

# Evaluation of Community Health Education Workshops among Chinese Older Adults in Chicago: A Community-Based Participatory Research Approach

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## Abstract

**Background:** Health education is one of the proven ways to improve knowledge and change health attitudes and behaviors. This study is intended to assess the effectiveness of five health workshops in a Chinese community, focusing on depression, elder abuse, nutrition, breast cancer and stroke.

**Methods:** A community-based participatory research approach was implemented to plan and organize the workshops. A total of 236 Chinese community-dwelling older adults participated in different health workshops. Quantitative questionnaires on knowledge, risk factors and outcomes of each health topic were distributed before and after the workshop. Pre and post workshop comparison analyses were conducted to examine the effectiveness of the workshops on knowledge and learning.

**Results:** Overall, the health workshops have significantly improved participants' understanding throughout the five health themes ( $P < 0.05$ ). Whereas Chinese older adults have limited knowledge on depression, nutrition and stroke, their health knowledge regarding depression and elder abuse were significantly improved after attending the workshops. In addition, health education workshops increased older adults' understanding of the risk factors and consequences of depression, elder abuse and breast cancer.

**Conclusion:** This study sheds light on the importance of promoting health education, and the complexity and challenges of designing health education for community dwelling Chinese older adults. Significant implications for researchers, community service providers, health service workers and policy makers are discussed.

**Keywords:** health education, depression, older adults, Chinese population

## 1. Introduction

Health education refers to collaborative efforts aiming to enhance the health of individuals, families and communities at the micro and macro levels. Education programs are designed to influence people's health behaviors and attitudes through knowledge, goal-setting and action plans (Blackstock & Webster, 2007). There are various kinds of health education programs. Community workshops and focus group discussions are among the most commonly implemented measures to promote health. Education programs are proven to be effective platforms for residents to discuss local health issues, and further provide opportunities for face-to-face interactions with health care professionals.

The contribution of health education programs on improving individual and community well-being has been well-recognized. On an individual level, health education programs increase resident's knowledge and understanding towards disease prevention and intervention, and therefore improve their physical and psychological well-being. On the community level, health education plays an important role in preventing diseases and injuries, improving a community member's health and enhancing quality of life (Tones & Sylvia, 1994). It also enables community leaders to have a better understanding of the community member's level of health knowledge so as to create or develop effective health interventions.

Health education programs designed for older adults have been shown to be effective ways to improve health and overall well-being. Health education programs are extremely valuable for reconstructing health beliefs regarding memory and aging, and maintaining the health and quality of life of vulnerable older adults (Turner & Pinkson, 1993).

Despite the effectiveness of health education programs among aging communities, very few have been conducted in Chinese populations—one of the fastest growing groups in the US. It is estimated that the population of Chinese older adults is projected to increase 643% between 1990 and 2030, in comparison with 91% for the white non-Hispanic older population (American Association of Retired persons & Agency on Aging, 1996). The Chinese aging population is suffering from low English language proficiency, cultural barriers, acculturation stresses and health knowledge deficits, which may lead to poor health outcomes and low medical compliance with prescribed treatment (Mui, 2007; McCracken et al., 2007; Yu, Kim, Chen & Brintnall, 2001). Studies have demonstrated that Chinese older adults are at higher risk of health disparities. They are reported to have higher likelihoods of liver and nasopharyngeal cancer, elder abuse, psychological distress and mental illness in comparison with their Caucasian counterparts (Yu, Tang & Zhou, 1986; Ren & Chang, 1998).

In Chinese culture, health is heavily influenced by Confucius philosophy, which emphasizes the balance between Yin and Yang. Herbs and diet are considered to be effective treatments to retain good health (Mehrotra & Wagner, 2008). In the context of immigration, Chinese families tend to maintain traditional health and diet habits (Whittemore et al., 1990). A cross-sectional survey among Chinese Americans further suggests that older and less educated Chinese adults had largely maintained Chinese health beliefs, which may influence dietary practices and increase the risk of chronic illness (Satia-Abouta, Patterson, Neuhouser & Elder, 2002). Moreover, Chinese immigrants tend to conceal their mental illness or elder abuse issues so as to save face and prevent bringing shame to their families (Choi & Gonzalez, 2005). This cultural barrier may decrease their motivations to seek knowledge and help from health professionals. A study on older Chinese immigrants' depression literacy in Canada has shown that Chinese immigrants are less likely to identify depression when compared to their Canadian-born age peers (Tieu, Konnert & Wang, 2010). Furthermore, Chinese people have limited mental health knowledge, which in turn results in their delayed response to mental health professionals (Zhang, Wang & Song, 2009).

Even though health disparities among Chinese older adults have been reported, little is known regarding the strategies and effective interventions for reducing health disparities and improving older Chinese adults' health and quality of life. There exist significant linguistic and cultural factors unique to Chinese older adults that may influence their health needs, particularly on mental health issues and elder abuse (Dong et al., 2011). Considering cultural diversity has become the prerequisite for health education program planning as well as for the design of prevention and intervention programs for this vulnerable population.

To address the knowledge gap, the purpose of this project was to investigate pressing health issues in the Chinese aging population, utilizing a community-based participatory research design approach. The objectives of this study are to: (a) Identify Chinese older adults' health knowledge towards different health topics; (b) Assess the effectiveness of health education among older adults in Chinese community and (c) Explore the barriers and challenges of conducting health education programs and providing services to Chinese older adults in the United States.

## **2. Methods**

### *2.1 Designs and Procedure*

In order to capture the cultural and linguistic complexity among minority immigrant older adults, it is important to collaborate with the community service agencies in a sustainable and culturally sensitive way (Dong et al., 2010). Community-based participatory research (CBPR) refers to "a systematic inquiry with the participation of those affected by the issue being studied, for the purpose of education and taking action or affecting social change" (Green & Mercer, 1995). CBPR is acknowledged as a promising approach to increase public health relevance (Leung, Yen & Minkler, 2003). The rationales of CBPR have been discussed in the literature, which include: a) increasing public health relevance; b) overcoming the understandable distrust of research among communities; c) bridging the cultural gaps between the partners involved; d) improving the quality and validity of research by incorporating the local knowledge (Israel, Schulz, Parker & Becker, 1998). Being aware of the challenges of implementing CBPR in Chinese communities, Dong, Chang, Wong & Simon (2011) further highlighted the importance of establishing partnerships with a humble approach, acknowledging community diversity in languages and cultures, building on community strengths, as well as empowering communities through education in the collaboration. In this study, we partnered with Chinese American Service League (CASL), the

largest and most comprehensive non-profit Chinese social service agency in the Midwest serving the needs of Chinese populations.

The formation of this community-academic partnership allows us to develop appropriate research methodology in accordance with the local Chinese cultural context, in which a community advisory board (CAB) plays a pivotal role in providing insights and strategies for conducting research. The board is composed of community leaders and stakeholders from a variety of organizations who have frequent interactions with the aging population and a broad range of expertise in community fairs. A series of CAB meetings were held at the community centers to guide and oversee the workshop preparations. CAB members worked extensively with the investigative team to identify health needs, review workshop topics, examine presentation preparations, evaluate instruments and session presentations with the goal of ensuring cultural sensitivity and appropriateness. Given the inherent diversity of Chinese communities, workshop materials were carefully designed and developed according to cultural and linguistic complexities. Questionnaires were prepared in English, traditional Chinese and simplified Chinese in order to accommodate community residents. Speakers were invited to first tour the community centers and gain insights on the history and cultural heritage of the Chinese community before delivering the session. Due to the synergistic partnership with the local community service agency, participants were invited from different social groups and senior apartments.

Based on years of experiences serving Chinese older adults, twenty CAB members and stakeholders identified the following workshop topics: (a) breast cancer; (b) depression in older adults; (c) elder abuse; (d) nutrition and aging; (e) stroke prevention, screening, diagnosis, and treatment.

Regarding workshop procedures, speakers were physicians or researchers invited from medical centers and hospitals in the greater Chicago area. Each workshop lasted 2 hours and took place in community centers. All of the workshops were conducted in Mandarin, Cantonese and English.

## 2.2 Measurement

Questionnaires for each health topic were designed by the speakers based on his/her expertise in public health research. The questionnaires were subsequently reviewed by bilingual and bicultural principal investigators. Bilingual research assistants administered data entry and calculated accuracy after collecting the questionnaires. The accuracy was then checked and confirmed by bilingual research manager. Regarding translation, we applied a back translation technique to verify the accuracy. Two bilingual research assistants first translated the English version into Chinese, and then the Chinese questionnaires were translated back into English by other research assistants. The original and back-translated versions were compared to check the difference and comparability by the principal investigator. The survey questionnaire covered the following factors: (a) existing knowledge about the health topics; (b) risk factors and consequences. Survey questions are included in Table 1.

Table 1. Survey questions from five workshops

Theme	Questions
Depression	<p><b>Knowledge</b></p> <ol style="list-style-type: none"> <li>1. Depression always has an obvious cause?(True or False)</li> <li>2. Ginseng has been shown to be effective in preventing depression?(True or False)</li> <li>3. When depression is properly diagnosed and treated, of those suffering from it, will recover?(True or False)</li> <li>4. Depression can commonly cause?(Multiple choices)</li> <li>5. What group of women has the highest suicide rate in the US?(Multiple choices)</li> <li>6. Common symptoms of depression include feeling worthless or helpless, feeling sad for two weeks or more, and having difficulty sleeping and concentrating? (Multiple choices)</li> <li>7. A glass of wine or beer could help people to deal with depression better? (True or False)</li> </ol> <p><b>Risk factor and consequences</b></p>

	<p>8. When people get older, it is nature to be depressed?(True or False)</p> <p>9. If the depression medicine my doctor prescribes does not work in one week, it means that it is not effective in me? (True or False)</p> <p>10. Which one of the following is the best way to treat depression?(Multiple choices)</p> <p>11. If the depression medicine does not work for me, stopping it should not cause any problem to my health? (True or False)</p> <p>12. The most common side effect of Serotonin Enhancer is? (Multiple choices)</p> <p>13. How long does it usually take for the Serotonin Enhance to work and make me feel better?(Multiple choices)</p> <p>14. Among the different types of depression medications, the one that is most common in causing heart problems is?(Multiple choices)</p> <p>15. 15. Contributors to depression include?(Multiple choices)</p>
Nutrition	<p><b>Knowledge</b></p> <p>1. Herbal products advertised as anti-aging are a good bet for a longer life? (True or False)</p> <p>2. Nibbling on chocolate may actually be healthy? (True or False)</p> <p>3. Butter and margarine have about the same number of calories?(True or False)</p> <p>4. Canned or frozen fruits and vegetables contain fewer nutrients than the fresh fruits and vegetables? (True or False)</p> <p>5. If you are older than 55, which is the best source of vitamin B-12?(Multiple choices)</p> <p>6. Which is the best source of vitamin E?(Multiple choices)</p> <p>7. Which supplement is least likely to do what its proponents claim it does?(Multiple choices)</p> <p><b>Risk factor and consequence</b></p> <p>8. No matter how much you exercise and how healthy your diet, whether you end up sickly or healthy in your later years is largely determined by your genes? (True or False)</p> <p>9. My body needs less protein than it did when I was younger?(True or False)</p> <p>10. Our bodies tend to lose muscle mass as we age? (True or False)</p> <p>11. Medications can reduce my appetite? (True or False)</p> <p>12. Losing weight, even if I'm not trying to, is OK at my age? (True or False)</p> <p>13. Which B-vitamin can cause nerve damage if taken in high doses?(Multiple choices)</p> <p>14. High doses of vitamin A or its precursor (beta-carotene: may raise the risk of all but one of the following. Which one?(Multiple choices)</p> <p>15. Which food may protect your eyes as you age?(Multiple choices)</p>
Elder Abuse	<p><b>Knowledge</b></p> <p>1. Elder mistreatment is?(Multiple choices)</p> <p>2. Elder mistreatment occurs most commonly in these countries? (Multiple choices)</p>

	<p>3. Disrespect is a common form of elder mistreatment? (True or False)</p> <p>4. There is nothing society can do about elder mistreatment. It is a strictly a family matter? (True or False)</p> <p>5. Elder mistreatment is always a criminal offense that should go to legal court?(True or False)</p> <p>6. Elder mistreatment is uncommon among Chinese because?(Multiple choices)</p> <p>7. Illinois law mandates the following groups to report elder mistreatment? (Multiple choices)</p> <p>8. Elder mistreatment includes the following types?(Multiple choices)</p> <p><b>Risk factor and consequences</b></p> <p>9. Women are more likely to be mistreated than men?(True or False)</p> <p>10. Those who are mistreated are more likely to go to a nursing home?(True or False)</p> <p>11. Doctors could do very little to help the victims of elder mistreatment?(True or False)</p> <p>12. Risk Factors for Elder Mistreatment are?(Multiple choices)</p> <p>13. People who are mistreated die prematurely than those who did not suffer mistreatment? (True or False)</p> <p>14. Greater social support from community and family can lower the risk of elder mistreatment? (True or False)</p> <p>15. People who are mistreated die prematurely because of the following reasons? (Multiple choices)</p>
Stroke	<p><b>Knowledge</b></p> <p>1. Stroke prevention strategies include? (Multiple choices) (Multiple choices)</p> <p>2. If you suspect someone having a stroke, what should you do? (Multiple choices)</p> <p>3. Someone experiencing a stroke can tell you they are having a stroke? (True or False)</p> <p><b>Risk factor and consequence</b></p> <p>4. What are common medications taken to prevent stroke? (Multiple choices)</p> <p>5. A stroke diagnosis is easy to make?(True or False)</p> <p>6. Removing a clot and restoring blood flow guarantees stroke recovery? (True or False)</p> <p>7. What does stroke screening involve? (Multiple choices)</p>
Breast Cancer	<p><b>Knowledge</b></p> <p>1. What is the most common type of cancer in women in the United States (not including skin cancer)? (Multiple choices)</p> <p>2. At what age should a woman stop receiving mammograms? (Multiple choices)</p> <p>3. What is a mammogram? (Multiple choices)</p> <p>4. What is a biopsy of the breast? (Multiple choices)</p> <p>5. What if the mammogram is abnormal? (Multiple choices)</p> <p><b>Risk factor and consequences</b></p>

	<p>6. What is a risk factor for breast cancer? (Multiple choices)</p> <p>7. Are all breast cancer caused by genetic mutations like BRCA genes? (Multiple choices)</p> <p>8. What is the treatment for breast cancer? (Multiple choices)</p> <p>9. The most important thing you can do if you are diagnosed with breast cancer- is to follow-up with your doctors? (True or False)</p> <p>11. Is all breast cancer hereditary? (True or False)</p> <p>12. What is the most important thing to do after receiving a mammogram ?(Multiple choices)</p>
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### 2.3 Evaluation and Data Analysis

Pre and post questionnaire scores were compared to assess the effectiveness of the workshops. Before the workshop, each participant was given a pre workshop questionnaire to evaluate existing knowledge on the health topic presented. After the workshop, the same questionnaire was distributed to the participants. A correction rate is calculated by the number of people who got the correct answer, divided by the total participants of each workshop. We compared pre and post correction rates to evaluate each workshop performance.

For statistical analysis, paired t-tests and independent T-tests were performed to assess the variance between pre and post tests. The 0.05 probability level was used to analyze the result. (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.)

## 3. Results

### 3.1 Descriptive Analysis

In total, 8 workshops covering 5 health topics were organized. 236 Chinese older adults participated in the workshops. Due to different workshop settings, depression had the highest participant number (N=85), followed by nutrition (N=77). Elder abuse workshop had the least number of participants (N=7).

### 3.2 Pre and Post Workshop Variance

The evaluation of the findings focused on: (a) overall workshop performance which includes the results from all the questions on knowledge, risk factors and consequences; (b) pre and post workshop difference on the knowledge of each health topic; (c) pre and post workshop differences of the risk factors and consequences of each health topic.

#### 3.2.1 Overall Workshop Performance

Table 2. Pre and post workshop overall performance difference

Themes	Number of Participants	Pre Workshop		Post Workshop		Difference		
		M	SD	M	SD	M	t	P
1	236	33.03%	0.3018	45.29%	0.3009	12.26%	-5.640	0.000
Breast Cancer	12	69.44%	0.1521	75.00%	0.1846	5.56%	-1.431	0.180
Depression	85	5.85%	0.0786	28.23%	0.1630	22.38%	-6.238	0.000
Elder Abuse	7	40.00%	0.3423	60.95%	0.3435	20.95%	-5.358	0.000
Nutrition	77	27.53%	0.2319	33.84%	0.2305	6.31%	-3.035	0.009
Stroke	55	31.69%	0.2112	24.94%	0.1672	-6.75%	0.710	0.504

We first compared the difference in the correction rate between the pre and post workshop tests (**Table 2**).Pre

and post workshop comparison analyses yielded significant differences in three themes: depression ( $M_{pre}=5.85\%$ ,  $M_{post}=28.23\%$ ,  $P=0.000$ ); elder abuse ( $M_{pre}=40.00\%$ ,  $M_{post}=60.95\%$ ,  $p=0.000$ ); and nutrition ( $M_{pre}=27.53.00\%$ ,  $M_{post}=33.84\%$ ,  $P=0.009$ ). Overall, participants demonstrated a large and significant increase in their understanding of the health topics, from 33.03% pre workshop correct to 45.29% post workshop correct ( $P=0.000$ ). It is also worth noting that participants still possessed insufficient knowledge on themes such as depression, nutrition and stroke, where correction rates were less than fifty percent pre and post workshop. Also, no significant differences were found on the breast cancer and stroke workshops.

### 3.2.2 Pre and Post Workshop Performance Difference on Knowledge Factors

Table 3. Knowledge factor analysis

Themes	Number of Questions)	Pre Workshop		Post Workshop		Difference		
		M	SD	M	SD	M	t	P
Knowledge (All)	30	30.95%	0.2983	43.18%	0.2875	12.23%	-4.313	0.000
Breast Cancer	6	70.83%	0.1559	68.06%	0.2069	-2.77%	0.791	0.465
Depression	7	4.35%	0.0491	28.17%	0.2055	23.82%	-3.790	0.009
Elder Abuse	7	34.69%	0.3284	59.18%	0.3443	24.49%	-9.295	0.000
Nutrition	7	23.81%	0.2005	28.46%	0.1811	4.65%	-2.189	0.071
Stroke	3	21.21%	0.129	25.45%	0.1845	4.24%	-0.445	0.700

Participants' knowledge on all health themes was significantly improved after the workshop ( $M_{pre}=30.95\%$ ,  $M_{post}=43.18\%$ ,  $P=0.000$ ) (**Table 3**). In particular, significant differences were found in depression and elder abuse themes. Prior to the workshop, the correction rate of the knowledge on depression was 4.35%, which increased to 28.17% ( $P=0.009$ ) after the workshop. The difference in the mean correction rate of the elder abuse knowledge between pre workshop and post workshop was also statistically significant ( $M_{pre}=34.69\%$ ,  $M_{post}=59.18\%$ ,  $P=0.000$ ). No significant pre post workshop differences were found in the nutrition, breast cancer and stroke themes.

### 3.2.3 Pre and Post Workshop Performance Difference on Risk Factors and Consequences

Table 4. Risk factors and consequences factor analysis

Themes	Number of Questions)	Pre Workshop		Post Workshop		Difference		
		M	SD	M	SD	M	t	P
Risk factors and consequences (All)	33	34.91%	0.3082	47.21%	0.3158	12.29%	-3.730	0.001
Breast Cancer	5	66.67%	0.1768	85.00%	0.1369	18.33%	-5.880	0.004
Depression	8	7.15%	0.0994	28.29%	0.1302	21.14%	-4.955	0.002
Elder Abuse	8	44.64%	0.3697	62.50%	0.3657	17.86%	-2.546	0.038
Nutrition	8	30.78%	0.2655	38.54%	0.2698	7.76%	-2.224	0.062
Stroke	4	39.55%	0.2427	24.55%	0.1821	-15.00%	1.015	0.385

Participant's perceptions of risk factors and consequences increased from 34.91% (SD =0.31) correct to 47.21% correct (SD=0.32,  $p=0.001$ ) after the workshops (**Table 4**). Following the workshop, participants reported significant improvement in the knowledge of the risk factors and outcomes of depression, elder abuse and breast

cancer themes. Pre workshop data indicated that participants had insufficient knowledge of the risk factors and consequences of depression ( $M=7.15\%$ ,  $SD=0.10$ ). The correction rate had increased to 21.14% ( $P=0.002$ ) after the workshop. The data also revealed an increase in the correct perception of the risk factors and consequences of elder abuse, as the mean correction rate increased from 44.64% to 62.50% ( $P=0.038$ ). Similar improvements were also noted in the breast cancer workshop, with a 66.67% average correction rate compared before the workshop with an 85.00% correction rate after the workshop ( $p=0.004$ ).

#### **4. Discussion**

##### *4.1 General Findings*

The findings indicate that Chinese older adults' knowledge on important health topics is insufficient. Education programs for Chinese older adults are effective in improving older adults' health knowledge, especially on culturally sensitive topics such as depression and elder abuse. Health education workshops provide Chinese older adults opportunities to learn and improve health knowledge, which is essential for changing health attitudes and behaviors.

Our findings suggest that Chinese older adults have insufficient knowledge on depression. The low correction rate on the risk factors and consequences in pre test indicates older adults are less aware of the symptoms of depression, which may delay the time that seniors look for help. Depression is prevalent among Chinese older adults (Dong, Chang & Simon, 2011). It has been recognized as the most significant, and the most treatable risk factor for completed suicide (Conwell, Duberstein & Caine, 2002). To reduce the suicide risk in older adults, many national reports have emphasized the need for interventions (Goldsmith, Pellmar, Kleinman & Bunny, 2002). Teaching patients how to change lifestyles and regulate symptoms through education and chronic-disease management may be helpful in reducing depression (Martensson, Stromberg, Dahlstrom, Karlsson & Fridblund, 2005). Education workshops in the present study enhanced older adults' depression knowledge, especially on the understanding of risk factors and consequences. Our findings suggest that the increased understanding of intervention helps older adults to be more familiar with medical treatments. Older adults can benefit from developing knowledge of the medications and treatments for depression through participating in this kind of education program.

The findings show that the participants are lacking of knowledge on elder abuse. Barriers to help-seeking among abuse victims often include the local culture, language issues, literacy, stigma, or lack of mobility (Podnieks, Anetzberger, Wilson, Teaster & Wangmo, 2010). Due to cultural sensitivities and lack of awareness, elder abuse remained unexplored among Chinese communities (Dong, Simon, Gorbien, Percak & Golden, 2007; Yan & Tang, 2001; Dong, Chen, Chang & Simon, 2013). Based on our findings, older adults' knowledge of elder abuse and related risk factors are significantly improved after participating in workshops, indicating that education programs are effective at improving health knowledge. Older adults are more aware of the adverse health indicators after the workshops. Current and prior research supports the need to increase awareness and develop many more elder abuse education programs in Chinese communities.

Knowledge disparity also exists on the understanding of nutrition. The education workshops significantly improved older adults' knowledge on nutrition. Older adults are more likely to maintain the traditional health and diet habits. After participating in the education workshop, older adults have a better understanding of the use of vitamins and medications that may help them prevent some chronic diseases. Therefore, education workshops delivering nutrition information can be powerful by correcting and improving older adults' traditional diet knowledge.

Compared to other workshops, older adults performed much better on the understanding of breast cancer on the pretest, which may partly due to community's increased efforts in promoting breast cancer screening. After attending the workshops, older adults increased their understanding on the risk factors and consequences of breast cancer. Knowing the risks factors and consequences of breast cancer may give Chinese older adults the impetus to practice cancer screening. Chinese American women have a low level of cancer screening tests because of acculturation and modesty (Yu et al., 2001; Tang, Solomon & McCracken, 2000). A study conducted by Facione, Giancarld & Chan (2000) also shows that Chinese adults prefer to use Chinese medicine and delay western therapies so as to preserve modesty and to conserve wealth and time. Delay in the screening and treatment of breast cancer may decrease a woman's chance of survival. In order to overcome the barriers and challenges facing Chinese older adults, it is crucial to design, evaluate and promote health education programs that are culturally relevant.

Lastly, our findings suggest that Chinese older adults' knowledge on stroke remains poor. Stroke is the second most common cause of the mortality in China, with an estimation of more than one million deaths each year



(World Health Organization, 1997; Fang, Fung, Wylie-Rosett & Alderman, 2006). It is also one of the main contributors to cardiovascular mortality among Chinese older adults in the United States (Choi, McGandy, Dallal, Russell & Jacob, 1990). Awareness of stroke warning signs is important for activating emergency medical services. Education programs designed for increasing knowledge about stroke warning signs and risk factors therefore warrant much more attention. Unfortunately, the education workshop in the current study failed to improve older adults' knowledge on this topic. The failure of this education workshop implies that there were might be some issues with the design of the questionnaire or the content of the curriculum. The exact reasons for the failure need further analyses.

#### *4.2 Barriers and Challenges to Conduct Workshops among Chinese Older Adults*

Our study identified the barriers and challenges of conducting education programs among Chinese older adults. First, language is one significant barrier to translating and communicating the health information to Chinese older adults. Even within Chinese communities, dialects are noticeably different. Participants in our workshops spoke Cantonese, Mandarin and Toisanese, with poor knowledge in English. As a result, we arranged the workshops and assigned the coordinators according to participants' language ability, which increased older adults' interest and attentions on the workshop contents. Second, cultural stigmas may be attached to some illnesses such as cancer and depression, which prevent older adults from seeking or talking about health information (Zou & Parry, 2012). For instance, Chinese older adults are very sensitive to the depression topic and often shy away from any discussion relating to mental distress. One strategy to solve this issue is to encourage them to talk with the presenters or research assistants after the workshops. We found that older adults were more likely to seek health information on culturally sensitive conditions in more personal and private ways.

#### *4.3 The CBPR Approach*

With the complexity of health determinants and disparities experienced by marginalized older adults, evidence-based interventions will benefit from knowledge of and respect for a community's cultural values (Dong et al., 2011). We believe the CBPR approach makes a great contribution to the success of education workshops. We have learned that the effort to address language diversity and communication difficulties leads to the high workshop performances. Workshops were conducted with culturally and linguistic sensitive measures. For instance, in Chinese culture, revering older adults remains an integral part of Confucius teachings, and older adults in return are expected to provide guidance and wisdom to the community. During our workshops, culturally specific issues, such as respect for older adults, were given particular emphasis. Speakers and facilitators encouraged Chinese older adults to speak up without being authoritative or making them feel as though they are "losing-face". Therefore, participants did not shy away from discussing sensitive issues such as depression and elder abuse, but were rather vocal about their interests to learn about ways to combat depression, or to report abuse cases.

Community resources are also key contributors to the quality of workshops. Since presentations were organized in community centers, participants were familiar with the settings and had easy access to workshops. CASL staff who were trained and experienced took turns interpreting the workshops. The arrangement helped the facilitators open conversations, as Chinese older adults were more expressive among familiar and trusted CASL staff.

The CBPR approach promotes mutual understanding between health care professionals and Chinese older adults. Speakers have become aware of the cultural and linguistic diversity of Chinese communities. In addition, through interacting with the older adults during the workshops, speakers gained a better sense of Chinese older adults' cultural perception of health, which is critical to foster mutually beneficial physician-patient relationships in clinical encounters. Last, speakers found the concept of cultural humility extremely helpful in engaging in participatory research in the Chinese community. Whereas advocacy for older adults' health is integral to the field of gerontology and public health, genuine understanding and practice of culturally sensitive research is a critical step for advancing social change for this vulnerable population. Historically speaking, health research was set in the community without the community's active engagement in framing the research phases. The lack of cultural insights and sensitivity in approaching communities renders findings inapplicable to health care services; furthermore, the community is left without infrastructure or educational tools to address its own needs. With CBPR design, researchers and community educators were allowed to employ action-oriented approaches to partnership building through educational outreach efforts, which is vital in empowering community-dwelling Chinese older adults.

### **5. Limitations**

Despite the above findings, a number of limitations should also be addressed. First, we only measured the short-term outcomes of the health workshop. In order to understand the effectiveness of the education programs in a more comprehensive way, follow up data on cognitive improvement, physical and psychological wellbeing

should be collected in the next research step.

Second, this study did not collect participants' demographic information such as gender, education level and income. Future in-depth studies are needed to evaluate the impact of health workshops within and between different subgroups.

Third, our workshops were conducted on a sample from the City of Chicago, and workshops on elder abuse and breast cancer had relatively small samples due to workshop setting, which may not be generalizable to other Chinese communities in the US. Despite the above limitations, this study provides unique insights into the effectiveness of culturally sensitive education programs among Chinese older adults.

## 6. Conclusion and Future Direction

Overall, culturally adapted health education programs are effective in improving Chinese older adults' knowledge on locally relevant health issues. Our results highlight the needs for expanded health education programs targeting Chinese older adults. Further in-depth studies combining qualitative and quantitative methods are needed to evaluate the long-term impact of health education programs. Future research should also investigate the culturally appropriate approaches to educate minority older adults on specific topics such as breast cancer and stroke. Local government, community, and health professionals all play critical roles in enhancing Chinese older adults' health literacy, and in improving older adults' health and quality of life.

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