

RESEARCH ARTICLE

A multi-sector assessment of community organizational capacity for promotion of Chinese immigrant worker health

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Background: Community-based collaborative approaches have received increased attention as a means for addressing occupational health disparities. Organizational capacity, highly relevant to engaging and sustaining community partnerships, however, is rarely considered in occupational health research.

Methods: To characterize community organizational capacity specifically relevant to Chinese immigrant worker health, we used a cross-sectional, descriptive design with 36 agencies from six community sectors in King County, Washington. Joint interviews, conducted with two representatives from each agency, addressed three dimensions of organizational capacity: *organizational commitment*, *resources*, and *flexibility*. Descriptive statistics were used to capture the patterning of these dimensions by community sector.

Results: Organizational capacity varied widely across and within sectors. Chinese and Pan-Asian service sectors indicated higher capacity for Chinese immigrant worker health than did Chinese faith-based, labor union, public, and Pan-ethnic nonprofit sectors.

Conclusions: Variation in organizational capacity in community sectors can inform selection of collaborators for community-based, immigrant worker health interventions.

KEYWORDS

community sectors, immigrant worker health, occupational health disparities, organizational capacity

1 | INTRODUCTION

Private community agencies and public government agencies are important resources for the promotion of worker health and wellbeing. Collaboration across agencies is especially critical for immigrant worker populations whose members tend to be employed in small businesses, a key occupational sector with recognized resource constraints for occupational health and safety (OHS) protection and promotion strategies.¹⁻⁴ Moreover, immigrant workers are likely to be employed in high-risk, low-paying jobs.⁴ Occupational health disparities, particu-

larly in terms of hazards exposure and access to health insurance and care, are pressing problems in the United States, and most commonly experienced by individuals in ethnic minority and immigrant populations.⁵⁻⁸ OHS disparities is a NIOSH Core and Specialty Program in need of innovative strategies to eliminate critical injustice issues,⁸ and is directly relevant to the *Total Worker Health*® national research agenda for advancing the health, safety, and wellbeing of workers.⁹

Community is a social system consisting of populations, social institutions, interactions, and shared norms and values.¹⁰ Some OHS professionals and researchers have sought community-based collaborative approaches to address OHS disparities experienced by ethnic minority and immigrant workers. For example, researchers have

This study was performed at the University of Washington, Seattle, Washington.

partnered with labor unions, community-based organizations (CBOs), churches, Spanish radio stations, community and migrant health centers, and local public health departments.^{11–14} Despite the promise of these academic-community collaborative efforts, the approaches used often focus on a single community partner (eg, union, CBO). However, these agencies by themselves are unlikely to be adequately equipped to address the variety of interventions needed to promote immigrant worker health and wellbeing. Major organizations, including the World Health Organization,¹⁵ U.S. Office of the Surgeon General,¹⁶ and Robert Wood Johnson Foundation¹⁷ call for *multiple* sector approaches (eg, collaboration among diverse community organization, faith-based, and healthcare sectors) to promote a culture of health within communities and thereby the general wellbeing of all populations. The OHS literature provides little evidence for the strategic identification of viable organizations and agencies with which to partner and to develop, implement, and sustain community-based interventions.

Accordingly, this paper describes a sector study on community organizational capacity for the promotion of Chinese immigrant worker health (physical, mental, and spiritual health). Internal organizational factors are fundamental to the implementation and sustainability of programs as well as change in services and program innovation.¹⁸ The concept of organizational capacity describes agency attributes that enable an organization to manage and attain its goals and mission and to increase the likelihood of engaging and sustaining partnerships with other agencies.^{19,20} The findings of the research reported in this paper underscore important practical as well as research implications for the reduction of OHS disparities, and the promotion of immigrant worker health and wellbeing through collaboration with diverse organizations and agencies, which may or may not offer programs and services designed to promote OHS or worker health and wellbeing.

1.1 | Organizational capacity for immigrant worker health and wellbeing

Organizational capacity is discussed primarily in the social sciences literatures, in areas such as nonprofit organizations, coalitions, public administration, and operations research.^{19,21,22} Organizational capacity has received some attention in the public health literature, particularly related to capacity building and health promotion and disease prevention.^{20,23–25} In our review of the literature, however, no publications were found that focused on the organizational capacity of community agencies related to worker health and OHS within diverse community sectors.

Organizational capacity has no single or unified definition across these fields of study. Generally, however, organizational capacity is considered to be multidimensional.^{19,20,22,24–26} Particularly important are dimensions of (i) *commitment to focal issues* reflected through agency leadership, organization mission, and/or target collaboration with other agencies; (ii) *availability of human and fiscal resources* such as staffing, personnel skills and knowledge, facilities and funding; and (iii) the presence of *flexible processes and structures* within the organization that allow policy adjustment and adaption to change, allowing the

organization to remain relevant. For instance, a study with emergency food agencies¹⁹ suggested that the presence of paid staffers and their ability to obtain resources for structural needs (eg, obtaining and using computers to systematize records keeping) contribute significantly to organizational goal attainment effectiveness. Other studies report that the existence of organizational commitment to focal issues and a leadership structure that is open to change is crucial to agency engagement in new health promotion initiatives as well as interagency partnerships.²³ Fredericksen and London²² argued that the elements of organizational capacity do not work in isolation of one another, but work in harmony to create an overarching capacity that supports organization operation. Germann and Wilson,²⁰ in a study with front-line staff and organization leaders of Canadian health organizations, supported this argument, demonstrating the inter-relatedness of various elements of organizational capacity. Specifically, organizational commitment to focal issues was found to be a key organization element. It shaped the organization's mission, supportive structures and processes, and allocation of human, material, and non-material resources. Commitment, manifested at the work unit level, created an environment to support front-line staff practice. Their findings also revealed that values and beliefs, leadership, and a shared understanding about focal issues throughout the organization resulted in organizational commitment to the focal issues.

Cultural and linguistic resources and worker health-related resources are aspects of organizational capacity with specific relevance for immigrant worker health, but are not identified in the literature. For instance, information about OHS regulations, rules, and research-based practices for prevention and worker health is generally available on governmental websites. Most information, however, is presented only in English creating an access barrier for immigrant workers who are less proficient in English and/or in technological skills. The cultural and linguistic capacity of agencies is thus critical to ongoing efforts to address OHS disparities and to promote immigrant worker health and wellbeing.

2 | MATERIALS AND METHODS

2.1 | Study design

Using a cross-sectional descriptive design, the central study aim was to characterize the organizational capacity of community Chinese population and pan-ethnic focused agencies/organizations. Chinese population focused agencies were defined as those managed by Chinese and primarily serving U.S. and foreign-born Chinese Americans. Pan-ethnic or non-Chinese focused agencies were agencies that served Chinese clientele *as well as* other ethnic populations. Because there were a large number of Pan-ethnic agencies in the community, we used organizational mission and scope of service relevant to worker health and advocacy (eg, job training, advocacy for preventing workplace discrimination, occupational health training) as criteria to define the sampling pool for the non-Chinese agencies. The research was reviewed and approved as minimal risk by the affiliated university's Internal Review Board.

2.2 | Sample

Agencies, not individuals, were the unit of sampling. A total of 42 agencies in King County, Washington were recruited between September 2012 and June 2013. First, using comparisons across multiple community directories, 40 agencies were identified representing six community sectors: five Chinese service agencies, nine Chinese faith-based organizations (FBOs) (25% randomly selected to represent known FBOs), six Pan-Asian service agencies, three labor unions, 12 Pan-ethnic nonprofits (ie, agencies serving the general population, providing legal and advocacy services, social services, job training and education), and five public service, government agencies. Second, sample roster expansion, based on interviewee nominations solicited after each interview, led to the inclusion of two additional FBOs to the sample roster.^{27,28} A total of 36 agencies formed the final sample.

2.3 | Research procedures

The director of each agency was contacted via an invitation letter with telephone and email follow-up contacts. After obtaining a signed agreement from the agency director (or designated authority), we worked with the director to identify administrators and service staff to represent the agency in the joint interview. Criteria used to identify potential interviewees included: (i) proficient in English or Chinese; (ii) employed in the agency position for at least 12 months to ensure organization familiarity; and (iii) knowledgeable about the range of agency activities. When more than one administrator or service staff was recommended, interviewee selection was determined by randomizing the contact order. Agency directors were informed during the consenting process that, to ensure human subjects protection and data validity, we would not reveal the decisions made by prospective interviewees regarding their interest and willingness to participate. Verbal consent was obtained from prospective interviewees after providing written and verbal information about the study purposes, procedures, risks, benefits, and confidentiality.

For data collection, we administrated the study questionnaire using a joint interview format with one administrator and one service staff member in each agency. The questionnaire was usually administered in English by trained bilingual interviewers; one Chinese service agency and six FBO interviews, however, were completed in Chinese. All were completed in a private room at the agency during work hours as part of the agency agreement.

2.4 | Measurement

The questionnaire included both closed- and open-ended questions designed to capture agency/organization basic information (eg, mission, populations served, funding sources, number of paid staff), service activities, and planning and approval processes. Three dimensions of organizational capacity, the central concept, were measured: organizational commitment to Chinese immigrant worker health, organizational resources for Chinese immigrant worker health, and organizational flexibility.^{19,20} The dimensions and their indicators

are summarized in Table 1. We created composite indexes to represent the three dimensions by summing z scores for the respective indicators for each dimension described in Table 1.

Organizational commitment to Chinese immigrant worker health was defined as the degree to which an agency engaged in, or initiated programs or services to promote the equality of health of Chinese immigrants,^{18,20,23} and indexed using four indicators. *Number of current services* was measured by summing positive responses (1 = yes, 0 = no) to 24 types of services pertinent to immigrant health and safety, employment needs, advocacy for mistreatment and insurance needs, skills development, and support for social and spiritual needs. *Number of new services targeting Chinese immigrant worker health* was the sum of positive responses (1 = yes, 0 = no) to nine types of projects or services initiated by the agency during the past year to improve physical, mental, and spiritual health of Chinese immigrants. *Participation in projects conducted by other community agencies for Chinese immigrants* in the past year was captured with an open-ended question that inquired about agency participation in health-related or health-focused projects for Chinese immigrants initiated by other agencies. Participation was quantified as the number of other agencies identified times the number of other agency projects in which the agency was engaged. *Involvement in prevention related to Chinese immigrant worker health* in the past year was measured by summing six items that represented the levels of prevention based on the Spectrum of Prevention.²⁹ The response format was a 3-point scale (0 = not at all involved to 2 = very involved).

Organizational resources for Chinese immigrant worker health referred to agency human, material, and non-material goods used to provide services to Chinese immigrants.^{18,20} This dimension was indexed by four single-item indicators: Presence of an *OHS training requirement* for staff dedicated to work with immigrants (1 = yes, 0 = no), and assessment of *overall workload and staffing level* based on 3-point scales (0 = not manageable to 2 = manageable, 0 = understaffed to 2 = fully staffed, respectively). *Availability of Chinese-language written materials* (including media) was classified from responses to an open-ended question regarding languages in which materials were provided by the agency (0 = no materials in Chinese/Mandarin, 1 = materials in Chinese, 2 = materials in Chinese and other Chinese dialects).

Organizational flexibility was defined as the degree of flexibility in an agency's programmatic planning and approval processes to support a collaborative approach to improve Chinese immigrant worker health derived from the work of Germann and Wilson,²⁰ and measured with three indicators. *Openness to new services for Chinese immigrant worker health* was measured with ratings about agency openness to provide new services or modify existing services for Chinese immigrant health (0 = not very open to 2 = very open). *Flexibility in planning and approval processes* based on interviewee rating of a question about agency potential openness to new services for Chinese immigrant worker health based on 3-point response options (0 = not very flexible to 2 = very flexible). In addition, we categorized interviewee responses to questions about agency programmatic planning and approval processes. The rating criteria included whether or not a formal

TABLE 1 Summary of indicators and measures of three dimensions of organization capacity

<i>Dimension: Indicator description & examples</i>	<i>Measurement</i>
Commitment to Chinese immigrant worker health: The degree to which an agency engaged in, or initiated programs or services to promote the equality of health of Chinese immigrants^{18,20,23}	
<i>Current services provided. Examples: employment-related information/assistance, general OHS training, skills training, health/social benefit information/assistance, spiritual support</i>	24 items (1 = Yes, 0 = No); score range = 0-24
<i>New services for Chinese immigrant worker health in the past year. Examples: health fair, workshops re: worker compensation/labor regulations, English classes, political action</i>	9 items (1 = Yes, 0 = No); score range = 0-9
<i>Participation in projects conducted by other community agencies for Chinese immigrants in the past year. Examples: tobacco session, healthy eating classes, health fair, worker health campaign</i>	Number of agencies multiplied by number of activities identified based on an open-ended question
<i>Involvement in prevention related to Chinese immigrant worker health in the past year. Examples: offer classes re: work-related injury claims, immigrant specific service regulations; promote education re: immigrant worker health; convene coalitions for policy/legislation advocacy work</i>	6 items, 3-point scale (0 = not involved at all to 2 = very involved); score range = 0-12
Organizational resources for Chinese immigrant worker health: Agency human, material and non-material goods used to provide services to Chinese immigrants^{18,20}	
<i>OHS training requirement for staff</i>	Code open-ended question, dichotomous (1 = Yes, 0 = No)
<i>Overall workload in agency</i>	1 item, 3-point scale (0 = not manageable to 2 = manageable)
<i>Overall staffing level</i>	1 item, 3-point scale (0 = understaffed to 2 = fully staffed)
<i>Availability of Chinese language materials/media</i>	Code 1 open-ended question using a 3-point scale (0 = no materials in Chinese/Mandarin, 1 = materials in Chinese, 2 = materials in Chinese and other Chinese dialects)
Organizational flexibility: The degree of flexibility in an agency's programmatic planning and approval processes to support a collaborative approach to improve Chinese immigrant worker health²⁰	
<i>Openness to new services for Chinese immigrant worker health</i>	1 item, 3-point scale (0 = not very open to 2 = very open)
<i>Flexibility in planning and approval processes for Chinese immigrant worker health</i>	1 item, 3-point scale (0 = not very flexible to 2 = very flexible); Code 1 open-ended question using a 3-point scale (0 = formal organizational structure for decision making and administrative approvals of most decisions required; 1 = formal organizational structure and administrative approvals only for major decisions such as overall agency direction; 2 = local units have decision-making power, with or without a formal organizational structure)

organizational structure existed for decision making, and to what degree decisions required higher administrative approval versus the existence of local unit decisional autonomy (0 = formal organizational structure for decision making and administrative approvals of most decisions required; 1 = formal organizational structure and administrative approvals only for major decisions such as overall agency direction; 2 = local units have decision-making power, with or without a formal organizational structure).

2.5 | Analyses

The proportion of missing data was below 3% for most items,³⁰ except for data about the number of volunteer staff and average number of people using the agency services each month, which was not provided by five agencies (14%). Distributional patterns of the study variables within and across sectors were used to summarize agency assessments regarding the three dimensions of organizational capacity. The analyses were supplemented with interpretation of graphic data displays.

3 | RESULTS

3.1 | Sample characteristics

One agency declined participation in each of the six community sectors, leaving a final sample of 36 agencies, including four Chinese service agencies, ten Chinese FBOs (five temples, five churches), five Pan-Asian service agencies, two labor unions, 11 Pan-ethnic non-profits, and four public government agencies. Five of the agencies reported no U.S. or foreign-born Chinese using their services.

Agency information by community sector is detailed in Table 2. Thirty (82%) of the 36 agencies reported paid staff positions; 26 (72%) agencies also had unpaid volunteers to support their operations. Twenty-four (66%) of the agencies reported having, during the past 12 months, staff positions dedicated to work with Chinese or other immigrant clients. All agencies received funding from multiple sources. The top three funding sources were individual and community donations ($n = 30$, 83%), fundraising ($n = 22$, 61%),

TABLE 2 Organization characteristics by community sectors^a (N = 36)

Variables	Community sectors					
	SER-C (n = 4)	FBO (n = 10)	PAN (n = 5)	UNI (n = 2)	PUB (n = 4)	NON (n = 11)
Populations using services						
Chinese immigrants in US <1 yr	4	8	4	1	4	7
Chinese immigrants in US 1-5 yrs	4	9	4	2	4	6
Chinese immigrants in US >5 yrs	4	9	4	2	4	7
US-born Chinese	4	8	2	1	4	7
Size of paid staff (range)	0-200	0-14	6-250	20, 40	2-1500	1-250
Size of unpaid volunteers (range)	13-60	4-500	0-800	0, 6	0-200	0-2125
Funding sources						
City	4	0	4	0	1	6
County	3	0	3	0	1	6
State	3	0	2	0	3	9
Federal government	2	0	3	0	3	9
Fundraising	3	2	4	1	1	11
Individual/community donations	3	10	5	0	1	11
United Way	2	0	4	0	1	5
Private foundations	2	0	5	0	1	11
Grants/subcontracts	3	0	5	0	2	10
Dues	1	2	1	2	0	1
Fees	3	2	2	1	2	6

^aSER-C, Chinese service sector; FBO, Chinese faith-based sector (churches and temples); PAN, Pan-Asian service sector; UNI, Labor union sector; PUB, Public government sector; NON, Pan-ethnic nonprofit sector. Sample sizes noted in parentheses represent the number of agencies within each sector.

and grants or subcontracts through partnerships with other organizations ($n = 20$, 56%).

3.2 | Organizational capacity

3.2.1 | Organizational commitment to Chinese immigrant worker health

Thirty-five (97%) agencies offered from 1 to 23 types of services ($M = 9.5$, $SD = 6.1$) pertinent to Chinese (as well as other groups), including immigrant health and safety, employment needs, advocacy for mistreatment and insurance needs, skills development, and support for social and spiritual needs. During the past 12 months, the majority ($n = 21$, 58%) of the agencies had not initiated new projects or services that specifically targeted improving the health of Chinese immigrants, and most agencies ($n = 30$, 83%) had not participated in projects initiated for Chinese immigrants by other agencies. Respondent ratings of involvement in prevention work related to Chinese immigrant worker health ranged from 0 ($n = 10$) to 12 ($n = 2$), with a mean of 2.9 ($SD = 3.4$) indicating generally low involvement in worker health prevention work across agencies.

Four indicators (calculated as z scores) of organizational commitment to Chinese immigrant worker health were combined to create a commitment composite index, which ranged from -3.15 to 8.0

($SD = 2.81$, median z score = -0.76) for the total sample ($N = 36$). Figure 1 illustrates organizational commitment by sector, demonstrating the dispersion of agency scores within each sector. The Chinese service (SER-C) and Pan-Asian service (PAN) sectors had the highest organizational commitment to Chinese immigrant worker health (mean z score = 3.07 and 2.19, respectively) as well as the broadest variability ($SD = 3.93$ and 4.10, respectively). Index variability for the other four sectors was lower ($SD = 1.33$ -1.51), with the Chinese faith-based (FBO) and Pan-ethnic nonprofit (NON) sectors clustered toward the lower end of organizational commitment.

3.2.2 | Organizational resources for Chinese immigrant worker health

Of the 24 agencies dedicated to working with immigrants, only two required OHS training for staff members in these roles. Over half of the agencies ($n = 20$, 55.6%) reported being understaffed, with 33 (91.7%) nonetheless reporting the workload as somewhat manageable ($n = 18$) or manageable ($n = 15$). Reflecting the general availability of agency linguistically tailored resources, 28 (77.8%) agencies provided a variety of health related or resources focused written materials in Chinese, and among these, four agencies had materials in more than one Chinese language.

Four indicators of organizational resources for Chinese immigrant worker health were combined to create a composite resources index,

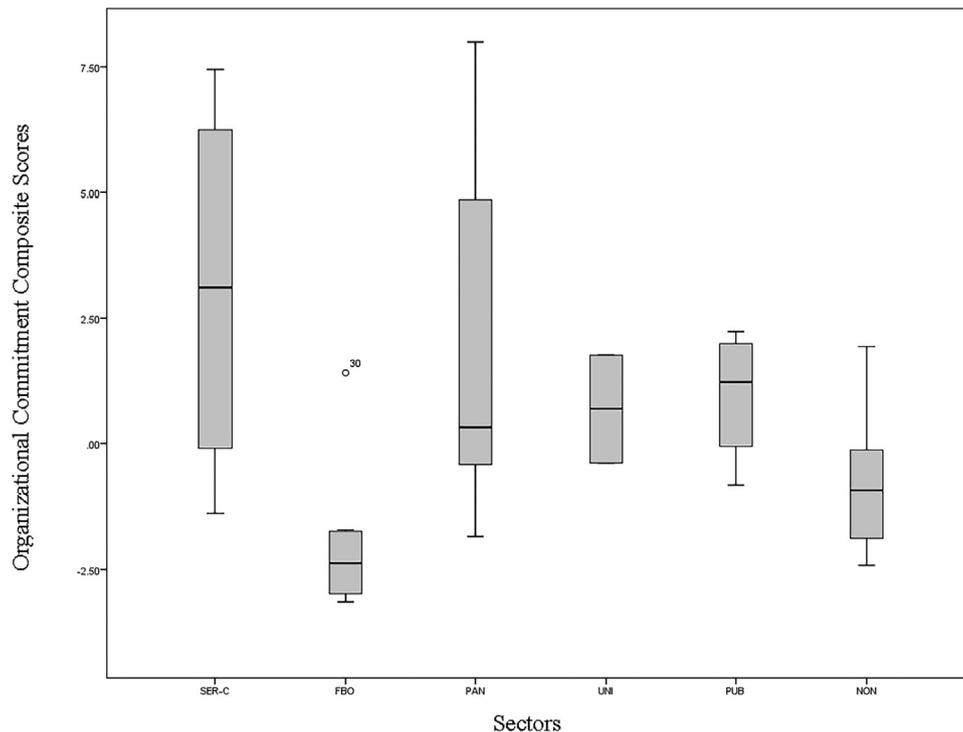


FIGURE 1 Total organizational commitment composite scores by community sector. The composite score is the sum of z scores calculated for each of the four indicators of organizational commitment to Chinese immigrant worker health. The line inside the bar represents the 50th percentile or median score for the sector. The small circle indicates a minor outlier. Abbreviations: SER-C, Chinese service sector; FBO, Chinese faith-based sector, including churches and temples; PAN, Pan-Asian service sector; UNI, Labor union sector; PUB, Public government sector; NON, Pan-ethnic nonprofit sector

which ranged from -3.19 to 4.83 ($SD = 2.04$, median z score = 0.10) for the total sample. Figure 2 illustrates organizational resources by sector with agency distributions within each sector. Similar to the findings for organizational commitment, the Chinese service (SER-C) and Pan-Asian service (PAN) sectors had the highest organizational resource scores (mean z score = 0.51 and 0.90 , respectively). Likewise, the Pan-Asian and Chinese service sectors had the broadest variability ($SD = 3.61$ and 2.61 , respectively), followed by the Pan-ethnic nonprofit sector ($SD = 1.94$).

3.2.3 | Organizational flexibility

With respect to providing new services or modifying existing services for the health of Chinese immigrants, most agencies (75%) were characterized as open to change, indicated by ratings that the agency was either somewhat ($n = 11$) or very open ($n = 16$). In terms of flexibility in planning and approval processes, only five agencies were rated as not very flexible. Other agencies were rated as either somewhat flexible ($n = 14$) and very flexible ($n = 17$). Analysis of interviewee responses to a related open-ended question revealed that 21 (58.3%) agencies lacked flexibility due to formal organizational structures likely to circumscribe the decision making process, with nearly every decision requiring higher administrative approval. The remaining 15 agencies were assessed as somewhat flexible.

Three indicators of organizational flexibility were combined to create a composite flexibility index, which ranged from -4.15 to 3.08

($SD = 1.93$, median z score = 0.86) for the total sample. Figure 3 illustrates organizational flexibility for each sector with the distribution of agencies within each sector. The Chinese service sector (SER-C) was highest in organizational flexibility (mean z score = 1.92) followed by the union sector (mean z score = 1.07). The union (UNI) and Chinese faith-based (FBO) sectors showed the largest variability ($SD = 2.83$ and 2.10 , respectively). Interestingly, but not readily apparent in the bar chart, the Chinese FBO sector revealed two distinct agency clusters, one high and one low in flexibility. In contrast, the Chinese service (SER-C) sector had the narrowest variability ($SD = 0.84$) clustering toward high flexibility, suggesting the existing adaptability of this sector to programmatic changes for Chinese immigrant worker health.

4 | DISCUSSION

This study establishes a profile of organizational capacity for the purpose of supporting Chinese immigrant worker health across six community sectors in King County, Washington. The findings reveal organizational commitment to and resources for Chinese immigrant worker health, and organizational flexibility to support a collaborative approach to improve Chinese immigrant worker health within the surveyed community sectors. Agency organizational capacity differed across and within sectors. The Chinese and Pan-Asian service sectors showed, on average, higher organizational capacity than did the

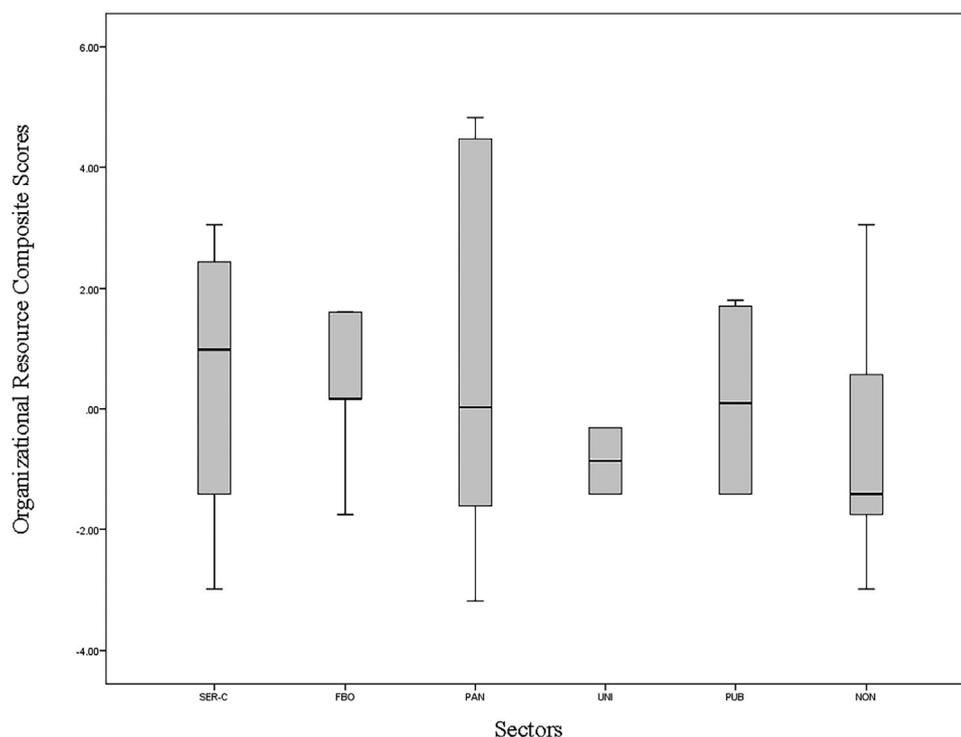


FIGURE 2 Total organizational resource composite scores by community sector. The composite score is the sum of z scores calculated for the four indicators of organizational resources for Chinese immigrant worker health. The line inside the bar represents the 50th percentile or median score for the sector. Abbreviations: SER-C, Chinese service sector; FBO, Chinese faith-based sector, including churches and temples; PAN, Pan-Asian service sector; UNI, Labor union sector; PUB, Public government sector; NON, Pan-ethnic nonprofit sector

Chinese faith-based, labor union, Pan-ethnic nonprofit, and public government sectors. Importantly, the study offers a prototype for the evaluation of organizational capacity for worker health and OHS promotion, particularly for community organizations that are outside the formally mandated public OHS system.

4.1 | Capacity of the co-ethnic agencies and sectors

Co-ethnic organizations are those established and managed by individuals of the same ethnic or national background (eg, Chinese service agencies, Chinese FBOs). The immigration resettlement and adjustment process within a host country is multifaceted, encompassing adjustment to culture, language, employment, social networks, physical environment, healthcare, and discrimination.^{31–34} To promote community collaboration, co-ethnic agencies are considered logical venues for community-based health promotion,^{35,36} and have been engaged in community-based participatory OHS research.^{14,37} The findings from this study address notable gaps in the literature by detailing characteristics of organizational capacity in co-ethnic community sectors essential to promote academic-community partnerships as well as multi-sector approaches to immigrant worker health and wellbeing.

In this study, the Chinese service sector varied considerably in organizational commitment to and resources for Chinese immigrant worker health with a few agencies showing relatively high levels in both dimensions. Given the background and mission of these agencies, high organizational commitment to and resources for general social

and welfare needs of Chinese immigrants would be expected. Our findings also showed this sector's commitment to and resources for immigrant worker health. The findings suggest that OHS researchers could integrate immigrant worker health information and education within co-ethnic agencies. Such additions—not part of agency routines but relevant to the clientele—might include client-oriented strategies to reduce or prevent work-related musculoskeletal problems, education about and advocacy for family leave, and/or city paid sick leave ordinances. Another noteworthy sector finding was the consistently high flexibility in programmatic planning and approval processes across all four Chinese service agencies, pinpointing a critical element needed for inter-agency collaboration and partnership development.^{20,38} This finding of high organizational flexibility suggests a higher likelihood of successfully engaging the Chinese service sector, compared to other low-flexibility sectors. Combination of the three dimensions of organizational capacity revealed that the co-ethnic service sector is poised to be a community collaborator despite the fact that co-ethnic service agencies do not usually focus on OHS service.

The Chinese faith-based sector revealed both strengths and challenges for collaboration for worker health interventions. Co-ethnic FBOs or immigrant religious institutions are known to provide both formal and informal services to assist immigrants in the host country.^{39,40} In line with other research, we observed strengths in this sector, particularly in organizational resources (eg, bilingual and bicultural human, material, and non-material goods) to serve Chinese immigrants. Organizational commitment to Chinese immigrant worker health and organizational flexibility to such collaboration were

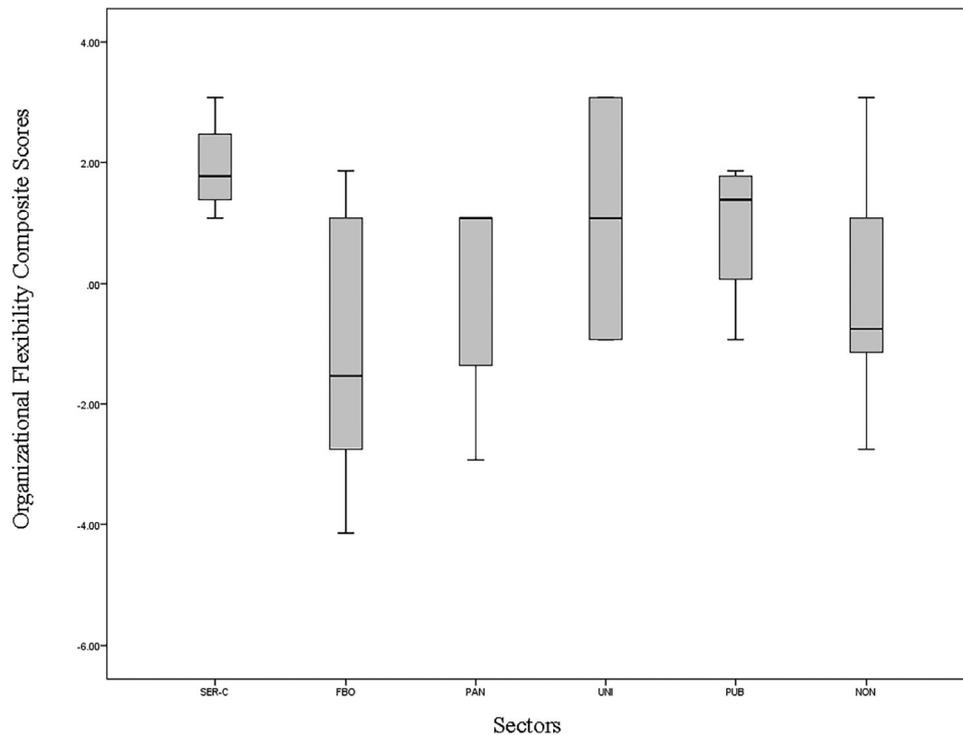


FIGURE 3 Total organizational flexibility composite scores by community sector. The composite score is the sum of z scores for three indicators of organizational flexibility. The line inside the bar represents the 50th percentile or median score for the sector. Abbreviations: SER-C, Chinese service sector; FBO, Chinese faith-based sector, including churches and temples; PAN, Pan-Asian service sector; UNI, Labor union sector; PUB, Public government sector; NON, Pan-ethnic nonprofit sector

relatively low. Such findings most likely reflect the lack of organizational structure in these Chinese FBOs to formally provide a broader range of health-related programs or services beyond the central mission of spiritual support. Relative to such challenges, Chin et al,⁴¹ in research with Chinese and South Asian immigrant religious institutions, found that community need, organizational purpose, external acceptability, and internal acceptability captured FBO organizational readiness to engage in human immunodeficiency syndrome (HIV) prevention. Similarly, our findings with respect to Chinese immigrant worker health promotion is likely to have been influenced primarily by participating FBO organizational missions, thereby limiting the investment in other services designed specifically to promote immigrant member employment-related health and safety to advance overall wellbeing.

4.2 | Capacity of other private and public agencies and sectors

The Pan-Asian service, labor union, Pan-ethnic nonprofit, and public government sectors showed different patterns of organizational capacity. None had high capacity in all three dimensions, most likely because these sectors provide services to a broad range of ethnic populations. Broad organizational focus undoubtedly influences agency decision making about what to offer, which other agencies to involve, and what resources are needed to maximize their community reach.

Among the four sectors, the Pan-Asian service sector had the strongest capacity in terms of organizational commitment and

resources. The second largest ethnic population in King County, Washington is Asian, with an estimated 306 079 individuals or 15.2% of the county population. Of these, 77 480 (25.3%) are Chinese, representing the largest Asian group, followed by Asian Indian ($n = 54\ 137$), Filipino ($n = 45\ 254$), Vietnamese ($n = 38\ 783$), Korean ($n = 28\ 852$), Japanese ($n = 21\ 077$), and other Asians.⁴² Considering the size and diversity of the local Asian population, the Pan-Asian service sector is an important community structure for the health promotion for Chinese and other Asian immigrants. One would expect this sector to have high organizational capacity for the general social and welfare needs of Chinese immigrants. When queried specifically about worker health, the findings were similar to those for commitment in the Pan-Asian service sector, revealing institutional values and means to support community-based interventions for immigrant worker health. However, unexpected low organizational flexibility to support collaboration to improve Chinese immigrant worker health pointed to potential challenges in working with this sector.

In contrast, the labor union sector—a critical community structure for worker health and safety⁴³—demonstrated promising organizational flexibility, yet relatively lower organizational commitment to and resources for Chinese immigrant worker health. The unions recruited for this study represented employment fields in which immigrant workers are often hired, especially workers with limited English proficiencies. The high flexibility for change and in agency planning and approving processes in this sector may reflect the fact that unions are membership-based organizations and the types of changes queried in the interview closely fit to the organizational mission. Historically,

unions have been a common partner for OHS research and have served as venues for accessing workers in selected industries.^{44,45} While the two unions in this study had relatively high scores on current services pertinent to Chinese and other immigrants, they had low scores on the other three indicators of organizational commitment to Chinese immigrant worker health. The union sector findings point to challenges in partnering with unions for community-based interventions that are intended for specific immigrant worker populations.

4.3 | Implications for immigrant worker health and wellbeing

Given changing demographics of the U.S. workforce, changing trends in U.S. industries and occupations,⁶ and the decline of unions,⁴⁶ efforts to prevent work-related illnesses and injuries and address occupational health disparities need alternative approaches to the traditional workplace OHS approach and mandated government undertakings. Co-ethnic agencies or groups, immigrant institutions, and community-based pan-ethnic nonprofit agencies are accessible and durable community assets that need to be enlisted in the promotion of worker health and wellbeing.

Methodologically, this study offers a systematic approach to understand community sectors and identify collaborators in order to deliver and sustain community-based, immigrant worker health interventions. Although the sectors in this study have relevant services/programs and organizational missions, the sectors varied broadly in their capacity strengths needed for collaboration. For instance, comparing the Chinese service sector to the Pan-ethnic nonprofit sector, we found similar functions in the provision of social and welfare services, but different levels of organizational commitment, resources, and flexibility. Even within sectors, agencies varied considerably along the three capacity dimensions. Only a small number of Chinese service agencies scored high for all three dimensions.

These findings suggest several logical approaches to building academic-community partnerships or public-private sector partnerships (eg, Department of Labor and Industry, a city office of labor standards and co-ethnic CBOs) to promote immigrant worker health and wellbeing. One approach would be to partner specifically with agencies in the Chinese service sector (co-ethnic service sector). This sector has high flexibility that would increase agency acceptability of innovative approaches to improve the health and wellbeing of Chinese immigrant workers, proven commitment to the target population, and resources for intervention implementation. Another strategy would be to foster the development of joint OHS prevention programs between agencies in the Chinese service sector and agencies in the Pan-ethnic nonprofit sector that have high commitment and high organizational flexibility, leveraging commitment and flexibility of these two sectors, and maximizing access to resources from the Chinese service sector.

This study detailed descriptions of organizational capacity across community sectors for the purpose of advancing community support for immigrant worker health. Because of variation in resettlement histories, immigrant populations establish different forms of ethnic

communities across locations; thus, community sectors and resources are likely to vary considerably.⁴⁷ The same methods and measures used in this study, nonetheless, are applicable to other immigrant worker populations and geographic locations. Building knowledge about organizational sectors will contribute new perspectives on OHS research and practice, and enhance understanding community capacity relevant to a variety of immigrant worker populations in different contexts. Similar to most organizational capacity research, this study was descriptive in nature. Engaging new and sophisticated quantitative methodologies, such as network analyses, and triangulating findings in future studies should increase understanding of the relative effects that the dimensions of organizational capacity have on the likelihood of engaging partnerships with other agencies. Such knowledge will help guide OHS researchers and professionals in engaging collaborators and designing community-based interventions for immigrant worker health and wellbeing.

Co-ethnic FBOs have been identified as a venue for community-based health promotion in the United States,⁴⁸ most often with African American churches.^{49,50} However, a major gap exists in our knowledge about working with co-ethnic FBOs for community-based worker health interventions. To capitalize on resources that the co-ethnic FBO sector could offer, systematic assessment of organizational capacity within and across co-ethnic FBO sectors is likely to reveal potential partners. Research is needed to understand how to effectively tailor communications and engage this significant community resource.

4.4 | Limitations and strengths

Questionnaire report from agency staff was the primary method of data collection, posing some limitations to the findings. To minimize potential biases embedded in responses,⁵¹ we conducted joint interviews with two knowledgeable informants from each agency.^{52,53} Moreover, the majority of the interview questions were factual based (eg, OHS training requirement, type of services provided), designed to elicit straightforward and verifiable responses. In addition, when interviewees were uncertain about their responses, they were encouraged to, and did consult with other knowledgeable agency co-workers. To strengthen data reliability, objective ratings completed by the research team were incorporated for some measures. The limited number of participating unions circumscribes the generalizability of the findings to the broader labor union sector. Additional research with larger, representative samples is necessary to shed light on partnership potential. The dimensions included in this study were three common and empirically examined dimensions of organizational capacity. Other dimensions have been identified and may be relevant, but were not captured in this study.

A notable strength of this study is the breadth of the six community sectors included in the investigation. In addition, the participation rate (86%) was high across diverse community agencies; only six agencies declined to participate. Likewise, missing data were rare. The findings generated a comprehensive and practical foundation for strategic identification and selection of community collaborators for Chinese

immigrant workers in King County, Washington. The dimensions assessed and the community-based, multi-sector methods used provide a conceptual focus and approach for community-based researchers in expanding immigrant worker health intervention research.

AUTHORS' CONTRIBUTIONS

The first author led the research conceptualization and development of the study design; was responsible for the acquisition, analysis and interpretation of data; drafted the report; and provided final approval of the paper. The second author was involved in conceptualization of the study, analysis and interpretation of data, and critical revisions and approval of the paper. Both authors agree to be accountable for all aspects of the work to ensure that questions related to the accuracy or integrity of any part of the work will be appropriately investigated and resolved.

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ETHICS APPROVAL AND INFORMED CONSENT

The affiliated university's Internal Review Board reviewed and approved this research as minimal risk and approved waiver of the written informed consent. An Information Statement was provided to each participant that described the study purpose, types of questions and the data collection process, as well as participant rights and investigator responsibilities. Oral consent was obtained prior to initiation of the interview.

DISCLOSURE (AUTHORS)

The authors declare no conflicts of interest.

DISCLOSURE BY AJIM EDITOR OF RECORD

Steven Markowitz declares that he has no conflict of interest in the review and publication decision regarding this article.

DISCLAIMER

The content of this paper is solely the responsibility of the authors and does not necessarily represent the official views of NIOSH.

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