

Community Risk Reduction within the Hispanic Population of Council Bluffs, Iowa

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Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of other is set forth, quotation marks so indicate, and that appropriate credit is given where I used the language, ideas, expressions, or writings of others.

SIGNED:

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Abstract

The problem was that it was unknown if the current community risk reduction program offered by the Council Bluffs Fire Department was having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Iowa. The purpose of this applied research project was to determine if the current community risk reduction program was having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Iowa. Descriptive research was used in order to answer the following research questions; (a) how well do Hispanic citizens understand and retain fire prevention and safety messages taught in their current format, (b) what are the cultural obstacles to delivering effective fire and life safety education to the Hispanic community, (c) what are the internal obstacles to delivering effective fire and life safety education to the Hispanic community, and (d) what have other fire departments done to address the community risk reduction needs of the Hispanic community? Procedures included extensive analysis of demographic data, a comprehensive literature review, three survey instruments, and one personal interview. The survey instruments included a fire safety quiz for grade school children, internal survey, and external survey. The results of the research established that significant barriers exist that could negatively affect the understanding and retention of the community risk reduction programs among Hispanic citizens. These obstacles included; a language barrier, lack of understanding Hispanic culture, and socioeconomic factors. Recommendations included; develop of a comprehensive plan to address the needs of the Hispanic community, canvassing Hispanic neighborhoods that contain vulnerable populations, develop strategies for improving communications, and increase interaction with the Hispanic community.

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Community Risk Reduction within the Hispanic Population of Council Bluffs, Iowa

The mission of the Council Bluffs Fire Department (CBFD) is to protect the lives and property of the citizens of Council Bluffs against fire and other emergencies. The men and women of the CBFD strive to achieve this mission every day by responding to and mitigating a multitude of different types of calls for assistance by our citizens. In addition to emergency response, members of the CBFD work diligently to prevent fire and other emergencies through community risk reduction (CRR) activities. The current CRR programs offered by the CBFD have evolved significantly since the fire prevention bureau formed in 1950. Those changes were based on the advancement of fire codes, technological improvements, and changes in the types of hazards our citizen's face. While the CRR programs have made positive changes in many areas, improvements in the cultural diversity of the message have lagged behind.

The problem is that it is unknown if the current CRR program offered by the CBFD is having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Ia. The purpose of this applied research project is to determine if the current CRR program is having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Ia. The descriptive research method will be utilized to answer four research questions; (a) how well do Hispanic citizens understand and retain fire prevention and safety messages taught in their current format, (b) what are the cultural obstacles to delivering effective fire and life safety education to the Hispanic community, (c) what are the internal obstacles to delivering effective fire and life safety education to the Hispanic community, and (d) what have other fire departments done to address the community risk reduction needs of the Hispanic community?

Background and Significance

The Council Bluffs (IA) Fire Department has a long, rich history of providing quality emergency response services to its citizens. The department was formed on January 5, 1883, by resolution of the city council to establish a full-time, paid department (Petersen, 1992). This resolution came after numerous devastating fires exceeded the capabilities of the several volunteer fire companies that had protected the city during the previous 29 years. In 1918, the firefighters of the Cbfd organized and became a charter member of the International Association of Fire Fighters (IAFF) forming Local 15. Membership with the IAFF is an affiliation that the labor force of the Cbfd still maintains today. During the mid-20th century, the Cbfd continued to grow, adding personnel and stations as the population of the city expanded. In 1950, the leadership of the Cbfd recognized the potential value of fire safety education and began staffing a fire prevention bureau for the first time in its history (Petersen, 1992).

By 1970, the Cbfd was working out of four fire stations protecting a population of 60,348. Beginning in the mid-1970s, the city of Council Bluffs struggled economically, and the population decreased 10.3% by 1990 ("Profile," 2000). "The authorized staffing was 86 firefighters by 1988 as the city and the fire department worked through two decades of economic stagnation" (Rodewald, 2015, p. 7).

Currently, the Cbfd has an authorized staffing of 107 personnel working out of five stations and responding to approximately 9,000 emergency calls per year. Response apparatus of the Cbfd consists of five engines, two reserve engines, two quint companies, three ambulances, two reserve ambulances, one hazardous materials truck, one brush truck, three rescue boats, one hovercraft, one mobile command center, two light-rescue trucks, and eight staff cars. The Cbfd

provides all-hazards response that includes fire suppression, advanced life support ambulance service, hazardous materials response, and numerous technical rescue disciplines. The hazardous materials team is a regional response asset covering seven Iowa counties and is part of the weapons of mass destruction response team for the state of Iowa.

The training division consists of two personnel (a drill master and technical services officer) who provide initial education for new recruits and continuing education for incumbent personnel of all ranks. The department drill master is in charge of planning, coordinating, and documenting all department training activities. This person ensures compliance with all applicable training standards and tracks member certifications. The department technical services officer is responsible for all special operations training, including; hazardous materials, rope rescue, water rescue, ice rescue, confined space rescue, and vehicle extrication. Also, the training division is responsible for the coordination of inspections and testing of equipment.

The current annual budget of the CBFD is \$14 million: Approximately 5.5% (\$770,000) of that budget is spent on CRR efforts. The CBFD provides numerous programs in the effort to reduce the risk of fire and other dangers to its citizens. The fire marshal's division leads that effort.

The CBFD maintains fully staffed fire marshal's division. Five personnel are assigned to the fire marshal's division (formally fire prevention bureau) and split their daily activities between building plan reviews, fire prevention duties, public education, business inspections, and arson investigations. An assistant chief leads the fire marshal's division and holds the title of fire marshal. The remaining four members of the fire marshal's division include two captains and two apparatus engineers. Furthermore, one member (an apparatus engineer) is a certified

law enforcement officer. This member spends most of his time working on arson investigations and assisting with the apprehension and prosecution of arson offenders.

A cadre of 15 line staff personnel supplement the personnel assigned to the fire marshal's division at public education events throughout the year. These cadre members perform CRR duties, including: delivery of fire safety and prevention programs to grade school children; fire extinguisher classes for local businesses; slip, trip, and fall hazard prevention programs for senior citizens; and general safety classes for local businesses.

The fire marshal's division utilizes an interactive fire safety house (36 ft; 10.97 m) travel trailer) for delivery of grade school fire safety and prevention programs. The fire safety house features a classroom, kitchen, and bedroom for students to learn about fire prevention, cooking safety, and severe weather events. In addition to the fire safety house, the fire marshal's division has utilized animatronic props and inflatable suits to promote the fire safety message.

The fire safety and prevention programs provided by the members of the CBFDD serve 16 local schools covering pre-kindergarten through fifth-grade students of all ethnic backgrounds. Also, programs are delivered to private day cares and a homeschool cooperative that include children of all ages and ethnic backgrounds. In 2015, fire safety and prevention programs reached a total of 5,900 kids; 5,678 schools, 140 day cares, and 42 homeschools. The CBFDD also provides both junior high and high school explorers programs to approximately 30 teenagers annually.

Providing free smoke alarms to the public is a major part of the CRR program in Council Bluffs. The CBFDD created *Project Alex* after fires claimed the lives of two local children in 2010. Under Project Alex, on duty fire department personnel check each home they respond to for working smoke alarms. Personnel will install a smoke alarm if no smoke alarms are present

or need to be replaced, free of charge. Firefighters have installed nearly 3,500 smoke alarms since the start of the program. This program is available to all citizens residing within the city limits of Council Bluffs.

Overall, the CBFDF fire marshal's division enjoys strong support from city leadership, fire department administration, school systems, and community. This support is evident through the cooperation that it receives during fire prevention activities each October, as well as feedback on social media and reporting in local news media outlets.

While there are many positive aspects of the CRR programs provided by the CBFDF, the significant lack of cultural diversity in educational materials and the inability to provide bilingual CRR presentations may reduce overall program effectiveness. Out of the dozens of printed CRR materials provided by the CBFDF fire marshal's division, only two are available in Spanish. In addition, there are currently no members of the fire marshal's division or public education cadre that are fluent in Spanish. Furthermore, there have not been any CRR programs presented exclusively to Hispanic audiences or other outreach programs that have targeted the Hispanic population. Given the growing Hispanic population within the Council Bluffs community, this is an area that improvements must be made to ensure the effectiveness of the CRR programs in the future. Understanding the changing demographics of the city is crucial to diversifying the programs and services provided by the CBFDF.

The city of Council Bluffs is an urban community with an estimated population of 62,597 within a geographic area of 43.62 mi² (70.2 km²). It is part of the Omaha-Council Bluffs metropolitan area that has an estimated population of 915,000 citizens within an eight-county region. According to the 2010 United States (U.S.) Census, the Council Bluffs population is made up of the following racial and ethnic groups; White alone (90.9%), Black or African

American alone (1.9%), American Indian and Alaska Native alone (0.6%), Asian alone (0.7%), and Hispanic or Latino (8.5%) (*Census*, 2016). Since 2000, Council Bluffs has seen a 6.80% overall growth in population. The Hispanic population, which saw a 123.25% increase since 2000, constitutes the largest growth among all racial and ethnic groups (Table 1). Council Bluffs has a Hispanic population that is 3.5% higher than the statewide Hispanic population of 5.0% (*Census*, 2016).

As of July 1, 2015, the Hispanic population of the U.S. was 56.6 million people or 17.6% of the nation's total population (*Profile*, 2016). These figures indicate that Hispanics represent the largest ethnic minority in the U.S., which is consistent with ethnic minority demographics in Iowa and Council Bluffs as well. In addition, Hispanics are the fastest growing ethnic minority throughout the U.S. and are estimated to reach 28.6% of the nation's population (119 million people) by 2060 (*Profile*, 2016). It is safe to predict that Council Bluffs will see a similar rate of growth within the Hispanic population in the future.

Within the CRR model, the assessment step requires an in-depth analysis of the community to identify risks, community demographics, vulnerable populations, and risk-reduction priorities in the response area (*EACRR student manual*, 2015). Numerous socioeconomic and demographic indicators found in census tract information can help identify vulnerable populations.

An in-depth analysis of 62 census tracts, encompassing the entire city of Council Bluffs, was performed by this author (Appendix A). Data from these 62 census tracts was adapted with permission from the USA.com website¹. All 62 census tracts included Hispanic residents with 16 tracts showing a Hispanic population greater than 10% (Table A1). A cluster of 11 census tracts, directly adjacent to one another, provided valuable insight on the vulnerability of the

Hispanic population (Tables A2). These 11 tracts contained a higher concentration of Hispanic residents than any other area of the city; ranging from 11.74% to 24.76% with an average of 16.14% (USA.com, n.d.). In addition, this cluster also had the highest poverty rate within the city at 29.26% (USA.com, n.d.). An analysis of fire loss dollar amounts within the 62 census tracts revealed that 34.6% (\$368,030) of the \$1,062,523 in fire losses occurred in these 11 census tracts in 2015 (CBFD, 2015). These losses translate to an average loss of \$35.72 per person within this cluster compared to an average loss of \$13.93 per person throughout the rest of the city (Table A3). According to response data collected in Firehouse Software, calls for emergency response in these 11 census tracts accounted for 21.7% (1,798) of the total call volume (8,280) of the CBFD in 2015 (CBFD, 2015). Population density for these 11 census tracts was 4,480 mi² (11,603 km²): compared to 1,220 mi² (3,160 km²) for the other 51 census tracts within the city of Council Bluffs (Table A3). Furthermore, these 11 census tracts encompass an older section of the city where most homes were built from 1880 to 1930 with many being converted to rental units (Pottawattamie County Assessor, n.d.). All of these factors illustrate the need for effective CRR programs that are understood and retained by all citizens, especially the Hispanic population, and clearly, identifies these 11 census tracts as a vulnerable population.

The continued growth in the Hispanic population will likely result in a negative impact on both the CBFD and Hispanic community unless a comprehensive plan on how to improve service to that segment of the population is developed in the near future.

This applied research project (ARP) relates to the National Fire Academy *Executive Analysis of Community Risk Reduction* course in several ways. Many of the enabling objectives found in Unit 2 are demonstrated, including; (2.2) analyze local community risks, (2.3) assess

vulnerability to risks, and (2.4) summarize the importance of community involvement (*EACRR student manual*, 2015). This author will use an extensive literature review, census data, fire statistics, survey tools, and a personal interview to analyze the local risks to the Hispanic population. This information will assist in determining the vulnerability of the Hispanic population and reinforce the importance of involvement of the Hispanic community in addressing the risks.

This ARP is linked to the United States Fire Administration's Strategic Plan, Goal 1: *Reduce fire and life safety risk through preparedness, prevention, and mitigation*. This includes Key Initiatives 2, 3, and 4 found in Goal 1: (2) "expand fire and life safety public education and prevention initiatives, including the use of social media, to reach all segments of the population; (3) expand work with partner organizations, federal, state, local, tribal, and nongovernment agencies to reach the public, in partnership with organizations associated with high-risk groups; and (4) work with stakeholders to identify, promote, and offer programs and training to encourage 'whole community' preparedness, prevention, and mitigation planning" (*USFA*, 2014, p. 10).

Literature Review

The purpose of this literature review was to gain insight on the Hispanic culture to determine if the CRR efforts of the CBFDD were effective. Understanding Hispanic culture should assist in identifying obstacles that could impede the delivery and acceptance of a broad range of CRR programs. In addition, this author examined the concepts behind CRR programs and the delivery of those programs and emergency services to diverse populations by other fire departments.

The American fire service took major steps towards reducing the negative impact of fire on its citizens after the groundbreaking report *America Burning* was released in 1973. Educating people about the dangers of fire is perhaps the most important step that can be taken to reduce fire losses (United States Fire Administration [USFA], 1973). That call to educate Americans on fire safety and prevention in the 1970s evolved into the broader concept of CRR. Community risk reduction can be defined as “the process of addressing the larger issue of preventable injury that is occurring in a community” (International Fire Service Training Association [IFSTA], 2011, p. 562). The CRR process may include a wide variety of different programs, including but not limited to; fire safety, fire prevention, first aid and community CPR classes, child car seat programs, bicycle helmet programs, disaster preparedness, senior citizen programs, health advocacy, and injury prevention programs. Although effective CRR programs require a broad, holistic approach, a vital component of most programs remains fire safety and prevention (IFSTA, 2011).

“Fire and injury risk is a problem that affects all demographics of the country” (IFSTA, 2011, p. 132). While we know that fire and injury can affect anyone, statistics indicate that some groups are at greater risk than other, including; children under the age of five, senior citizens over the age of 65, individuals with a lower socioeconomic status, and disabled citizens of any age (IFSTA, 2011). In addition, morbidity and mortality rates for the male gender are consistently higher than female rates (IFSTA, 2011). Other groups that may be at risk are ethnic minority populations. The growing cultural diversity of the U.S. creates challenges for fire departments in the form of language barriers (IFSTA, 2011). A proactive CRR program will identify these vulnerable populations and tailor programs especially for them. Populations that have unique language and cultural attributes can be challenging for emergency responders and

should, therefore, be identified and prepared for to avoid unfavorable outcomes (Bachman, 2012).

In Arizona, the Mesa Fire Department utilizes Fire Corps volunteers to assist with cultural and language barrier issues. In 2004, the Department of Homeland Security created Fire Corps as a national volunteer organization dedicated to helping fire departments with non-emergency activities (Fire Corps, n.d.). In Mesa, five of the 150 Fire Corps volunteers work for the fire department as a bilingual assistance team ("Mesa," n.d.). These volunteers assist the Mesa Fire Department with oral and written translations, bilingual presentations at schools, and community events that target the Hispanic population ("Mesa," n.d.). During fire prevention inspections, these volunteers translate code information to Hispanic business owners.

In 2012, Knoxville Fire Department (TN) began using laminated Spanish flashcards to improve communications with the growing Hispanic population ("Tennessee," 2012). Knoxville firefighters frequently responded to Spanish-dominated neighborhoods where effective communication was a tremendous challenge before the flashcards. A comparable program was started in North Carolina with equal success. The Winston-Salem Fire Department placed a similar set of English-Spanish translation cards on all city fire trucks (National League of Cities: Center for Research and Innovation [NLC], n.d.). The flashcards were developed by firefighters using phrases that were determined to be the most important to providing quality emergency care.

Beaufort Fire Department (BFD) is in one of the fastest growing counties in South Carolina with Hispanic citizens accounting for a large portion of that population surge (Byrne, 2007). The department leadership recognized the need and made reaching out to this group a priority. The first step taken by the BFD was to become involved with a local Hispanic

television news program. Bilingual members of the BFD participated in televised segments where they talked about fire safety and department operations (Byrne, 2007). In addition, BFD provided monthly safety tips to a local Hispanic newspaper and provided bilingual members to appear on local Hispanic radio programs. Other areas where BFD sought exposure to the Hispanic community included; summer camps, voter registration drives, church events, and ESL programs at local schools. “The payoff is not only a safer community, but the sense of community itself, as the relationship between the Hispanic population and the fire department becomes closer” (Byrne, 2007, p. 1).

There are many similarities between what is happening demographically around the country and what is happening in Council Bluffs. As Hispanic populations continue to increase, the need to improve communications and find alternative methods of delivering fire safety and prevention messages will also increase. To select new methods of message delivery, a better understanding of the Hispanic culture is necessary.

The U.S. Census Bureau began use of the term Hispanic in the 1970s. This ethnic group may include any person of Mexican, Puerto Rico, Cuban, South or Central American, or other Spanish culture or origin (U.S. department of health and human services centers for disease control and prevention [CDC], n.d.). According to the U.S. Census Bureau, ethnic origin can be defined as the “roots, heritage, or place where the individual or his/her parents or ancestors were born” (Census, 2016). Therefore, an individual of any race, creed, color, or religious ideology may identify as Hispanic or Latino.

As a culture, Hispanics are highly group-oriented and place a great deal of importance on strong family values. Hispanic culture promotes the family unit above individual pursuits, placing emphasis on shared responsibility and collective accountability (CDC, n.d; Long, 2013).

Family and close friends share a deep level of trust within the family group. This family group may include grandparents, aunts, uncles, cousins, and even close friends who are not biologically related. Hispanic culture describes this intense loyalty to the family as *familismo* (Carteret, 2011). In addition to a strong family unit, Hispanic culture promotes a defined hierarchy based on age and sex. Within most Hispanic families, the oldest male wields the greatest authority (Carteret, 2011).

Traditional Hispanic homes rely on members assuming gender roles that reflect the values of *machismo* and *marianismo* (Flores, 2005). *Machismo* can be described as hypermasculinity where the man's role as head of the household involves exuding physical prowess and stoicism while at the same time embracing chivalry and a duty to provide for the wellbeing of the family unit (Flores, 2005). "In its negative sense, critics have defined it as the traditional Latino cult of virility and aggressive masculinity, which is characterized by arrogant, sexist attitudes, heavy drinking, domestic violence, male-to-male competition, and having a large family (frequently more than one household) as a signifier of virility, homophobia, and violence that includes bravery, honor, and respect" (Kirschner, 2005). As new generations of Hispanics assimilate to American culture, traditional male gender role may change. According to Long (2013), "the machismo image has begun to take a less significant posture." Furthermore, the cultural trait of machismo is not exclusive to Hispanic males. Hispanic females may display similar machismo attitudes as men (S. Sandoval, personal communication, December 15, 2016).

Marianismo can be explained as a complimentary force to machismo similar to Chinese cultures yin and yang. Hispanic women who subscribe to the values of marianismo are expected to be self-sacrificing, submissive, respectful, and faithful to their husbands (Kemp & Rasbridge, 2004; Kirschner, 2005). While the models of machismo and marianismo may bring balance to

the Hispanic family, they can also be damaging. Children raised in an authoritarian, repressive machismo environment may become lazy, dependent, emotional, irrational, unreliable, and even criminally prone (Kirschner, 2005). Because male children may feel stifled by the male authority figure of the family, they sometimes choose to confirm their masculinity through violent or criminal outbursts (Mirande, 1996).

Cultural views towards health and seeking out health care options may present obstacles to providing quality CRR programs to the Hispanic community. Hispanics see traditional folk illnesses as either caused by natural elements or those caused by witchcraft (Pribilsky, 2005). In Hispanic culture, a precursor to good health is a balance between social and spiritual life. In addition, a core belief of the Hispanic community is that health is related to a balance between the four humors; black bile (cold and dry), yellow bile (hot and dry), phlegm (cold and wet), and blood (hot and wet; Kemp & Rasbridge, 2004; Pribilsky, 2005). There is also an important relationship between temperature and disorders. Cold illnesses or disorders are treated with *hot* medications or treatments and vice versa (Pribilsky, 2005). These unusual beliefs about the origins of disease and illness may lead to the employment of unconventional treatment methods by Hispanic citizens, including; food remedies, herbs, and cleansings. The continued use of traditional home remedies may be rooted in the belief that these treatments are more authentic and less expensive than modern medical care.

In addition, the consent to be treated by conventional medical doctors may not come from the actual patient in Hispanic families. Because the family model is based on the collective good (familismo), individuals faced with medical treatment options are inclined to consult the family before making important decisions, thus delaying time to treatment (Carteret, 2011). Final medical decisions may ultimately come from the oldest male in the family (Carteret, 2011).

Furthermore, Hispanic males may be hesitant to ask questions or request help for fear of appearing weak or unintelligent (S. Sandoval, personal communication, December 15, 2016). These beliefs towards medical decision-making translate to the bigger picture of CRR in that acceptance of common fire safety and injury prevention concepts may require consulting the rest of the family with final decisions being made by the dominant male figure. Furthermore, Hispanic males, may fail to ask important questions about CRR concepts.

Fatalism, or *fatalismo*, is a trait, not typically found in North Americans, that is often displayed in people from South and Central America expressing the belief that they can do little to control fate (Carteret, 2011; Gonzalez & Topf, 2007). Since many Hispanics, especially males, believe that their safety and health is in the hands of God, they may exhibit risky behaviors, ignore hazards, or decline treatments for medical conditions. In addition, because of the fatalismo culture, Hispanics may fail to take common preventative health measures (Carteret, 2011). The same failure to take preventative health measures may correlate to other general safety measures in the Hispanic home.

Hispanics in the U.S. have a strong desire to maintain their cultural values and therefore utilize their native language to help achieve that goal. According to a survey completed by Pew Research Center, 95% of Hispanics said it is either *very important* (75%) or *somewhat important* (20%) that future generations living in the U.S. speak Spanish (Taylor, Lopez, Martinez, & Velasco, 2014). In the home, 79% of Hispanics are most comfortable speaking Spanish with 90% learning Spanish as their primary language (Boy Scouts of America [Scouts], n.d.). In Council Bluffs, most Hispanic families prefer to speak Spanish in the home (S. Sandoval, personal communication, December 15, 2016). Interestingly, the Pew research also showed that

87% of Hispanics felt that learning English was needed to succeed in the U.S. (Taylor et al., 2012).

Pew research demonstrates that English proficiency improves while the use of Spanish decreases with each generation of Hispanic immigrants. With regard to speaking ability, 38% of first-generation Hispanics say they can speak English *very well/pretty well*. That percentage increases to 92% for second-generation and 96% of third-generation Hispanics (Taylor et al., 2012).

By contrast, Spanish speaking ability decreases with each successive generation. Ninety-one percent of first-generation Hispanics say they speak Spanish very well/pretty well. Among second-generation Hispanics, Spanish proficiency falls to 82%. By the third-generation of U.S.-born Hispanics, less than half (47%) claim they can speak Spanish fluently (Taylor et al., 2012). When identifying the primary language spoken by Hispanics, research indicates a similar trend with successive generations. Among first-generation Hispanics, 61% say Spanish is dominant with 24% English dominant (Taylor et al., 2012). By the third-generation, only 2% identify Spanish as their primary language with 69% saying English is dominant (Taylor et al., 2012).

Integration of the English language among Hispanics has been aided by federal and state obligations for public schools to provide equal opportunities (Martin, 2005). The passage of the Bilingual Education Act of 1968 helped promote the expansion of programs such as English as a second language (ESL). Other laws that support educational opportunities for English learners include; the Civil Rights Act of 1964, the Equal Education Opportunities Act of 1974, and the No Child Left Behind Act of 2001 (Martin, 2005).

Other federal actions have protected access to programs or services for Hispanics who have limited English proficiency (LEP). Executive Order 13166 signed by President Clinton

requires all federal agencies and all organizations that receive federal aid to examine the services they provide to ensure they can serve those with LEP (Exec. Order No. 13166, 2000). If they are not able to service the LEP population, they are required to develop and implement a system that complies with the order. Fire departments who receive any type of federal aid such as SAFER or FIRE Act grants must comply with this order.

Hispanics account for 80% of all English language learners (ELL) in the United States (*Census*, 2016). Unfortunately, only 2.5% of educators who teach ELL classes hold a degree in ESL or bilingual studies (National Education Association [NEA], n.d.). The lack of qualified educators may negatively impact the ability for ELL students to make progress learning the English language as the Hispanic population continues to grow.

Recently, the Council Bluffs School District reported reading proficiency scores for all students, second- through 11th-grades for the school year 2015-2016. Local ELL students exhibit a progressive growth in English proficiency as they advance through each grade (Table 2). Data from that report showed the Council Bluffs Schools had 335 ELL students, which constitutes 6.5% of all enrollment (Council Bluffs Community School District [CB Schools], 2016). Reading proficiency for ELL students steadily increased with each grade level starting with 29.31% proficiency in second-grade to 82.98% in 10th-grade (CB Schools, 2016). The data showed that there was a significant gap in reading proficiency between non-Hispanic students, Hispanic students, and ELL students. The Council Bluffs Schools report lists Hispanic students and ELL students separately, but their scores are both approximately 7 – 30% lower than non-Hispanic students in grades two through five. The lower reading proficiency in those grade levels is significant because the majority of fire safety and prevention efforts made by the Cbfd focus on elementary school children.

Additional significant cultural obstacles were communicated to this author through a personal interview with Ms. Sofia Sandoval (Appendix C). According to Ms. Sandoval, many first-generation Hispanic citizens do not fully understand the American 9-1-1 emergency system. The fire department only responds to fire calls in most Latin counties. Therefore, Hispanic members of the community, may not call 9-1-1 for other types of emergencies, such as medical emergencies or natural gas leaks (S. Sandoval, personal communication, December 15, 2016). In addition, a large number of Hispanics in the Council Bluffs community reside in mobile homes, and many of these homes do not have smoke alarms (S. Sandoval, personal communication, December 15, 2016). In addition, Hispanic adults often tend to work long hours each day and therefore, have little time to dedicate towards learning English in classes provided by Centro Latino (S. Sandoval, personal communication, December 15, 2016).

The findings of the literature review influenced the project in many ways. The research clearly demonstrated that for CRR programs to be successful, they must identify and address vulnerable populations. The rapidly growing Hispanic population has caused fire departments from all over the U.S. to adapt their strategies for providing both emergency response and CRR programs. Furthermore, the research indicated that first-generation Hispanics of any age and Hispanic ELL students experience the greatest impact of the language barrier: These facts may affect the recommendations on the delivery of school programs and community outreach. Studying Hispanic culture has illuminated possible reasons why fire safety and prevention programs fall short in reaching the Hispanic community. In addition, understanding the cultural nuances of familismo, machismo, marianismo, and fatalismo, will greatly assist in formulating recommendations.

Procedures

The purpose of this ARP was to determine if the current community CRR program was having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Ia. To achieve that purpose, research was conducted to answer the following questions: (a) how well do Hispanic citizens understand and retain fire prevention and safety messages taught in their current format, (b) what are the cultural obstacles to delivering effective fire and life safety education to the Hispanic community, (c) what are the internal obstacles to delivering effective fire and life safety education to the Hispanic community, and (d) what have other fire departments done to address the community risk reduction needs of the Hispanic community?

The descriptive research method was used to examine carefully selected subjects, including; fire safety and prevention knowledge of school children, characteristics of Hispanic culture and language, demographic data, firefighters attitudes and beliefs about CRR and the Hispanic community, and CRR programs provided to the Hispanic population by other fire service agencies. In addition, a comprehensive literature review, three survey instruments, and one personal interview were used to gather pertinent information for this ARP.

Research for this project began with this author's pre-course work for the Executive Analysis of Community Risk Reduction class held at the National Fire Academy (NFA) in Emmitsburg, Maryland, June 2016. A substantial amount of time was spent collecting data from various websites provided in the pre-course assignment, including; Census.gov, USA.com, NFPA.org, and homefirepreparedness.org. The resulting data indicated that the Hispanic population of Council Bluffs could be classified as a group with increased vulnerability to injury or death and should be investigated further. Research continued at the NFA Learning Resource Center (LRC). The library catalog search focused on fire safety and prevention in the Hispanic

community, multi-cultural CRR plans, and Hispanic culture. The dynamic nature of Hispanic growth and migration around the U.S. underscored the need for accurate, up-to-date reference materials. The LRC search yielded several fire service magazine articles, journal articles, and relevant textbooks. Selected materials were photocopied on site for review at a later date.

The comprehensive literature review included an examination of pertinent materials obtained at the Council Bluffs public library, University of Nebraska Medical Center library, interlibrary loans, CBFDF training division library, and internet searches. These materials included reference books, trade journal articles, government documents, fire service manuals, health care educational materials, and website postings. Examples of internet search queries included; Hispanic culture, fire safety education for Hispanics, risk reduction for the Hispanic community, Hispanic demographics in the U.S., community risk reduction for the Hispanic community, and Spanish in the fire service.

Research Question 1. How well do Hispanic citizens understand and retain fire prevention and safety messages taught in their current format? This author utilized a survey instrument given to school children to answer the first research question. This specific group of citizens was chosen because virtually all of the fire prevention and safety messages that are conveyed by the CBFDF are directed to school children. To fully understand if the fire prevention and safety message currently provided by the CBFDF was being understood and retained, it was important to survey this group. The survey instrument consisted of a 16-question fire safety quiz and was administered to children, kindergarten through fifth-grade by their teachers (Appendix B). This survey instrument was developed based on information from the website Firesafekids.org. The fire safety quiz included 10 multiple-choice questions and six pictograph

choice questions. All questions were designed to challenge student understanding and retention of common fire safety and prevention concepts that are taught every year in local schools.

Four local elementary schools were contacted with information about the research project and a sample of the quiz. Two schools declined and two schools elected to participate. A cover letter and instructions were provided for each teacher who would facilitate the exercise along with paper copies of the quiz and an answer key. Teachers were asked to provide the following information with each fire safety quiz; the number of correct responses out of 16, grade level, ethnicity, and fluency in English if the student was identified as Hispanic. Student fluency was estimated by the teacher and based on a four point scale; 1 = none, 2 = some, 3 = moderate, 4 = fluent. The fire safety quiz was given to 602 students with 100% response rate. The quiz, written in English, was given to both Hispanic and non-Hispanic students to provide a comparison of how well each group scored. The quiz was purposely not given in Spanish because the current fire prevention and safety message provided by the Cbfd does not include Spanish-speaking instructors or materials printed in Spanish. After completion, the quizzes were returned to this author and information tabulated using a Microsoft Excel program. A summary of the results can be found in Appendix B, Table B1.

In addition to the fire safety quiz, cultural information gathered in the literature review, as well as statistical data collected in the literature review and background and significance sections, added valuable insight in answering Research Question 1.

Research Question 2. What are the cultural obstacles to delivering effective fire and life safety education to the Hispanic community? The primary method used to answer Research Question 2 was an extensive literature review of the Hispanic culture. In addition to the

literature review, this author performed an examination of census data and conducted a personal interview with a local stakeholder.

The literature review explored four main areas of Hispanic culture; (a) family values, (b) gender roles, (c) cultural views towards health and wellness, and (d) the importance of language. Sources of information for these cultural areas included; journal articles, health care educational materials, reference books, encyclopedia volumes, and internet sources.

Data collected from the census.gov website was reviewed and analyzed at three levels; national, state, and local. The Centers for Disease Control and Prevention, State of Iowa Department of Education, and Council Bluffs Community School District websites afforded additional information for this research. Local data was also collected from the website USA.com. The data collected from USA.com resulted in an exhaustive analysis of all 62 census tracts that cover the city of Council Bluffs (Appendix A). Pertinent data was summarized in Microsoft Excel files, analyzed, and then expressed as tables that were designed by this author (Tables A1-A3). That analysis included multiple comparisons between Hispanic and non-Hispanic citizens based on the percentage of population, median household incomes, age, and poverty. Furthermore, emergency response data was added to the census tract data to yield further valuable information. A summary of emergency response statistics was produced from Firehouse Software and included data on total incidents and estimated fire losses for each of the 62 census tracts. The 11 census tracts identified as a vulnerable population were compared to the remaining 51 census tracts. Those comparisons included; square miles (km²), population, population density, poverty levels, percentage of Hispanic population, number of emergency incidents, estimated fire losses, and loss per resident (Table A3).

A personal interview was conducted on December 15, 2016, with Ms. Sofia Sandoval. Ms. Sandoval is the current Family Support and Adult Education Coordinator for Centro Latino. Centro Latino is a Hispanic outreach organization formed by the United Methodist Churches of Council Bluffs in 2001. The interview took place at the Centro Latino offices found at 604 S. Main Street, Council Bluffs, Iowa, 51503. The 45-minute interview covered eight questions that were given to Ms. Sandoval prior to the actual interview. A summary of the interview can be found in Appendix C.

Research Question 3. What are the internal obstacles to delivering effective fire and life safety education to the Hispanic community? To answer Research Question 3, this author utilized an internal survey constructed on the SurveyMonkey website (surveymonkey.com). The 10-question survey was sent to 107 members of the Cbfd along with a brief description of the project and instructions. The sample size and participants were determined by simply including all current department members. After the survey had been constructed, an email was sent to all members through the inter-departmental email server with a request to participate along with a brief explanation of the project, instructions, and internet hyperlink to the online survey. Members were given 30 days to complete the survey. Participants had to click on the hyperlink in their email that would redirect them to the online survey. Results were automatically collected and summarized by the SurveyMonkey website. Of the 107 survey requests that were sent out, 66 responses were collected, yielding a 61.68% response rate. In addition to asking questions about internal obstacles, members were asked about their experiences interacting with the Hispanic community on emergency responses, their fluency in Spanish, and under what conditions they would be interested in learning Spanish. The survey results can be found in

Appendix D. In addition, results from the internal survey were also helpful in answering Research Question 2.

Research Question 4. What have other fire departments done to address the community risk reduction needs of the Hispanic community? Research documented in the literature review and an external survey constructed on the SurveyMonkey website (surveymonkey.com) answered the fourth research question. A sample group of 200 firefighters from across the U.S. was emailed a request to participate along with a brief explanation of the project, instructions, and internet hyperlink that would re-direct the user to the online survey. The sample size was determined by and participants selected from personal contacts, former and current work groups, former students, and other fire service colleagues. Participants represented a diverse cross-section of the American fire service, including: volunteer, combination, and career firefighters; firefighters serving a broad range of populations; and firefighters from 27 states. Participants were asked to complete the survey within 30 days. Results were automatically collected and summarized by the SurveyMonkey website. Of the 200 survey requests that were sent out, 66 responses were collected, yielding a 33.00% response rate. Participants were asked about their department and community demographics, the types of programs they offer to the community as a whole, the programs they provide specifically to the Hispanic community, obstacles to providing these services, and if the department they serve provides any incentives for members who speak Spanish. The survey results can be found in Appendix E. In addition, results from the external survey were also helpful in answering Research Question 2.

There were several limitations to this research. The fire safety quiz, designed to answer Research Question 1, provided information on a limited segment of the Hispanic population: young students. In addition, the fire safety quiz did not include a differentiation between those

of Hispanic ethnicity and ELL students. This author assumed that the individual teachers did not provide any assistance in answering fire safety quiz questions and provided an accurate assessment of the Hispanic student's fluency in English.

The number of non-respondents limited both the internal and external survey instruments. Several additional limitations existed because the surveys were anonymous, including; the ability to clarify answers, why surveys were not completed, and the truthfulness of the answers. In addition, both surveys were limited to 10 questions each, whereas a larger survey may have provided more detailed results.

Another limitation was incomplete census data. When analyzing census tract data from the USA.com website, this author discovered numerous tracts that did not contain data on poverty levels and the median income for Hispanic households. Also, there are inherent limitations in all census data, as information becomes outdated soon after census surveys are completed, and it is impossible to determine the number of residents who did not participate in census activities.

A significant challenge to the organization of data for this ARP was the manner in which many of the research sources display data on race and ethnicity². Several sources improperly placed groups defined by color with groups identified by ethnicity (e.g., White and Hispanic) within the same table or graph. In cases where improper racial designations or comparisons were made in reference materials, this author combined data from racial groups other than Hispanic and represented the combined data as *non-Hispanic* for this paper.

Results

Research Question 1: How well do Hispanic citizens understand and retain fire prevention and safety messages taught in their current format?

The first research question was answered through information gathered with a survey instrument given to school-aged children, an extensive literature review, and analysis of relevant statistical data. The survey instrument was given as a 16-question fire safety quiz to 602 children, kindergarten through fifth-grade with 100% response rate. (Appendix B).

The survey instrument demonstrated that understanding and retention improved with each grade level among both Hispanic and non-Hispanic students (Table B1). Non-Hispanic kindergarten students had an average score of 85.44% while Hispanic students averaged 73.18%. The gap identified between non-Hispanic and Hispanic kindergarten students was 12.26%. Fluency among Hispanic students at the kindergarten level was 2.71 on a four-point scale. Each grade level saw improvement with a narrowing gap between non-Hispanic students and Hispanic students. Fluency also increased with each grade level. Non-Hispanic fifth-grade students averaged 94.63%, while Hispanic students averaged 92.44%. The gap between non-Hispanics and Hispanic students decreased to 2.19% with fluency among Hispanic fifth-grade students increasing to 3.63.

A report by the Council Bluffs Community School District showed a definite gap between non-Hispanic, Hispanic, and ELL students (Table 2). The report disclosed reading proficiency for second-graders at 60.18% for non-Hispanic students, 40.79% for Hispanic students, and 29.31% for ELL students (CB Schools, 2016). Proficiency was increased with each grade level except 11th-grade which showed a substantial decline. Both Hispanic and ELL students were below 58.00% at grade five. By 10th-grade, non-Hispanic students demonstrated reading proficiency at 88.78%, Hispanic students 81.71%, and ELL students at 82.98% (CB Schools, 2016).

Pew research demonstrated that 92.00% of second-generation, and 96% of third-generation Hispanics say they can speak English very well/pretty well (Taylor et al., 2012). The improved fluency in English indicates that Hispanics should gain more understanding of fire safety and prevention messages with subsequent generations.

Therefore, the research results demonstrated that Hispanic grade school students face significant challenges early in their school career, but quickly bridge the gap in English fluency. Because of these early difficulties, Hispanic students may not understand and retain the fire safety and prevention message adequately in the first few years of grade school. Also, the research results showed that understanding and retention of fire safety and prevention information among Hispanic students improved to acceptable levels as they progress through each grade in spite of scoring lower than non-Hispanic students.

Cultural information gathered in the literature review indicated that a majority of second- and third-generation Hispanics excel in learning the English language and have fluency levels that should allow them to understand and retain fire safety and prevention information. Research results also indicated that first-generation Hispanics and young Hispanics who have not participated in ELL or ESL school programs are much more likely to be impacted by a language barrier and will be at risk of not comprehending CRR programs provided by the Cbfd. Regardless of fluency, traditional cultural characteristics, such as machismo and fatalismo may prevent Hispanics from taking necessary precautions taught in CRR programs.

Research Question 2: What are the cultural obstacles to delivering effective fire and life safety education to the Hispanic community?

Aspects of Hispanic culture that could hamper understanding and retention of fire safety and prevention messages include; machismo, fatalismo, unconventional views toward health,

socioeconomic conditions, and a language barrier. In the male-dominated culture, machismo causes Hispanic males to take unnecessary risks, inhibits them from requesting assistance, or prevents them from asking important questions (Flores, 2005). These cultural characteristics may affect decisions regarding fire safety and prevention. Hispanic females defer to the male authority figure when it comes to making decisions, which may include safety and health decisions (Pribilsky, 2005). Fatalismo is the traditional Hispanic belief that people can do little to control personal fate. Because many Hispanics, especially males, believe that their safety is a matter of fate, they may exhibit risky behaviors, ignore hazards, or decline treatments for medical conditions (Carteret, 2011). Therefore, fatalismo may prevent Hispanics from taking general safety precautions in life activities, including fire safety and prevention.

Traditional Hispanic views towards health could present obstacles to delivering an effective CRR message, including fire safety and prevention. Research results showed that traditional Hispanic views about the origins of illness and appropriate treatments contradict modern health sciences (Pribilsky, 2005). The spiritual nature of their beliefs may inhibit their acceptance of non-Hispanic views towards prevention of illness or injuries.

In addition, socioeconomic factors present obstacles for the Hispanic community in Council Bluffs. The 11 census tracts illustrated in Tables A2 and A3 contained numerous indicators for designation as a vulnerable population. Population density for these census tracts was 4,480 mi² (11,603 km²). Poverty levels for families were 29.26%. Also, these census tracts accounted for 21.71% of all emergency incidents in the city of Council Bluffs in 2015. These emergency incidents included \$368,030 in fire losses at a rate of \$35.72 per resident in the 11 census tracts. Therefore, the cultural and socioeconomic barriers illustrated in this ARP may

prevent the Hispanic community from fully benefitting from the fire safety and prevention messages promoted by the Cbfd.

Language can be a formidable barrier for fire departments when it comes to providing CRR programs and emergency services to an ethnic minority group. Research results indicated that first-generation Hispanics of any age and Hispanic ELL students are the most impacted by a language barrier.

Research Question 3: What are the internal obstacles to delivering effective fire and life safety education to the Hispanic community?

To answer Research Question 3, this author utilized an internal survey that was given to 107 members of the Cbfd. Of the 107 survey requests that were sent out, 66 responses were collected, yielding a 61.68% response rate. A summary of the internal survey results can be found in Appendix D. The experience levels of survey respondents covered the entire range of the possible answers from *less than one year* to *over twenty-five years* indicating the sample group represented a diverse collection of ideas and opinions. The majority of respondents (39.39%) had experience ranging from 13 to 19 years (Appendix D, Question 1).

The members were asked how often they have difficulty communicating due to a language barrier when responding to emergency calls. Twenty respondents (30.30%) reported a language barrier at least 25% of the time. Thirty-one respondents (46.87%) indicated that at least 50% of the time they encounter a language barrier, and fourteen respondents (21.21%) said that a language barrier occurs 75% of the time. Only one respondent indicated that they faced a language barrier 100% of the time (Appendix D, Question 2).

When asked about their proficiency in Spanish, 42 respondents (66.15%) indicated their proficiency as *none*. Sixteen members (24.62%) said they had *some* proficiency and six

respondents (9.23%) claimed to have a *moderate* proficiency in Spanish. There were no members who indicated they were *fluent* in Spanish (Appendix D, Question 3).

Twenty-nine members (42.94%) felt the Hispanic community had a positive view of the Cbfd. All of the remaining respondents (56.06%) indicated that the Hispanic community either had a neutral view or didn't know. There were no members who felt the Hispanic community had a negative opinion of the Cbfd (Appendix D, Question 4).

A majority of respondents (60.61%) felt there was a need for fire safety education programs that were specifically intended for the Hispanic community. Twelve (18.18%) did not think the Cbfd needed to provide fire safety and education programs specifically for the Hispanic community. Fourteen members (21.21%) didn't know if specific CRR programs were needed (Appendix D, Question 5).

When asked to rank a provided list of obstacles to delivering fire safety education programs to the Hispanic community, a majority (38.46%) felt a lack of learning English by Hispanic residents was the biggest challenge. Second in the ranking was the lack of learning Spanish by firefighters. A distrust of government or authority figures among Hispanics ranked third. Hispanic culture and economic/poverty ranked fourth and fifth, respectively. Fire department culture ranked last in obstacles to delivering fire safety education programs to the Hispanic community (Appendix D, Question 6).

The internal survey asked respondents to name other external obstacles to delivering fire safety education programs to the Hispanic community. Survey responses included; language and communication barriers, a lack of community outreach, fear from employers, culture and governmental resistance to teaching English as our national language, and a lack of knowledge

about how big the Hispanic community is that we have to reach. A complete list of responses can be found in Appendix D, Question 7.

When asked about internal obstacles, members cited numerous obstacles, including; overall resistance to change, the inability to speak Spanish, personal beliefs or feelings toward the Hispanic community, anxiety with working with a minority group, a lack of training, a lack of fire safety educational materials printed in Spanish, prejudices against the Latino culture and community, and a lack of translation resources. A complete list of responses can be found in Appendix D, Question 8.

In addition to asking about internal and external barriers, the survey included two questions about Spanish education. Forty-seven respondents (71.21%) indicated that they felt the program “Survival Spanish for Paramedics” should be part of the ongoing training schedule for the Cbfd (Appendix D, Question 9).

When asked if they would be interested in learning Spanish if an incentive program was established by the Cbfd, 49 (76.56%) indicated that they would. Fifteen respondents (23.44%) said they would not be interested in learning Spanish. Also, members were asked what incentives would encourage them to learn Spanish. Responses to this question included; classes paid up front, Latino public education overtime for trained personnel, stipend for Spanish speakers, free classes and paid overtime to attend, free course work, classes while on duty, and free classes with continuing education. A complete list of responses can be found in Appendix D, Question 10.

Research Question 4: What have other fire departments done to address the community risk reduction needs of the Hispanic community? To answer Research Question 4, this author utilized an external survey that was sent to 200 fire service professionals from 27 different states

across the U.S. (Appendix E). Of the 200 survey requests that were sent out, 66 responses were collected, yielding a 33.00% response rate.

The fire department types that were represented by the survey respondents included 38 career (57.58%), nine volunteer (13.64%), 18 combination (27.27%), and one other (1.52%; Appendix E, Question 1).

Those 66 departments included a wide range of populations served; six respondents (9.09%) serve a population of under 1,000, 10 respondents (15.15%) serve a population of 1,001 to 25,000, 15 respondents (22.73%) serve a population of 25,001 to 50,000, 17 respondents (25.76%) serve a population of 50,001 to 100,000, seven (10.61%) serve a population of 100,001 to 250,000, and 11 (16.67%) serve a population of greater than 250,000 (Appendix E, Question 2).

The communities served by the respondents contain Hispanic populations ranging from *less than 1% to greater than 30%*. Thirteen cities (19.70%) have less than 1% Hispanic population. The population ranges from *1 - 5%* and *6 - 10%* each had 18 communities (27.27%) listed by respondents. Nine communities (13.64%) have *11 to 20%*. Three respondents (4.55%) said their communities contained *21 to 30%* Hispanic residents. Five communities (7.58%) claimed *greater than 30%* Hispanic population (Appendix E, Question 3).

Out of the 66 respondents, 62 (93.94%) indicated that their fire department provided fire safety and prevention education or other CRR programs. Four respondents (6.06%) said their fire departments did not have these types of programs (Appendix E, Question 4).

When asked what types of CRR programs were provided by their fire department, 63 (95.45%) offer fire safety and prevention to kindergarten through fifth-grade students. Forty-four (66.67%) provide fire safety and prevention programs to adults. Injury and accident

prevention education were provided by 18 (27.27%) fire departments. Disaster preparedness education was offered by 25 (37.88%) fire departments. Other programs included; health fairs or clinics 24 (36.36%), free smoke alarms/battery replacement 56 (84.85%), fire extinguisher classes 42 (63.64%), juvenile fire setter programs 41 (62.12%), and home fire safety surveys 25 (37.88%). In addition to the programs listed in the survey, respondents included additional programs, including; CERT, open houses, first aid/CPR, and annual fire safety inspections for all commercial properties (Appendix E, Question 5).

Participants were asked if their department provided CRR program materials printed in Spanish. The survey included four response choices; *none, some, most, all*. Thirty-two respondents (49.23%) indicated that none of the CRR materials offered by their department were printed in Spanish. Twenty-four (36.92%) said that some materials were printed in Spanish. Six (9.23%) reported that most materials were printed in Spanish. Three respondents (4.62%) reported that all CRR materials that were provided by their department were printed in Spanish (Appendix E, Question 6).

The next survey question dealt with CRR programs designed or provided specifically to the Hispanic community. Seventeen respondents (26.15%) indicate that their department provides fire safety and prevention classes to Hispanic students, kindergarten through fifth-grade. Twelve respondents (18.46%) said they provide fire safety and prevention education to Hispanic adults. Other programs offered to the Hispanic community included; injury/accident prevention education, three (4.62%), disaster preparedness, five (7.69%), health fairs or clinics, four (6.15%), free smoke alarms/battery replacement, 13 (20.00%), fire extinguisher classes, three (4.62%), juvenile fire setter program, five (7.69%), and home fire safety surveys, four (6.54%). Forty respondents (61.54%) indicated that they do not offer any CRR programs

specifically to the Hispanic community. The respondents identified other programs, including; Spanish speakers, and printed materials regarding code enforcement and risk reduction are printed in Spanish (Appendix E, Question 7).

When asked if their fire department offers programs to improve community relations with the Hispanic community, 51 respondents (78.46%) indicated that they did not provide any programs. Three respondents (4.62%) said they offered Hispanic cultural awareness training for fire safety educators. One department (1.54%) offers Hispanic cultural awareness training for all members. Four departments (6.15%) offer Spanish language classes for all members. Seven respondents (10.77%) said that they have partnerships with Hispanic/Latino community organizations (Appendix E, Question 8).

Participants were asked to rank obstacles to delivering fire safety/prevention education programs to the Hispanic community. Seventy-one percent of respondents indicated that a language barrier was the biggest obstacle. Distrust of government/authority ranked second. Hispanic culture and fire department culture ranked third and fourth, respectively (Appendix E, Question 9).

Regarding incentives for department members to learn Spanish or provide CRR programs in Spanish, 54 respondents (81.82%) said they do not offer any incentive. Two agencies (3.03%) provide free language classes. Eight departments (12.12%) offer pay stipends to staff members. One department (1.52%) offers additional overtime opportunities. Department or community recognition was an incentive offered by one department (1.52%; Appendix E, Question 10).

In addition to the information gathered in the external CRR survey, the literature review offered additional insight on answering Research Question 4. Fire departments nationwide recognize that to serve the growing Hispanic population effectively they must adapt their CRR

programs to be more culturally diverse. Some departments are using translation flashcards for emergency incidents to improve their service to the Hispanic community. Other departments utilize Spanish speaking volunteers to present CRR programs, assist with code inspections and enforcement, and translation services.

Recognizing that effective communication is essential, fire departments have integrated their CRR message into Hispanic television and radio programs. Other effective communication methods that have been used by fire departments include fire prevention and safety messages printed in Spanish newspapers and face-to-face interaction at summer camps, churches, schools, and community events.

Discussion

The research results provided valuable information needed to answer the four research questions. Many of the specific findings were reflected in the information gathered in the literature review.

Effective CRR programs address not only fire safety and prevention but a myriad of different risks that our citizens face. CRR programs may include; fire safety and prevention programs, injury and accident prevention, and disaster preparedness. Injury and accident prevention alone may include a wide variety of programs, such as seat belt usage, child restraint seats, bicycle helmets, water-related safety, fall prevention for senior citizens, poisoning prevention and burn prevention (IFSTA, 2011). The external survey results reflect the wide variety of programs cited in the literature review (Appendix E). In Question 5 of the external survey, respondents indicated that they provide the same types of programs noted by IFSTA.

Bachman (2012) spoke about the need for emergency responders to identify and prepare for populations with unique language and cultural attributes. The benefits of being prepared for

the challenges associated with language or cultural barriers were illustrated by Byrne (2007). These principles were reinforced by the information gathered in the external survey (Appendix E). In Question 6, 50.77% of respondents claimed that at least some of their CRR materials were printed in Spanish. Question 7 illustrated programs where fire departments were providing programs specifically for the Hispanic community. Language barrier was identified by 71.93% of the respondents as the biggest obstacle to delivering fire safety/prevention education to the Hispanic community in Question 9. The principles discussed by Bachman and Byrne were also reflected in the results of the internal survey (Appendix D). The results of Question 5 of the internal survey indicated that 60% of respondents felt there was a need for fire safety education programs specifically for the Hispanic community. In addition, a majority of respondents in Question 6 indicated that the biggest obstacle to delivering fire safety education programs to the Hispanic community was language.

Nine out of ten second- and third-generation Hispanics claimed they could speak English very well or pretty well according to Pew Research (Taylor et al., 2012). The fire safety quiz that this author used as a survey instrument showed that there was only a 2.19% knowledge gap between Hispanic and non-Hispanic fifth-grade students (Table B1). In addition, the Iowa Assessments annual report that was prepared by the Council Bluffs Community School District indicated that by 10th-grade, ELL students scored 82.98% in reading proficiency (CB Schools, 2016). These research results raise the question of whether language barriers are only perceived or represent a real obstacle for fire departments. In both the internal and external surveys, respondents selected language as the biggest obstacle to providing fire safety and prevention programs (Appendix D and Appendix E). These survey results could be attributed to a large number of first-generation Hispanics using emergency services. It could also be a result of

preconceived notions of the Hispanic population. Regardless, the research indicated that reading proficiency and use of the English language improved as Hispanic children advance through school and with subsequent generations.

Statistics indicate that some groups are at greater risk than others, including; children under the age of five, senior citizens over the age of 65, individuals with a lower socioeconomic status, and the disabled (IFSTA, 2011). Question 5 of the external survey demonstrated that 95.45% of respondents provide fire safety and prevention programs to kindergarten through fifth-grade children (Appendix E). Although pre-kindergarten programs were not listed as an option in the survey, there were no respondents who listed pre-kindergarten programs in the “other” category. The lack of pre-school programs is a problem for all ethnic groups, not just Hispanics.

The risk of being injured or killed by fire is also affected by socioeconomic status according to IFSTA (2011). Extensive investigation of the 62 census tracts within the city of Council Bluffs found 11 census tracts that illustrated the socioeconomic challenges cited by IFSTA (Appendix A). This author performed a comparison of these 11 census tracts to all other census tracts in Council Bluffs (Table A3). Notable contrasts between the 11 census tracts and the rest of the city include; a population density that was over three times higher, the poverty rate for families was two and a half times greater, and a Hispanic population that was almost 10.00% higher than the other 51 census tracts. In addition, total emergency incidents in the 11 census tracts accounted for 21.71% of total incidents and 34.63% of the estimated fire losses (CBFD, 2015). That equates to \$35.72 per person within the eleven census tracts verse \$13.93 per person in all other census tracts (Table A3).

In addition, morbidity and mortality rates for the male gender are consistently higher than female rates (IFSTA, 2011). The research on Hispanic culture, including discussions of machismo and fatalismo, may help explain the higher rates of injury and death among Hispanic males. Kirschner (2005) described machismo as “the traditional Latino cult of virility and aggressive masculinity.” Mirande (1996) noted that male children might be prone to violent or criminal outbursts as a result of living under a dominant male authority figure. Fatalismo can lead to unnecessary risk-taking among Hispanics (Gonzalez & Topf, 2007). Also, Hispanics may fail to take common preventative health measures (Carteret, 2011). These gender characteristics of traditional Hispanic culture may contribute to higher morbidity and mortality rates for Hispanic males.

This author’s interpretation of the study results included a broad range of thoughts and ideas. Most importantly, the Hispanic citizens of Council Bluffs should be recognized as a vulnerable population and receive additional consideration when addressing CRR efforts. There was ample evidence pointing to this interpretation found in the research.

Among Hispanic citizens, comprehension of CRR concepts is likely proportional to their fluency in English. Language barrier affects older Hispanics and first-generation Hispanics much more than school-age Hispanics and those who are second- and third-generation. School-age Hispanic children gain comprehension of English relatively quickly. Also, a language barrier is not the only obstacle to reaching the Hispanic population of Council Bluffs. Effective communication with the Hispanic population relies heavily on understanding the nuances of Hispanic culture, including; traditional cultural attributes such as machismo, marianismo, familismo, and fatalismo.

There are several internal obstacles to delivering effective CRR programs to the Hispanic community, including; a lack of CRR materials printed in Spanish, no members who are fluent in Spanish, preconceived notions about the Hispanic citizens, a lack of cultural training, a lack of interpreter options, and a lack of an overall plan to address the Hispanic population.

A majority of CBFDD members feel there should be programs specifically for the Hispanic community and are interested in learning Spanish if incentives are offered. Cultural and language classes provided for the members of the CBFDD will pay tremendous dividends towards improving both emergency services and CRR programs provided for the Hispanic community.

The vast majority of fire departments represented in the external survey offer CRR programs in English, but far fewer provide programs specifically for the Hispanic community. The respondents that offer programs for the Hispanic community provided many examples of how to overcome cultural obstacles to delivering CRR services to the Hispanic community. A central theme to overcoming obstacles was improving communication with the Hispanic community.

It is the opinion of this author that strong consideration should be given to expanding and improving the CRR services and programs provided to the Hispanic community. Not only is the Hispanic community the fastest growing segment of the Council Bluffs population, but they are also a vulnerable population served by the CBFDD. Also, diversifying the CRR programs delivered to the Hispanic community will likely result in improved service on emergency incidents.

The improvement process must include the identification and solution of both technical and adaptive challenges. Technical problems occur when operations are not working properly because of deficiencies in systems or programs and require fixes that are known. One technical

challenge faced by the Cbfd involves the lack of CRR materials printed in Spanish. The technical solution is to simply order CRR materials that are designed for Hispanics and printed in Spanish. Adaptive problems are cultural and involve challenging beliefs, behaviors, or attitudes. In this case, it means addressing beliefs, behaviors, and attitudes in both the Cbfd and members of the Hispanic community. In Question 5 of the internal survey (Appendix D), nearly 40% of Cbfd members indicated that they either did not think the Cbfd needed to provide fire safety and education programs specifically for the Hispanic community or didn't know if specific CRR programs were necessary. The adaptive solution for this challenge is to understand the resistance by including the rank and file members of the Cbfd in the decision-making process to express their ideas and concerns.

There are significant organizational implications for the Cbfd to improve the CRR programs for the Hispanic community. Tailoring the CRR programs to meet the needs of the Hispanic community will increase understanding and retention of the CRR message at all ages. Improved service to the Hispanic population will advance the organizational goal of providing the best possible services to the community we serve. Another implication is the amount of time and effort required on the part of the Cbfd administration and line staff to make these improvements. Providing line staff with Spanish language lessons could prove costly and time-consuming. Modifying CRR programs to take into account Hispanic cultural attributes will require consultation with local Hispanic stakeholders. This process may take months to complete. While the Cbfd faces a wide variety of challenges to improving the CRR programs provided for the community, the probable benefits make the potential costs worthwhile.

Recommendations

The purpose of this ARP was to determine if the current CRR programs were having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Iowa. The research conducted for this ARP demonstrated that several deficiencies exist within the current CRR programs the CBFDF provides to the Hispanic community. Drilling down the census data revealed 11 census tracts that qualify as a vulnerable population and deserve additional consideration (Table A2). Therefore, this author formulated both long- and short-term goals to improve the CRR services provided by the CBFDF for the Hispanic population. The long-term goal focused on developing a comprehensive plan to improve the CRR programs provided to the Hispanic community in Council Bluffs. The short-term goal addressed the immediate needs of the vulnerable population identified in the 11 census tracts (Table A3). In addition to long- and short-term goals, this author has provided numerous recommendations based on the results of extensive research shown in the background and significance, literature review, and appendix sections.

Long-term goal: The CBFDF shall develop a comprehensive plan to improve community risk reduction services to the Hispanic community in Council Bluffs, Iowa.

Recommendations: This author recommends developing a comprehensive plan that follows the five-step process outlined by IFSTA; “(1) conduct a community analysis, (2) develop community partnerships, (3) create an intervention strategy, (4) implement the strategy, and (5) evaluate the results” (IFSTA, 2011, p. 187).

Most new concepts or programs represent a cultural change for fire departments and require an adaptive solution to be successful. This author recommends forming a committee of fire department members working with selected local stakeholders from the Hispanic

community. Functioning as a committee will give members a chance to share their ideas and concerns before final decisions are made: increasing the likelihood of a successful finished product. The committee may utilize the research conducted in the ARP during the development of the comprehensive plan.

The results of the research support the long-term goal and associated recommendations in many ways. Test results collected in the fire safety quiz shows Hispanic students score lower than non-Hispanic students (Table B1). Answers provided in both the internal and external surveys show that there is a need for improved communication with the Hispanic community (Appendix D and E). The census data compiled in Appendix A demonstrates that a portion of the Hispanic population meets the criteria of a vulnerable population adding to the importance of developing a comprehensive plan.

Short-term goal: The Council Bluffs Fire Department shall perform a targeted canvas of the 11 census tracts identified as a vulnerable population to provide fire safety and prevention information and smoke alarms to the affected citizens.

Recommendations: To achieve this goal, the Cbfd must obtain appropriate CRR materials printed in Spanish that focus on the basics of fire safety and prevention and residential smoke alarms. The fire marshal's division should contact current CRR materials vendors to identify materials they offer in Spanish and make appropriate purchases. Additional sources of relevant materials should include NFPA and USFA. Diversification of all CRR materials should be included in the long-term comprehensive plan as well.

In addition to diversifying the printed materials, the fire marshal's division should initiate contact and develop partnerships with key groups, including; Centro Latino, American Red Cross, and United Methodist Church. Reaching out to these groups will provide an opportunity

to gather input from local stakeholders on how they can assist with a targeted canvas of the affected area. This assistance may include providing interpreters for door-to-door canvassing, help to translate local CRR materials to ensure proper use of language and to share insights on cultural sensitivities with CBFD staff.

This short-term goal and associated recommendations are reinforced by the results of the research in many ways. Data from the 11 census tracts indicate extremely high population density, substantial poverty, and a Hispanic population that is double the city-wide average (Table A3). In addition, historical information gathered from Firehouse Software on the number of incidents and fire losses show a significantly higher percentage of total incidents and fire losses in the 11 census tracts when compared to the other 51 census tracts. The research also revealed that the CBFD provides little in the way of CRR materials printed in Spanish and has limited interaction with advocacy groups, such as Centro Latino. A plan should be established to canvas the selected neighborhoods to deliver printed fire safety materials, provide smoke alarms for those who need them, and answer questions. The effectiveness of the canvassing program may be evaluated by comparing current data on emergency incidents and fire losses in these census tracts to future data on the same.

Additional recommendations address communications and interaction with the Hispanic community. Improving communications should be the cornerstone of the comprehensive plan; reducing the impact of the language barrier should be central to that effort. This author recommends adding the educational program *Survival Spanish for Paramedics* to the ongoing fire department training calendar. The Survival Spanish program could be supplemented with monthly Spanish phrases or activities to keep members skills sharp. The results of the internal survey support this recommendations (Appendix D, Question 9). Over 70% of respondents to

the internal survey indicated that Survival Spanish for Paramedics should be part of the ongoing training schedule.

To further improve the Spanish abilities of its members, the Cbfd administration should consider creating an incentive for members to learn Spanish. Any incentive that involves an additional pay stipend must be negotiated into the labor contract with IAFF Local 15. The exact details of a stipend or pay increase and terms for eligibility would also be negotiated. Once an incentive is established, the committee should explore educational options for providing Spanish classes to members of the Cbfd, including; Iowa Western Community College, and Centro Latino. It may be beneficial to start with those working in the fire marshal's division and members of the Cbfd public education teaching cadre. After those members are trained in Spanish, all other members interested in learning Spanish should be given that opportunity. In the internal survey, 76.56% of respondents indicated that they would be interested in learning Spanish if an incentive was provided (Appendix D, Question 10).

In addition, any plan to improve communications with the Hispanic community should include utilization of local Hispanic media, including; Centro Latino newsletter, *Mundo Latino* newspaper, radio station, KBBX-FM *Lobo 97.7*. Furthermore, CRR messages could be posted to the Cento Latino Facebook page and information added to the Centro Latino website. This recommendation is supported by the results of the personal interview with Ms. Sandoval of Centro Latino (Appendix C) and Byrne (2007).

The final recommendation for improving communications with the Hispanic community is to provide Hispanic culture training to members of the Cbfd. The results of the research demonstrate that there are numerous traits to the Hispanic culture that will affect the interaction between firefighters and Hispanic residents. Improving service to the Hispanic community relies

on not only speaking Spanish but also understanding Hispanic culture. Working with partners, such as Centro Latino, the Cbfd should arrange for Hispanic cultural classes for all members.

In addition to improving communications, the Cbfd should find ways to increase interaction with the Hispanic community. The Cbfd should build on the initial canvassing project to develop a lasting partnership with the Hispanic community. A key to this partnership is developing a cooperative relationship with Centro Latino. Participating in events sponsored by Centro Latino will not only help develop that partnership, but will also increase understanding of the Hispanic culture and improve communications with citizens. Attending events at Centro Latino will provide Cbfd members who have learned Spanish an outlet to practice their new skills with the public they serve.

In conclusion, the problem was that it was unknown if the current CRR program offered by the Cbfd was having a positive effect on the health and safety of the Hispanic population within Council Bluffs, Iowa. This ARP demonstrated that numerous barriers exist within the Hispanic community that could negatively affect the understanding and retention of CRR programs provided by the Cbfd. A comprehensive plan is needed to address these barriers along with consideration of the recommendations made by this author.

Future readers of this ARP should understand that the direction a CRR program takes should be data driven. A thorough analysis of data from a variety of sources must be conducted as a first step in diversifying a CRR program to meet the needs of the Hispanic community. Building partnerships with local Hispanic community leaders or organizations are critical for program success. From there, fire departments should develop a strategy, implement the strategy, and then evaluate the progress. Designing a comprehensive plan will ensure the CRR message is meaningful to all members of the community.

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List of Footnotes

¹ The census tract data represented in Appendix B was developed from “Council Bluffs, IA,” by USA.com, no author, 2016, <http://www.usa.com/council-bluffs-ia.htm>: Copyright 2016 World Media Group, LLC. Adapted with permission.

² Data collected from Census.gov, USA.com, and Council Bluffs Community School District contained racial designations and comparisons that are not consistent with recommendations found in Section 3.14 of the APA guide. The same type of inconsistencies were found in many of the references cited in the literature review of this ARP.

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Table 1

Summary of Population Change From 2000 to 2010 in Council Bluffs, Iowa

	Total	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and other Pacific Islander	Some other race	Two or more races	Hispanic or Latino (of any race)
Census 2000	58,268	55,213	614	263	344	15	1,054	765	2,594
Census 2010	62,230	56,539	1,098	203	389	6	1,073	1,479	5,791
Percentage Change	6.80%	2.40%	78.83%	-22.81%	13.08%	-60.00%	1.80%	93.33%	123.25%

Sources: U.S. Census Bureau, Census 2000 Redistricting Data (P.L. 94-171) Summary File, Table PL1.

U.S. Census Bureau Quick Facts, Council Bluffs Iowa, 2010, Table Race and Hispanic Origin

Table 2

Summary of Reading Proficiency Council Bluffs Schools Grades Two Through Eleven

Grade	Non-Hispanic		Hispanic		ELL	
	Number of students	Percentage proficiency	Number of students	Percentage proficiency	Number of students	Percentage proficiency
2	345	60.18%	31	40.79%	17	29.31%
3	356	61.38%	44	48.35%	28	44.44%
4	379	60.63%	61	46.92%	40	44.94%
5	430	64.17%	56	57.73%	38	56.72%
6	332	69.32%	46	51.11%	32	50.00%
7	370	72.01%	63	60.58%	45	58.44%
8	368	59.60%	61	70.11%	37	64.91%
9	332	75.28%	50	65.79%	30	63.83%
10	406	88.78%	67	81.71%	39	82.98%
11	347	65.92%	47	60.26%	29	56.86%
Total/Ave	3665	67.73%	526	58.34%	335	55.24%

Note: ELL = English language learner

Source: Council Bluffs Community School District, Iowa Assessment Annual Report 2015-2016