temporarily fainted, or something like that. They may not know what to do, so they are in a panic. They may not be able to respond right away to that, or know what they should do.

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Table 3

Cultural barriers to performing bystander CPR.

Code	Illustrative Quote
Age	Because people might look at you different, because it's like an older person, helping a younger person. Like maybe touching them wrong, or stuff like that.
Sex	If a guy sees a girl collapse, that like, he doesn't want to interact with her. There's, like I don't know, space issues, like, with female and male.
Immigration status	I think people don't react because of fear, communication. They don't want to be involved…because they have a criminal history, or because of immigration issues.
Language	There needs to be 2-way communication, not just simple instructions [with the dispatcher]. Like, if the person receiving CPR begins to go into convulsions, or if they have a lot of bleeding also at the same time. I mean, there could be a lot of complications.
Racism	They don't want to get involved and be known as someone who is helping someone else's gang, or someone else's culture, or someone else's color or creed because, you know, racism exists and hate exists and that probably is never going to go away.
Stranger	If it's a close person…but if it's a stranger you would think twice. I mean, I'm not going to give mouth-to-mouth respiration to a person I've never seen before in my life.
Touching another person	And then also, the hesitancy that there is, and I don't know if it's limited to Hispanic culture or not, but the hesitancy to touch another person, especially in the chest, and if it's a woman, oh my goodness.… Uh, there is great hesitations on the older people's part.