5-10-2020

Addressing the Social Vulnerability of Mississippi Gulf Coast Vietnamese Community Through the Development of Community Health Advisors

Susan Mayfield-Johnson
University of Southern Mississippi

Danielle Fastring
University of Southern Mississippi

Daniel Le
BPSOS-Biloxi-Bayou La Batre

Jane Nguyen
BPSOS, Community Health Worker

sustainability

MDPI

Article

Addressing the Social Vulnerability of Mississippi Gulf Coast Vietnamese Community through the Development of Community Health Advisors

Susan Mayfield-Johnson [1,*], Danielle Fastring [1], Daniel Le [2] and Jane Nguyen [3]

[1] School of Health Professions, The University of Southern Mississippi, Hattiesburg, MS 39406, USA; danielle.fastring@usm.edu
[2] BPSOS-Biloxi-Bayou La Batre, Biloxi, MS 39530, USA; daniel.le@bpsos.org
[3] BPSOS, Community Health Worker, Biloxi, MS 39530, USA; jane.nguyen@bpsos.org
* Correspondence: susan.johnson@usm.edu; Tel.: +1-601-266-6262

Received: 26 March 2020; Accepted: 3 May 2020; Published: 10 May 2020

Abstract: *Background:* Resiliency is the ability to prepare for, recover from, and adapt to stressors from adverse events. Social vulnerabilities (limited access to resources, political power, and representation; lack of social capital; aspects of the built environment; health inequities; and being in certain demographic categories) can impact resiliency. The Vietnamese population living along the Mississippi Gulf Coast is a community that has unique social vulnerabilities that impact their ability to be resilient to adverse events. *Objectives:* The purpose of this project was to address social vulnerability by implementing and evaluating a volunteer Community Health Advisor (CHA) project to enhance community resiliency in this community. *Methods:* A program implemented over eight three-hour sessions was adapted from the Community Health Advisor Network curriculum that focused on healthy eating, preventing chronic conditions (hyperlipidemia, diabetes, hypertension, cancer, and poor mental health). Topics also included leadership and capacity development skills. *Results:* Participants (n = 22) ranged from 35 to 84 years of age. Most were female (63.6%), married (45.5%), unemployed (63.6%), had annual incomes of <$10,000, and had high school diplomas (68.2%). Community concerns were crime (50.0%), volunteerism (40.0%), language barriers (35.0%), and food insecurity (30.0%). Approximately 75% had experienced war trauma and/or refugee camps, and 10% had experienced domestic violence. Scores on the Community Health Advisor Core Competency Assessment increased from pre-test to post-test ($t = -5.962$, $df = 11$, $p < 0.0001$), as did SF-8 scores ($t = 5.759$, $df = 17$, $p < 0.0001$). *Conclusions:* Strategies to reduce vulnerabilities in the Vietnamese community should include developing interventions that address health risks and strengths and focus on root causes of vulnerability.

Keywords: Vietnamese; vulnerability; resilience; Community Health Advisor

1. Background

While social vulnerability has been identified as the product of social inequalities, those social factors that influence or shape the susceptibility of various groups to harm also govern their ability to respond. Social vulnerability includes place inequalities, characteristics of communities and the built environment such as level of urbanization, growth rates, and economic vitality [1]. The major factors that influence social vulnerability are lack of access to resources including information, knowledge, and technology; limited access to political power and representation; social capital including social networks and connections; beliefs and customs; building stock and age; frail and physically limited individuals; and type and density of infrastructure and lifelines [2–5]. Also included are age, gender,

race, socioeconomic status, and other risk factors that might warrant that an individual be recognized as being from a high-need population that might lack equitable social safety nets necessary in disaster recovery (i.e., physically or mentally challenged, non-English-speaking immigrants, the homeless, transients, and seasonal tourists) [6].

Social vulnerability is connected to resiliency. Resiliency is defined as the ability to prepare and plan for, absorb, recover from, and more successfully adapt to stressors from acute and longer-term adverse events [7]. Susceptibility to stressors is not only a function of the demographic characteristics of the population, but also more complex constructs such as health care provision, social capital, and access to lifelines (e.g., emergency response personnel, goods, services) [8].

The social vulnerability of the American population is not evenly distributed among social groups or between places, as some regions or population subgroups are more susceptible to the impacts of natural and man-made disasters than other places based on the characteristics of the people residing within them. As was observed in the aftermaths of Hurricane Katrina and the Deepwater Horizon BP oil spill, when natural or man-made disasters occur in high-risk geographic locations such as those along the Mississippi Gulf Coast (MGC), differential vulnerabilities can be overwhelming.

Coastal residents are increasingly more racially and ethnically diverse than in other geographic locations; a fact that can be attributed to the expansion of low-wage jobs, primarily in the service sector, which help to fuel that diversity [5]. A socioeconomic gap is especially evident in coastal counties, where those with elevated means live closest to the shore, and the income gradient decreases with distance away from the water's edge. This disparity in wealth is a significant social problem at the local and regional level [9]. It is also a spatial problem for coastal communities with geographic mismatches between employment opportunities and available affordable housing that is also built to current code standards.

While much research has been carried out on the effects of Hurricane Katrina, the Deepwater Horizon BP oil spill, floods, tornados, etc., it has focused on the response, recovery, lessons learned, and management of such events in surrounding areas [10–15]. Parsimonious data exist when relating social vulnerability and resiliency to vulnerable populations in coastal Mississippi [16,17]. As such, there is a paucity of literature focused on understanding the vulnerability of and promoting resiliency among these population members and developing interventions to address the health risks and strengths among more rural states like Mississippi. While disasters magnify the existing social and economic trends in places, they do not fundamentally change them. Strategies to reduce vulnerability include focus on social determinants of health that move beyond the status quo to a more sustainable and socially just future. Most social problems are complex and require targeted responses by diverse stakeholders, both internal and external to the group experiencing the problem. In working together to address an issue, stakeholders comprise a social network. It is through these relationships and the social capital made available through them that social issues are collaboratively addressed.

With significant community engagement and partnership with vulnerable communities, knowledge can be obtained from their emic perspective rather than from a researcher's or outsider's analysis. Understanding vulnerable community ethos, culture, and practices allows for humility and development of interventions that are based on the spirit, character, and philosophy of the vulnerable population. The purpose of this project was to address social vulnerability by implementing and evaluating a volunteer Community Health Advisor (CHA) project to enhance community resiliency among the Vietnamese Gulf Coast Community. Development of CHAs as community leaders provides the opportunity to expand resiliency and connecting CHAs to resources builds leadership and capacity, as well as developing a social network for information sharing that is based on culturally appropriate formats and structures.

2. Introduction

According to 2014 U.S. Census estimates, there are 28,067 (±935) individuals who describe themselves as Asians living in Mississippi [18]. Asians constitute less than 1% of the total population in Mississippi, and 5.4% of the U.S. population. While only 2.4% of the population on the MGC

are Vietnamese [19], Vietnamese community members are employed in or highly dependent on the commercial fishing and seafood trade, the service and tourism industry, and small businesses. They usually report higher levels of poverty and lower levels of educational achievement, as compared with other Asian subgroups. Some factors contributing to poor health outcomes include language and cultural barriers, access to culturally appropriate care, and lack of health insurance. Much of the first-generation Vietnamese population on the MGC have low English proficiency, and do not read in their native language [20].

A photovoice project was previously conducted with Vietnamese community members living along the MGC to measure causes and consequences of vulnerability and social resiliency by identifying sources of health strengths and health risks among individuals, families, and the community through generational and cultural perspectives [21]. The photovoice project consisted of a photovoice training session for participants, participants taking pictures in response to the focal questions, and photovoice discussion groups conducted by the academic–community partner. Three photovoice discussion groups (n = 33) were conducted, with photovoice participant groups categorized according to generation status as they emigrated and/or lived in the United States. Groups were divided into first-generation (participants who emigrated from Vietnam to the United States and speak Vietnamese), second-generation (children born in the United States to first-generation immigrants and are bilingual in English and Vietnamese), and third-generation (children of second-generation individuals and grandchildren to the first-generation and largely only speak English). While groupings accommodated for cultural and language needs, as the photovoice trainings and discussions were conducted solely in Vietnamese or in English and Vietnamese, they were developed in collaboration with the community partner's expertise as being representative members of the MGC Vietnamese community and their expertise as a non-profit community-based organization with a significant track record of services.

The photovoice training session included robust discussions of photovoice as a methodology, rationale, photovoice goals and methods, advantages and disadvantages, and the process of using a disposable camera and/or smartphone. Participants reviewed and discussed the consent form for project participation and informed consent that was required to obtain permission from any individual prior to taking pictures of the person. This was followed by informed consent role-play exercises and dialogue on ethical considerations, personal boundaries, and the importance of personal safety. Concepts of vulnerability (health risks) and resiliency (health strengths) were discussed with each photovoice discussion group through brainstorming sessions. Participants were encouraged to use their creativity, knowledge, and experience to capture their concepts of vulnerability and resiliency visually through photographs. Participants then were asked to take pictures on their interpretation of health strengths and health risks in their communities. Pictures were collected and printed for the discussion groups.

Content analysis was conducted to identify themes associated with vulnerability and resiliency which were subsequently grouped into six main categories: (1) Vietnamese cultural personality, (2) Vietnamese traditional health beliefs, (3) financial stability, (4) environmental conditions, (5) social relationships and social support, and (6) cultural competence [21]. The data collected from the photovoice discussion groups were shared with community members, policy makers, and others who could be mobilized for change through community photo exhibitions, meetings, and forums. It also provided the foundation for the rationale and development of a Vietnamese Community Health Advisor (CHA) program.

The CHA program is based on the premise that in every community, "natural helpers" or "informal leaders" are recognized by their family, friends, and neighbors as reliable sources of advice, assistance, and action. CHAs work within their own social networks through person-centered webs of relationships that connect individuals to other individuals or groups [22,23]. Because CHAs share their communities' language, ethnicity, religious beliefs, and social characteristics, they can promote preventive behaviors within the community setting [24]. The program recruits these volunteers to participate in a training designed to increase their knowledge about health and social issues, develop

leadership skills, and build linkages with local service providers. After training, the trained natural helpers, or CHAs, plan and implement short- and long- term activities to improve their communities' health [25]. The CHA program was developed to focus on the health strengths recognized, address the vulnerabilities identified among community members, and build culturally appropriate interventions as a means to continue to decrease vulnerability in the Vietnamese community, with a focus on social support and acculturation as strong protective factors.

3. Methods

3.1. CHA Program

The Community Health Advisor Network (CHAN) curriculum [26] was adapted for utilization and development of the Vietnamese CHA project. After adaptation, it was then translated into Vietnamese, and facilitated in Vietnamese, with twenty-two community participants. This research project was approved by the Institutional Review Board at The University of Southern Mississippi (Protocol #18053102).

Training session content was determined from a community brainstorming session that was a part of a community forum and photovoice photo exhibition. During this community forum, photographs taken by Vietnamese participants were shared along with thematic results from the photovoice project. The community forum also highlighted the next steps of the project, recruited Vietnamese community member participation, and determined the training topics to be included in the CHA project. Topics of eating healthy, cholesterol, diabetes, high blood pressure, cancer, and mental health were identified as priority areas of interest by community members.

The adapted CHAN curriculum included eight three-hour training sessions. Session 1 focused on components of healthy communities and included a "past, present, and future" leadership development section. Participants discussed the MGC Vietnamese community's history and current pressing issues. Session 1 also included a visioning activity where participants presented their hopes for the future, and participatory "challenges" and "responses" group reflections, where community members work to identify the root causes of issues and move towards action. Session 2 included information based on healthy lifestyles (including eating healthy and nutrition topics), followed by CHA roles and responsibilities (Advice, Assistance and Action). Session 3 included information on high blood pressure and included a popular education method, the social tree, as the leadership activity. Session 4 content concentrated on cholesterol, with the leadership skills focused on the problem tree, another popular education method. Session 5 content was on diabetes and group consensus building. Session 6 highlighted information on cancer and practice of group consensus building skills. Session 7 underscored mental health, with the community action skills concentrating on the development of a short-term project. Sessions 8 focused planning for the larger or long-term project and post-evaluation tool collection. All content information was provided by local health service providers, and leadership skills were facilitated by Vietnamese-speaking project partners of a local community-based agency that prioritizes the Vietnamese community.

3.2. Data Collection Tools

The CHA Profile is a demographic tool that includes questions on languages spoken at home, education level, insurance status, household income, employment status, health information sources, and utilization of media resources. The CHA Core Competency Instrument [27] was adapted to measure core competency acquisition categories of leadership, translation, guidance, advocacy, and caring with a focus on vulnerability and resiliency content. Leadership, translation, guidance, advocacy, and caring have been identified as competencies that are unique to CHA and CHA roles. The SF8 is a multipurpose, 8-item survey translated in Vietnamese that measures eight domains of health: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. It has proven useful in assessing the

health of general and specific populations, comparing the relative burden of diseases, differentiating the health benefits produced by a wide range of treatments, and screening individual patients [28–30]. With permission, the Mental Health Needs of Asian Americans (MHNAA) [31] was utilized to assess mental health and health-seeking behaviors, as well as to identify level of concern related to various domains including basic needs, community and social issues, family and relationship issues, health issues, mental health, hardships experienced, immigration issues, and experience with domestic violence. All tools were collected at baseline and post-training. Additional formative methods of session training evaluations and discussion circles were used to assess design, delivery, and satisfaction.

4. Results

4.1. CHA Training Baseline and Post-Data

Twenty-two Vietnamese individuals participated in the CHA training and completed the pre- and post-data collection tools (Table 1). The participants ranged in age from 35 to 84, with an average age of 64.8 (±12.6) years. Twenty-two individuals provided information on gender. Males made up 36.4% of the training group (n = 8). The length of time that participants had been in the US varied and had a range of 2–78 years, with a mean of 27.5 (±18.2) years. Almost half of the participants were married (n = 10, 45.5%), 27.3% were single (n = 6), 13.6% were separated/divorced (n = 3), 9.1% were widowed (n = 2), and 4.5% reported living with a significant other (n = 1). The majority of participants were unemployed (63.6%, n = 14). Most had a high school diploma or the equivalent (68.2%, n = 15), 9.1% (n = 2) had completed some college, 18.2% had completed a Bachelor's degree (n = 4), and the remaining participant (n = 1, 4.5%) completed a Master's degree.

Table 1. Demographic characteristics of the study sample (n = 22).

Characteristic	n (%)
Gender	
Female	14 (63.6)
Male	8 (36.4)
Marital Status	
Single	6 (27.3)
Married	10 (45.5)
Separated/Divorced	3 (13.6)
Widowed	2 (9.1)
Living with Significant Other	1 (4.5)
Education	
HS Diploma or Equivalent	15 (68.2)
Some College	2 (9.1)
BS Degree	4 (18.2)
MS Degree	1 (4.5)
Employment Status	
Employed	8 (36.4)
Income Level	
Less than $9999	14 (63.6)
$10,000–$19,999	5 (22.7)
$20,000–$29,000	3 (13.6)

More than half of the participants reported a household income of less than $10,000 annually (n = 14, 63.6%), approximately one-fourth of participants (22.7%, n = 5) made between $10,000 and $19,000 annually, and 13.6% made between $20,000 and $29,000 annually (n = 3). Demographic data were also collected via the MHNAA [31], an instrument developed by the University of Houston that assesses the social and mental health needs of Asian Americans. Among the 22 participants who completed the assessment, 5 (22.7%) reported having children in their home under the age of 18, and 19 (86.4%) reported having a person 60 or above in their home. Multigenerational family living is the norm in the Vietnamese community, and three families had both children living in the home and individuals over the age of 60.

The MHNAA also collected data around the types of medical advice participants sought for health problems. Participants could select more than one option to describe the types of medical advice they sought. Among the 22 individuals who provided an answer to the question, 20 (90.9%) had visited a medical doctor, 2 (9.1%) had visited a herbal/non-westernized/alternative doctor or service, 6 (27.3%) sought advice through religious consultation, 2 (9.1%) sought advice from friends or family, and 1 (4.5%) had 'done nothing'. If given only one option through which to seek health advice, most (n = 18, 85.7%) would choose to visit a medical doctor with their health concerns. When asked who they sought advice from when they had family problems or difficulties, the most frequently chosen option was seeking advice from a mental health professional (n = 13, 61.9%), approximately half (n = 12, 57.1%) stated that they would seek advice from friends or family members, 8 (36.4%) stated that they would seek advice from a medical doctor, 5 (23.7%) stated that they would seek advice through religions consultation, and 6 (28.6%) stated that they would 'do nothing'.

Further, participants were asked to rate their concern on a scale of 'no concern' to 'serious concern' around specific domains that might impact themselves or their families. With regard to concerns related to basic needs, twenty individuals provided information about the topic of food security, and 30.0% (n = 6) had 'moderate' concerns around this topic. Nineteen individuals provided information around the topic of housing, and 10.5% (n = 2) had 'moderate' concerns around this topic. Three individuals out of 21 respondents (14.3%) had 'serious' concerns around clothing. The majority of the participants had concerns about income, with 7 (31.8%) categorizing their concern as 'moderate' and 4 (18.2%) categorizing their concern as 'serious'. Twenty participants responded to the topic of access to medical care, with 15.0% (n = 3) reporting 'moderate' concern, and 25.0% (n = 5) reporting that they had 'serious' concerns.

The MHNAA also collects information about concerns related to community and social issues. The topics that most had 'serious' concerns about were crimes against people (50.0%), lack of Asian volunteers in the community (40.0%), language barriers (35.0%), lack of child mentoring programs (33.3%), unemployment (31.6%), property crimes (27.3%), lack of adult daycare options (26.3%), and poor performance on the job or in school (25.0%). Additionally, a wide variety of family/relationship issues and health issues were assessed for level of concern. The only topics that were of serious concern to more than one-third of respondents were developing a disabling or terminal illness, which was a 'serious' concern for 36.4% of individuals, and having chronic pain or a chronic illness, which was a 'serious' concern for 31.8% of individuals. Lastly, 25 mental health symptoms were evaluated. Participants were asked to report how often they experienced each symptom on a scale from 'none' to 'very often'. Very few participants reported that they experienced any of the symptoms 'very often'; however, 21.1% of respondents (n = 4) reported that they felt hopeless about the future 'very often'.

On the next section of the MHNAA, participants were asked to report whether they or their families had experienced specific hardships. Approximately one-third (33.3%) had experienced war trauma, 27.8% had experienced refugee camps, 27.8% had experienced a dramatic loss of income, 21.1% had experienced loss or separation from their family, 21.1% had experienced a serious illness, and 10.0% had experienced a robbery. With regard to immigration hardships, 31.6% of participants reported experiencing acculturation issues, 30.0% had experienced being on public assistance as a result of immigrating, 20.0% had experienced immigration issues related to religious freedoms, and 19.0% experienced uncertainty of employment related to immigration.

Lastly, the MHNAA assessed experience with domestic violence. Approximately 10.0% of participants had experienced domestic violence. Participants were asked how frequently specific events related to domestic violence occurred in the last year. Most reported that events had occurred once, twice, or in the past but not in the last year. Answers were collapsed to reflect whether the event had ever occurred. For example, 13.5% of respondents had had something thrown at them, 9.0% had been pushed, slapped, kicked or hit with a fist, or had been 'beat up', and 4.5% had been threatened with a gun of knife.

The Community Health Advisor Core Competency Assessment was distributed prior to and after CHW training. Complete data for pre- and post-test were available for 12 participants. The assessment consists of 23 questions scored on a five-point Likert scale from 'Very Sure' to 'Not Very Sure'. The overall composite score for the assessment can range from 0 to 115 points. For the pre-test, the scores ranged from 31 to 99, with a mean of 64.3 (±16.4). For the post-test, the scores ranged from 64 to 115, with a mean of 102.2 (±15.2). There was a significant increase in scores from pre-test to post-test ($t = -5.962$, $df = 11$, $p < 0.0001$).

The participants also completed the SF-8 assessment. This assessment consists of eight questions designed to assess health-related quality of life. We analyzed the data to determine whether there was an overall improvement in SF-8 total scores, and also analyzed the data by domain (Table 2). The composite score was based on the participants' responses to the eight questions. Questions were based on a Likert-type scale, where lower scores represent optimal functioning for the eight domains that are evaluated. For the pre-test, the participants' scores ranged from 14 to 30, with a mean of 20.2 (±4.3). The post-test scores ranged from 8 to 18, with a mean of 12.6 (±2.7). There was a significant decrease in score from pre-test to post-test ($t = 5.759$, $df = 17$, $p < 0.0001$). This indicates that participants experienced statistically significant improvement in functioning after their training was completed. When subscales were examined, all eight domains showed a significant improvement in score from pre-test to post-test except the domain of emotional role (Table 2).

Table 2. SF-8 domain-specific dependent *t*-test results.

Domains	Mean Difference (Sd)	Significance
General Health	1.00 (1.45)	0.008
Physical Functioning	0.79 (1.18)	0.009
Role Physical	0.80 (0.95)	0.001
Bodily Pain	1.50 (1.10)	0.001
Vitality	1.00 (0.92)	0.001
Social Functioning	0.80 (1.11)	0.001
Mental Health	0.80 (1.10)	0.004
Role Emotional	0.20 (1.00)	0.385

4.2. CHA Projects

Post-training, CHAs work within their neighborhoods, churches, work, and other social-related networks to share correct health information and basic advice learned from community service providers during their trainings. CHAs provide assistance through referrals to appropriate community services and resources. Focusing on a neighborhood or community-wide health issue, CHAs work with local groups and agencies, organizing community action efforts to address community issues and problems. CHAs also plan, develop, and implement short- and long-term activities to improve their communities' health. Sessions 7 and 8 of the CHA training curriculum works with participants to utilize their leadership skills and develop community action plans for these short-term (immediate after the training) and long-term (6–12 months after training) activities post-training. One of the anticipated

outcomes of a CHA group is the development of a network to address community problems that one single person could not adequately address on his/her own.

The short-term project focused on addressing some of the environmental and transportation concerns identified through the photovoice project [21]. Many first-generation residents cannot drive and do not own a car. They rely on family or support programs for transportation or walk to nearby locations. Locally, a transit authority provides public transportation for low rates throughout the Mississippi Gulf Coast and has several stops in predominantly Vietnamese neighborhoods. Many residents are not aware of the bus stop locations and times to utilize this resource, as their English speaking and reading abilities are limited. The CHA group has worked with the project partners of a local Vietnamese community-based agency and the transit authority to update the map with times and locations in Vietnamese to publicize the resources within the community.

The long-term community project originally began with several discussions on chronic diseases such as hypertension, diabetes, cancer, and high cholesterol affecting the Vietnamese community. Since these Vietnamese individuals immigrated to the United States, their diets have been modified as they acculturated. The project partners of a local Vietnamese community-based agency had been working on a community garden and a healthy cooking project with other funders and constituents. Through collaborative efforts, the CHA group leveraged the partnerships to develop and publish a traditional Vietnamese cookbook with healthy recipes. Working with a dietitian and nutritionist, the Healthy Twists on Traditional Vietnamese cookbook is a compilation of twenty-two traditional Vietnamese recipes provided by CHAs and other community members, but modified to reduce or substitute high sodium, refined sugar, or empty carbohydrates in the recipes while maintaining the authenticity and flavors of the traditional dishes. The cookbook also contains oral histories from community members about their food memories, culinary traditions, and origination of recipes. These were collected by students from the Gulf Coast campus of the university and highlight the cultural context and significance of Vietnam to the Mississippi Gulf Coast. The Healthy Twists on Traditional Vietnamese cookbook has been formally published in both English and Vietnamese and is being shared among Vietnamese and other Asian-American subgroups.

5. Discussion

The purpose of this project was to address the social vulnerability of the Mississippi Gulf Coast Vietnamese Community through the development of a CHA network. We assessed factors associated with vulnerability and resiliency previously [21]. Though the sample size for this project was small and was not a random sample, the findings were consistent with more representative national samples. For example, a nationally representative sample of Vietnamese Americans reported that they would seek mental health advice from a professional (either a family doctor or mental health provider, or both), followed by talking to family or friends [32]. First-generation Vietnamese Americans have experienced various traumas that may impact their mental health and well-being. In our sample, approximately one-third of participants had experienced war trauma or refugee camps. The life course perspective suggests that factors effecting psychological health may differ between those Vietnamese Americans that experienced refugee conditions and those that immigrated without experiencing refugee conditions. For example, when refugees were compared to immigrants, factors such as sex, age at immigration, and trauma were associated with psychological distress in refugees; whereas racial discrimination was a factor associated with psychological stress among Vietnamese immigrants [33].

Approximately one-third of our sample had experienced a dramatic loss of income. This could have been as a result of Hurricane Katrina, or the more recent Deepwater Horizon BP oil spill. The dramatic loss of income is a concern, as financial strain has been shown to be the strongest predictor of post-disaster post-traumatic stress disorder (PTSD) symptoms in Vietnamese survivors of Hurricane Katrina [10]. Financial strain was also found to be a strong predictor of physical and mental health post-disaster.

Further, approximately 30% of our sample had 'moderate' concerns around food insecurity. When the California Health Interview Survey (CHIS) was used to assess the prevalence of food insecurity among Asian Americans [34], the highest prevalence of food insecurity was found among Vietnamese Americans (16.42%). Factors predicting food insecurity were low acculturation and speaking a language other than English at home.

Ten percent of respondents reported that they had experienced domestic violence. Nationally, Vietnamese Americans are the least likely subgroup of Asian Americans to experience intimate partner violence (IPV), with 7.7% of women and 6.1% of males experiencing minor IPV, and 1.62% of women and 1.21% of males experiencing severe IPV [35].

The Community Health Advisor Core Competency Assessment showed statistically significant improvement from pre- to post-assessment. This finding indicates that participants gained knowledge and comfort with regard to core skills required of CHAs such as in the areas of communication, adult learning methods, knowledge of social service agencies in the area, common health issues, and demonstrating concern/empathy.

While most community issues are multifaceted in nature, they do require targeted responses by group members experiencing the problem. The CHA group worked together to collaboratively address issues that they had previously defined as sources of vulnerability within their community. Through the CHA group, social resiliency was developed and particularly well suited for understanding, guiding, and improving relational processes within the community. An underlying assumption of this project is that networks, like CHA groups, can be utilized to promote individual and group resiliency.

The social and cultural assets of a community are of significant value to those who live and work in that community and are often difficult to quantify in numeric value or financial terms. However, they are important to consider when developing a framework for community resilience. This project seeks to advance culturally appropriate research and practice of MGC vulnerable populations and contribute to scientific knowledge and development of appropriate resiliency frameworks that are grounded in vulnerable communities' culture, language, and practices. Through these efforts, we can advance our understanding of the risk and protective factors of vulnerable communities on the MGC and use this information to tailor CHA interventions to build resilience in these vulnerable communities.

Author Contributions: S.M.-J. conceptualized the study, acquired funding, developed the intervention, conducted the investigation of the project, and drafted the manuscript. D.F. developed the methodology, assisted with literature review, analyzed results, and drafted and edited the manuscript. D.L. and J.N. contributed to the literature review, translation of training content and data analysis tools, facilitation of trainings, and edited the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: Funding for this research was provided by the National Institute on Minority Health and Health Disparities to The Gulf States Health Policy Center (grant #U54MD008602-05). Mayfield-Johnson is also partially supported by the National Institute of General Medical Sciences of the National Institutes of Health under Award Number 1U54GM115428.

Conflicts of Interest: The authors declare that they have no conflict of interest. The funders had no role in the design, execution, interpretation, or writing of the study.

References

1. Bright, C.F.; Hanks, R.; Sayre, E.; Broyles, A.; Bagley, B. If the Lord Is Willing and the Creek Don't Rise: Religious Attendance and Disaster Recovery in the Deep South. *Soc. Sci. Q.* **2019**, *100*, 76–88. [CrossRef]
2. Cutter, S.; Burton, C.; Emrich, C. Disaster Resilience Indicators for Benchmarking Baseline Conditions. *J. Homel. Secur. Emerg. Manag.* **2010**, *7*. [CrossRef]
3. Walker, G. *Environmental Justice: Concepts, Evidence and Politics*; Routledge: London, UK, 2012.
4. Hawkins, R.L.; Maurer, K. Bonding, Bridging and Linking: How Social Capital Operated in New Orleans Following Hurricane Katrina. *Br. J. Soc. Work* **2009**, *40*, 1777–1793. [CrossRef]
5. Cutter, S.L.; Emrich, C.T. Moral Hazard, Social Catastrophe: The Changing Face of Vulnerability along the Hurricane Coasts. *Ann. Am. Acad. Pol. Soc. Sci.* **2006**, *604*, 102–112. [CrossRef]

6. Lichtveld, M. Disasters through the Lens of Disparities: Elevate Community Resilience as an Essential Public Health Service. *Am. J. Public Health* **2017**, *108*, 28–30. [CrossRef] [PubMed]
7. National Research Council. *Disaster Resilience: A National Imperative*; National Academy Press: Washington, DC, USA, 2012.
8. Marchand, M. *Modelling Coastal Vulnerability: Design and Evaluation of a Vulnerability Model for Tropical Storms and Floods*; Ios Press: Amsterdam, The Netherlands, 2009.
9. Cutter, S.L.; Boruff, B.J.; Shirley, W.L. Social Vulnerability to Environmental Hazards. *Soc. Sci. Q.* **2003**, *84*, 242–261. [CrossRef]
10. Chen, A.C.-C.; Keith, V.M.; Leong, K.J.; Airriess, C.; Li, W.; Chung, K.-Y.; Lee, C.-C. Hurricane Katrina: Prior Trauma, Poverty and Health among Vietnamese-American Survivors. *Int. Nurs. Rev.* **2007**, *54*, 324–331. [CrossRef] [PubMed]
11. Colten, C.; Kates, R.; Laska, S. Three Years after Katrina: Lessons for Community Resilience. *Environment* **2008**, *50*, 36–47. [CrossRef]
12. Jacob, S.; Weeks, P.; Blount, B.; Jepson, B. Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. *Mar. Policy* **2013**, *37*, 86–95. [CrossRef]
13. Vu, L.; VanLandingham, M.J.; Do, M.; Bankston, C.L. Evacuation and Return of Vietnamese New Orleanians Affected by Hurricane Katrina. *Organ. Environ.* **2009**, *22*, 422–436. [CrossRef]
14. Do, M.; Pham, N.N.K.; Wallick, S.; Nastasi, B.K. Perceptions of Mental Illness and Related Stigma among Vietnamese Populations: Findings from a Mixed Method Study. *J. Immigr. Minor. Health.* **2014**, *16*, 1294–1298. [CrossRef] [PubMed]
15. Patel, M.M.; Saltzman, Y.L.; Ferreira, J.R.; Lesen, E.A. Resilience: Examining the Impacts of the Deepwater Horizon Oil Spill on the Gulf Coast Vietnamese American Community. *Soc. Sci.* **2018**, *7*, 203. [CrossRef]
16. Park, Y.; Miller, J.; Van, B.C. "Everything Has Changed": Narratives of the Vietnamese American Community in Post-Katrina Mississippi. *J. Sociol. Soc. Welf.* **2010**, *37*, 79–105.
17. Ngo, D.; Gibbons, J.L.; Scire, G.; Le, D. Mental Health Needs in Vietnamese American Communities Affected by the Gulf Oil Spill. *Psychology* **2014**, *5*, 109–115. [CrossRef]
18. Hoeffel, E.M.; Rastogi, S.; Kim, M.O.; Shahid, H. *The Asian Population 2010. 2010 Census Briefs*; US Census Bureau: Washington, DC, USA, 2012.
19. Policy Map. Percentage Population Speaking Vietnamese with Limited English. Available online: www.policymap.com/maps (accessed on 19 February 2020).
20. BPSOS. *Organizational Background*; BPSOS: Biloxi, MS, USA, 2017.
21. Mayfield-Johnson, S.; Le, D.; Fastring, D.; Nguyen, J. Describing Vulnerability and Resiliency through Photovoice: Generational Perspectives from the Mississippi Gulf Coast Vietnamese Community. *J. Health Care Poor Underserved* **2019**, *30*. [CrossRef]
22. Israel, B.A.; Rounds, K.A. Social Networks and Social Support: A Synthesis for Health Educators. *Adv. Health Educ. Promot.* **1987**, *2*, 311–351.
23. Eng, E.; Parker, E. Natural Helper Models to Enhance a Community's Health and Competence. In *Emerging Theories in Health Promotion Practice and Research*; Jossey-Bass: San Francisco, CA, USA, 2002; pp. 126–156.
24. Mayfield-Johnson, S. Adult Learning, Community Education, and Public Health: Making the Connection through Community Health Advisors. *New Dir. Adult Contin. Educ.* **2011**, *2011*, 65–77. [CrossRef]
25. Hinton, A.; Downey, J.; Lisovicz, N.; Mayfield-Johnson, S.; White-Johnson, F. The Community Health Advisor Program and the Deep South Network for Cancer Control: Health Promotion Programs for Volunteer Community Health Advisors. *Fam. Community Health* **2005**, *28*, 20–27. [CrossRef]
26. Community Health Advisor Network. *CHAN Community Facilitator Implementation Manual*; Center for Sustainable Health Outreach: Hattiesburg, MS, USA, 2000.
27. Story, L.; To, Y.M. Evaluating Community Health Advisor (CHA) Core Competencies: The CHA Core Competency Retrospective Pretest/Posttest (CCCRP). *J. Transcult. Nurs. Off. J. Transcult. Nurs. Soc.* **2016**, *27*, 218–225. [CrossRef]
28. Sugimoto, M.; Takegami, M.; Suzukamo, Y.; Fukuhara, S.; Kakehi, Y. Health-Related Quality of Life in Japanese Men with Localized Prostate Cancer: Assessment with the SF-8. *Int. J. Urol.* **2008**, *15*, 524–528. [CrossRef]

29. Tokuda, Y.; Okubo, T.; Ohde, S.; Jacobs, J.; Takahashi, O.; Omata, F.; Yanai, H.; Hinohara, S.; Fukui, T. Assessing Items on the SF-8 Japanese Version for Health-Related Quality of Life: A Psychometric Analysis Based on the Nominal Categories Model of Item Response Theory. *Value Health J. Int. Soc. Pharmacoecon. Outcomes Res.* **2009**, *12*, 568–573. [CrossRef] [PubMed]
30. Lang, L.; Zhang, L.; Zhang, P.; Li, Q.; Bian, J.; Guo, Y. Evaluating the Reliability and Validity of SF-8 with a Large Representative Sample of Urban Chinese. *Health Qual. Life Outcomes* **2018**, *16*, 55. [CrossRef] [PubMed]
31. Leung, P.; Cheung, M.; Cheung, A. Vietnamese Americans and Depression: A Health and Mental Health Concern. *Soc. Work Ment. Health* **2010**, *8*, 526–542. [CrossRef]
32. Kim-Mozeleski, J.E.; Tsoh, J.Y.; Gildengorin, G.; Cao, L.H.; Ho, T.; Kohli, S.; Lam, H.; Wong, C.; Stewart, S.; McPhee, S.J.; et al. Preferences for Depression Help-Seeking Among Vietnamese American Adults. *Community Ment. Health J.* **2018**, *54*, 748–756. [CrossRef]
33. Kim, I.; Keovisai, M.; Kim, W.; Richards-Desai, S.; Yalim, A.C. Trauma, Discrimination, and Psychological Distress Across Vietnamese Refugees and Immigrants: A Life Course Perspective. *Community Ment. Health J.* **2019**, *55*, 385–393. [CrossRef]
34. Becerra, M.B.; Mshigeni, S.K.; Becerra, B.J. The Overlooked Burden of Food Insecurity among Asian Americans: Results from the California Health Interview Survey. *Int. J. Environ. Res. Public Health* **2018**, *15*, 1684. [CrossRef]
35. Chang, D.F.; Shen, B.-J.; Takeuchi, D.T. Prevalence and Demographic Correlates of Intimate Partner Violence in Asian Americans. *Int. J. Law Psychiatry* **2009**, *32*, 167–175. [CrossRef]