Ethnicity & Health

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ceth20

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To cite this article: Marie-Anne S. Rosemberg, Doris M. Boutain & Jenny Hsin-Chun Tsai (2021) Occupational health research beyond the work setting: inclusive inquiry with ethnic minority and immigrant workers, Ethnicity & Health, 26:8, 1242-1260, DOI: 10.1080/13557858.2019.1612517

To link to this article: https://doi.org/10.1080/13557858.2019.1612517

ETHNICITY & HEALTH
2021, VOL. 26, NO. 8, 1242–1260
https://doi.org/10.1080/13557858.2019.1612517

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Occupational health research beyond the work setting: inclusive inquiry with ethnic minority and immigrant workers

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ABSTRACT

Ethnic minority and immigrant workers comprise a sizable proportion of the low-wage workforce. They are surprisingly understudied despite their workplace prominence. Factors such as workplace policies, structures, worker-related characteristics, and research designs preclude their comprehensive research participation when studies are conducted in work settings. Consequently, ethnic minority and immigrant workers continue to be under-represented in inquiry and simultaneously over-represented with compromising occupational health risks. The purpose of this paper is to provide strategies to promote the inclusion of ethnic minority and immigrant workers in occupational health research. Using three different research-based examples, we illustrate the benefit of conducting occupational health research in non-workplace settings as a way to ensure research representation of ethnic minority and immigrant workers.

ARTICLE HISTORY
Received 25 July 2018
Accepted 27 March 2019

KEYWORDS
Ethnic minority workers; immigrant workers; low-wage workers; occupational health research; methodological approaches; research participation

Introduction

One in three workers in the United States (US) is employed in a low-wage job (Bureau of Labor Statistics 2015a). According to the 2016 US Bureau of Labor Statistics, ethnic minority and immigrant workers comprise nearly 40% of the low-wage workforce (Bureau of Labor Statistics 2017b). Ethnic minorities in particular include the US populations of African-Americans, Native Americans/Alaska Natives, Asians, Hispanic or Latinos (Bureau of Labor Statistics 2017b), while immigrants are persons living in the US who were born in other countries.

Work condition is a social determinant contributing to health disparities observed in both ethnic minority and immigrant workers (Leigh and De Vogli 2016; Ahonen et al. 2018). However, work condition and its health effects on ethnic minorities and immigrants are investigated with rarity and accompanied with little understanding of the methodological approaches that are ideal for these specific populations (Flynn and Eggerth 2014; Leong et al. 2017; Schenker 2010; Souza, Steege, and Baron 2010). A main issue is that research is not designed to support high level participation of ethnic minority and immigrant workers.

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Methodological approaches such as Community-Based Participatory Research (CBPR) are forefronted in inquiry for engaging vulnerable or historically marginalized populations in research (Wallerstein and Duran 2006; Minkler and Wallerstein 2011; Israel et al. 2008). Some occupational health (OH) researchers have adopted CBPR approaches to focus on ethnic minority and immigrant workers employed in low-wage and/or high risk occupations to better study occupational health disparities (e.g. Minkler et al. 2010). Workplace policies and organizational structures that allow workers time and resources to learn about how to participate in research would foster research inclusion. Employers could, for example, develop collaborative research hubs to promote organizational improvement and worker health initiatives.

Effective and explicit methodological approaches are needed to not only engage ethnic minority and immigrant workers in health research but also in OH intervention design and programming (Eggerth and Flynn 2010; O'Connor et al. 2014; Quandt and Arcury 2017; Stuesse 2016). Otherwise, there will remain a perpetual dearth of effective interventions to promote and maintain ethnic minority and immigrant workers' health leading to an unhealthy workforce (Eggerth and Flynn 2010; Stuesse 2016). One approach that has promise is to conduct OH research outside of the workplace.

Drawing from three separate programs of research, the purpose of this article is to provide insights gained from our individual research with three worker populations (hotel workers, volunteer-unpaid church workers, and food service workers) and propose strategies to ensure inclusion of ethnic minority and immigrant workers in OH research. How paid and unpaid work is organized for ethnic minority and immigrants workers is described in the first section. The second section focuses on methodological issues to consider when designing worksite OH research focused on ethnic minority or immigrant workers. In the third section, we provide three examples based on each author's program of research to showcase tangible research inclusion approaches for engaging ethnic minority and immigrant workers outside of the workplace setting. A focus on next directions to advance OH research with ethnic minority and immigrant workers concludes the article.

Ethnic minorities and immigrants in paid and unpaid work

Standard and non-standard work

There are many types of standard, or paid, work for ethnic minorities and immigrants in the US as well as levels of economic advancement within those work options. It is commonly observed, however, that recent immigrants are often incorporated into the US economy in particular industry jobs, usually within similar ethnic or co-ethnic economies (Adelman, Tsao, and Tolnay 2006). This results in ethnic niche employment or the predominance of an ethnic group in an occupation or paid role or work type (Hamilton, Easley, and Dixon 2018). Examples include restaurant, dry-cleaning, landscaping or other small businesses. On average about 20% of the US ethnic minority populations (American Indians, African Americans, Hawaiians, and Puerto Ricans) are identified in niches compared to 8% for White-American groups, and 31% for non-European groups comprised of Latin American, Caribbean, and Asian populations (Wilson 2003).

Ethnic niche employment provides many benefits for work and community formation. However, ethnic groups differ in their niche occupations considerably and benefits vary.

Greater work benefits (e.g. wage and benefits) are observed for recent Black immigrants than US-born African Americans, particularly for Black immigrant women. At the same time, these niche occupations often have long and non-standard work hours thus creating less time for research participation (Hamilton, Easley, and Dixon 2018).

Other work arrangements occur in occupations where ethnic minorities and immigrants are often significantly under-represented in the workplace. This is especially evident among ethnic minority and immigrant women in professional, non-traditional occupations (Mutambudzi 2017). That is, ethnic minority or immigrant workers may exist as one of few persons employed who identify themselves from their ethnic group or immigrant background. The routine job stressors often become elevated or prolonged when coupled with experiences of 'otherness' and discrimination at the workplace (Mutambudzi 2017). Job concerns and work life imbalance can then undermine the engagement of these workers in research when it is conducted in a workplace setting. There is research noting that work-family conflict is high among non-Hispanic African-American women. While job insecurity is high among Hispanic American women when compared to White-American women (Mutambudzi 2017). These psychosocial factors impact mental well-being and may compromise a worker's ability to commit to research designed for worksite participation.

With the emergence of the peer-sharing or gig economy, ethnic minorities and immigrants have non-standard work options such as services for hire, and transportation. The ride sharing industry, for example, is creating economic options for both immigrant women and men (Hua and Ray 2018). Despite this, male immigrants are more likely to be full-time drivers than females (Hua and Ray 2018). These new economy jobs have shifting worksites (mobile, on demand, etc.), which makes it cumbersome to meet with workers for research activities. Additionally, the variability of work hours for both part-time and full-time employees in non-standard jobs make scheduling during work hours challenging for researchers.

Social volunteering as a form of (unpaid) work

Social volunteering, a social expectation and cultural value for many ethnic minority and immigrant populations, adds additional committed hours into the schedules for some groups. Ethnic minorities and immigrants are likely to have multiple jobs Differing in time, quality, and salary compared to White Americans (Ahonen et al. 2018). Engagement in multiple jobs results in a way to compensate for earning low wages in one job and to supplement income and ensure that living expenses are met. These conditions of work life already limit the time available to participate in research. The expectation of social volunteering adds another layer of challenges for those ethnic minority and immigrant workers to engage in research. However, the amount of time and the volunteer roles, benefits and limitations of participating in volunteer work (e.g. sororities, cultural organizations, schools, etc.) are rarely investigated by OH researchers. Thus, this feature of work life for ethnic minorities and immigrants is not well understood or considered when designing research studies.

Time poverty as a barrier

Williams, Masuda, and Tallis (2016) noted that many households today experience time poverty as a result of imbalances in the amount of time needed to sustain a healthy life and

the use of available time. They argued that time can be conceptualized in many ways, including necessary, committed, contracted, or leisure time, or alternatively as necessary, work and leisure. Time poverty results when hourly demands do not meet hourly needs. Time, as a basic unit for well-being, is needed to participate in research; yet, research might be considered a self-actualization activity by ethnic minorities and immigrants which does not support temporal well-being or work. Thus, it is important to describe the purpose, implementation, and dissemination of research as both time beneficial and efficient for ethnic minority and immigrant worker well-being.

The participation in paid and unpaid work is often intensified in two-couple households when both adults work, and in families when caretaking adults are workers. Household production – the work of maintaining healthy sustenance for family members, supporting family well-being, transporting others, and ensuring the care of residential dwellings – is often not researched as a health risk of employed families. This specifically is salient for women given that they spend hours in household production (Mutambudzi 2017; Williams, Masuda, and Tallis 2016).

Methodological issues related to worksite-based OH research focused on ethnic minority and immigrant workers

Impact of work organization

Occupational health science and social science researchers have spent decades examining the effects of work organization (work processes and organizational practices) on workers' physical and psychological health, including job tasks, work schedules, workplace culture and climate, workplace violence policies, and management practices (Landsbergis, Grzywacz, and LaMontagne 2014; National Institute of Occupational Safety and Health 2018). These work processes and organizational practices do not only affect worker health and safety but also adversely become barriers for recruiting and engaging workers to participate in research projects. Gatekeeping from owners, managers, or supervisors (especially those in small businesses and chained institutions) often is the first access challenge to overcome in order to conduct worksite recruitment or worksite interventions (Lindsay 2005). Time taken away for business operation, perception and experience with OH activities or health promotion programs, labor-management relationship, suspicion toward OH research, and fear of a negative impact on their reputation are factors influencing gatekeeper decisions (Barbeau, Wallace, et al. 2004; Kidd et al. 2004; Lindsay 2005). After obtaining a worksite agreement from the gatekeepers, researchers then face negotiation with workers who are prospective participants. Work schedules, no paid leave policies for employees to participate in research, fear of reprisal, and distrust in researchers or the systems all impede worker participation in OH research (Kidd et al. 2004; Lindsay 2005). The challenge of recruiting ethnic minority immigrant workers is exacerbated by cultural and language barriers, discrimination associated with immigrant or citizenship status, and fear of deportation (de Castro et al. 2006; Menzel and Gutierrez 2010). Moreover, among 5.4 million workplaces in the US, 96% of them have fewer than 50 employees, 89% have fewer than 20 employees, and 79% have fewer than 10 employees (US Census Bureau 2017). These small businesses, where many ethnic minorities and immigrants are employed, fall behind in the prevention efforts to ensure occupational health and safety

(Eakin, Cava, and Smith 2001; Hasle and Limborg 2006). This lag in prevention efforts among small businesses result from several challenges that these small businesses face, including the constant change in the economy, the high demands and multiple roles undertaken by a small number of individuals, lack of resources (e.g. personnel, financial), and often lack of formal management structure in place to address health and safety (Brown et al. 2018; Barbeau, Roelofs, et al. 2004). Reasons such as limited resources, costs of implementing control measures to intervene, and employers' perspective that occupational health and safety is the employees' responsibility make research access to ethnic minorities and immigrant workers through small business worksites even harder.

Work organization of academic and research institutions also contributes to the impediment of active participation of ethnic minority and immigrant workers in research. While management procedures and policies may vary at institutions because of their size and research emphasis, human subjects protection is one area that any academic and research institution engaged in research activities needs to vigilantly monitor for assurance of ethical conduct. The social and health sciences literature has documented that the informed consent procedure – a 'standard' research practice and a socially constructed concept grown out of Western society (Miller and Boulton 2007) – engenders fears or suspicion in some immigrant groups who are unfamiliar with this practice. The concerns about the implications to their information and immigration status that are associated with signing consent forms become a hindrance to research recruitment (George, Duran, and Norris 2014; Han et al. 2007). In other cases, cultural differences in determining who has the autonomy and authority to consent for participation present another challenge to recruiting ethnic minority and immigrant participants (George, Duran, and Norris 2014; Nijhawan et al. 2013). As the meaning of informed consent for research changes over time, organizational practice about informed consent procedures also becomes more regulated and bureaucratic (Miller and Boulton 2007; Nijhawan et al. 2013). With increases in complexities of research designs, technology development and data sharing, and international migration and interactions, we expect that organizational practice around human subjects protection, including informed consent procedure, will continue to be shaped and modified. Additional efforts are desired to modify work organization of academic and research institutions to address barriers such as mistrust of research (George, Duran, and Norris 2014; Han et al. 2007) or culturally insensitive recruitment approaches and research protocols (George, Duran, and Norris 2014; Nijhawan et al. 2013; Roosa et al. 2008).

Need for a paradigm shift

There continues to be a need for clarity on the process of gaining access and getting buy-in from ethnic minority and immigrant workers. Specifically, there remain challenges in collecting data and implementing interventions among workers whose personal demands, work management and/or organization structure (e.g. high demand to complete work tasks with little to no down time) do not allow for research. Regardless of the push for employer buy-in and a clear presentation of a cost–benefit analysis in relations to employee health and increased work productivity (Goetzel and Ozminkowski 2008; Strijk et al. 2013), the resources (e.g. financial, temporal, and spatial) required at the forefront may preclude employers from supporting their employees to participate in research.

Thus OH researchers are behooved to explore other avenues to understand the health of ethnic minority and immigrant workers. For this reason this article is focused on more than considering community-based organizations as a place to access workers. Working with community-based organizations can help gain a comprehensive picture of all the work activities undertaken by ethnic minority and immigrant workers, including paid, unpaid, and social volunteering work. Examples of these avenues include: train-the trainer approaches, lay health advisor programs (O'Connor et al. 2014), and collaborations and partnerships such as that between the National Institute for Occupational Safety and Health (NIOSH) and the Mexican Ministry of Foreign Affairs aimed at promoting occupational health safety among Mexican immigrant workers (Flynn et al. 2013).

OH researchers (e.g. Baron et al. 2014; Cook 2008) have called for an integrated methodological approach when promoting the health of ethnic minority and immigrant workers. They highlighted the positive role of institutions outside of the workplace such as community-based or faith-based organizations (FBOs) on the health and well-being of workers, particularly low-wage workers. Baron et al. (2014) provided several examples of how programs informed by a social ecological framework that encompasses the workplace and the community can be beneficial in promoting the health of at risk workers. The key questions that remain are: (1) given the time constraints of many ethnic minority and immigrant workers, how do OH researchers ensure active participation (e.g. relating to time flexibility)? (2) What are some of the approaches that OH researchers can undertake to maximize research engagement flexibility, thereby minimizing the individual workers' burden in participating in the research project?

In addressing OH disparities and promoting OH equity, Krieger (2010) urges for an engagement that "extends from basic surveillance to etiologic research, from conceptualization and measurement of variables to analysis and interpretation of data, from causal inference to prevention action, and from the political economy of work to the political economy of health" (105). Such engagement calls for creativity and problem solving in relations to methodological approaches to address social contextual factors affecting the health of workers and their health outcomes. As the federal research agency in the US focused on generating knowledge for health and safe workplaces and workforce, NIOSH understands the urgency for this paradigm shift. It instituted the Occupational Health Equity program to address the pressing occupational health disparities and inequities targeting core structural exclusions and social and economic forces. This endeavor encourages partnerships and capacity building to question and mitigate those forces (e.g. what leads to certain workers in specific high risk jobs and experiencing heightened health risks and injuries) (National Institute for Occupational Safety and Health (NIOSH) 2018).

In summary, conducting occupational health research among ethnic minority and immigrant workers is very important to promote their health. However, inclusion and participation of these workers in research continue to be a challenge. This lack of inclusion and participation stems from several factors including workplace policies, structures, worker-related characteristics, and research designs. In the following section, we will discuss our research experiences with three different worker groups: hotel housekeepers, church volunteers, and food service workers and our various approaches for inclusion and participation in our research. Three different ethnic minority or immigrant worker populations starting with the impetus that led each of us to focus on the identified worker population, then the strategies we used to engage our target worker population,

Table 1. Issues from exemplars relating to ethnic minority and immigrant workers and suggested opportunities for inclusion.

Issues	Exemplars	Opportunities for inclusion
Organizational buy-in (e.g. church leaders, owners of food services places)	1, 2, 3	Meet with key stakeholder to co-design aspects of the inquiry project.
	2	Ensure there is leadership commitment for the research from top administrators.
Schedule of work in organizations	2, 3	Work with workers to map logistical and consistent participation schedules.
Time equity	2	Develop role and responsibility descriptions to match time commitments.
	2	Assess time preferences for participation and align those with inquiry needs.
Economic equity	2, 3	Develop an equitable financial reimbursement and support structure to encourage participation which matches time and fiscal incentives.
	1, 2	Ask about the best ways to efficiently reimburse participants such that they do not have added time commitments needed to access incentives.
	2, 3	Reimburse organizational sites for the use of their facility during the research project.
Language diversity	1	Hire multilingual staff directly, or alternatively from organizations to assist with data planning, gathering and analysis.
Fear of deportation	1	Develop scripts to explain the project and address fears directly.
Trust assessment	1, 2, 3	Assess how the research organization in which you are employed has or has not supported trust in the past with selected organizations.
Trust planning and maintenance	1, 2, 3	Ask about ways to support trust development and develop a plan for trustworthy communications.
	1, 2, 3	Develop initial, midpoint and final surveys to evaluate trust and repair trust breeches.
Work-life and research	1, 2	Review roles and expectations to ensure participants are not asked to do more than they agreed to do.
	1, 2	Have midpoint and final evaluations of the project to assess work-life and research expectation conflicts.
Research participation barrier assessment and follow-up	1, 2	Ask participants about what are needed and reasonable financial and non-financial supports which would support their continued research participation.
	1, 2	When someone drops participation, inquire about the barrier and what could be relevant solutions.
Agency tailored engagement messages	3	Develop agency-specific scripts to have a consistent message about engagement.
Family care	1	Provide funds for childcare or eldercare.
Project scope creep	2	Evaluate the project at regular points (e.g. every 3–4 weeks) to ensure the project scope did not expand without added resources for participants.
	2	Be clear to differentiate required from optional participation.
Multiple data collection processes	1	Offer in-home data collection or flexible times for data collection.

followed by the challenges and successes we encountered will be discussed. Table 1 summarizes key challenges that were identified in the literature or from our research experiences as well as strategies that we used across these three examples.

Examples drawn from three programs of research

Program of study one: hotel housekeepers

The worker population

Hotel housekeepers are a vulnerable group of workers at risk for ill-health (e.g. hypertension) due to exposure to musculoskeletal, biological, chemical, and psychosocial

hazards (Sanon 2013, 2014; Rosemberg and Li 2018; Hsieh, Apostolopoulos, and Sönmez 2016). The very few studies that have been conducted with this at-risk worker population have corroborated the fact that they are primarily foreign born individuals and women of color (Buchanan et al. 2010). Despite constituting the largest workforce in the hospitality industry and driving customer loyalty and the booming of the industry (Kandampully and Suhartanto 2000), hotel housekeepers remain underpaid, experience high job insecurity and are understudied. Although studies are needed to assess and mitigate their risks for poor health outcomes, the complex nature of the industry and characteristics of this worker group and their workload pose a challenge for OH researchers. Specifically accessing, recruiting, and collecting data among this worker group requires specific, well-thought-out strategies that, if not effectively executed, can result not only in underachieved effect size and poor study outcomes but also in further jeopardizing the workers' well-being from a psychological and employment/financial standpoint.

The strategies and results

The first author conducted a study that explored blood pressure among a group of hotel housekeepers ($N = 39$). To access prospective participants, the research team contacted managers from local hotels ($n = 6$) and sent letters to FBOs ($n = 4$) and local community organizations ($n = 4$) that provide service to ethnic minorities and immigrants within the community. Connection was also established with the director of the local union that serves hotel housekeepers and other hospitality workers in the region. In addition, one research team member was a certified Spanish translator and played the role of a cultural broker for the Spanish speaking hotel housekeepers.

Two out of the six hotel managers who the research team contacted agreed to have flyers dropped off at their front desk. However, none of the study participants reported being from those hotels. The research team was unable to clearly determine whether the flyers that were left at the front desk as indicated were distributed to the workers. Four FBOs and four local community organizations, two of which serve specifically the Hispanic Latino population within the community, provided letters of support and agreed for the research team to distribute flyers and make announcements to reach potential study participants. The union had provided an office space for the research team to meet with the study participants after their union members meeting and collect blood pressure readings and survey data. All of those recruited through the union were African-American while the majority (64%) of those outside of the union reported being Hispanic Latino.

Thirty-nine hotel housekeepers were recruited. Ten study participants were accessed through the union; the remaining 29 individuals were recruited through the Spanish speaking cultural broker and the snowball technique. It is important to note that for those 29 individuals, data were collected in the individuals' home. Some were completed in groups of 3 or 4. During those data collection times, many participants had children that needed to be tended to. The research team members then also assisted with entertaining the children while the participants completed the survey and other research team members measured participants' blood pressure. Data collection for these 29 individuals all occurred in the late evening between 6 and 9 pm, because that was the time that the individuals would get home from work.

Summary

From this example, we see that none of the participants were recruited directly from their workplace. A complex community engagement approach with several prongs including unions, faith-based communities, and local communities serving immigrants and vulnerable groups may be a successful method for OH researchers working with this worker group. Moreover, cultural brokers are often used as the 'go-betweens' for cross-cultural communications (Raj 2016; Eggerth and Flynn 2010). The cultural broker used in this study was germane in the recruitment and data collection process because of this person's established trust with the individuals within the community. Participant-related time restraint prevented the research team from reaching potential study participants. There also could have been some overlap whereby the individuals who participated were affiliated with the FBOs as well as the CBOs within the community. Given the complexity of the various factors marginalizing hotel housekeepers and hindering their participation in research studies, consideration of a multi-pronged access approach with an emphasis on community engagement, partnership with local unions, and a cultural broker is ideal.

Program of study two: volunteer-unpaid church workers

The worker population

Volunteers are those who offer their time unpaid, except for occasional reimbursement of expenses, to provide services on behalf of an organization. In 2015, 24.9% of the population in the US volunteered, about 62.6 million people (Bureau of Labor Statistics 2015b). Few studies research volunteers as a workforce or their health outcomes, yet many organizations operated by people of color rely upon a coordinated volunteer pool. Volunteering was associated with poor physical health and positive effects on depression, life satisfaction, and well-being in extant cohort studies (Jenkinson et al. 2013). Adults who are married, adults with children, and adults aged 35–44 years old and 45–54 were most likely to volunteer in 2015. Notably, during the year ending in September 2015, 27.2% of those employed volunteered, with those employed part-time being active at 31.1% compared to those employed full-time at 26.3% (Bureau of Labor Statistics 2015b).

The volunteer workforce is a non-traditional worker population which is understudied in the US. However, studies abound about the volunteer workforce abroad (Haile, Yemane, and Gebreslassie 2014; Ludwick et al. 2014; Ramos et al. 2015). The health impact and complexity of managing one or two paid jobs in addition to a volunteer role is often not questioned in traditional research studies. Nonetheless, the work role of volunteering is important in that it may considerably undermine the time available for health protection or advancement.

The second author designed and conducted an inquiry with church-based volunteers (Boutain and McNees 2013; Boutain 2009). Churches are often research recruitment sites since many of their members are diagnosed with chronic or acute health conditions, and are available for access in one place (DeHaven et al. 2004). Members of these organizations also frequently volunteer their time while also having employment commitments. With a focus on church wide organizational improvement, volunteers were additionally asked to support a focus on institutional health and wellness during the inquiry.

Members who are managing health conditions are also in roles to support the prevention of those conditions in others. Thus, the church volunteer plays a vital role in health promotion in FBOs. However, there is limited inquiry designed to explore and describe the work of volunteers in faith-based settings from an occupational health point of view. Strategies to access, recruit, retain, and collect data with volunteer workers from church settings are noted below.

The strategies and results

The second author has three, interconnected lines of inquiry in churches. Scholarship foci include research dissemination (Boutain 2009), health policy development, implementation and evaluation (Boutain and McNees 2013), and health policy sustainability. One project with churches focused on disseminating information about preterm birth disparity and resources to promote health equity in birth outcomes among African-American families (Boutain and McNees 2013). A second project developed and evaluated healthy eating and active living policies in church organizations serving children and youth from low-income backgrounds (Boutain and McNees 2013). A third line of scholarship focused on evaluating the sustainability of health policies in a church context.

In all scholarship, the first priority was to communicate directly with key leadership directly about their interests and needs in working together. The second author called church organizations in the local county before any grant application was written. Online telephone directories, classified newspaper ads, and referrals from prior calls were used to locate the telephone numbers of church organizations. Of the twenty-five churches called using the main office telephone number, none returned telephone calls. In one project, although eight churches were interested, six fit the enrollment criteria, were able to schedule an in-person meeting within the timeframe for grant development, and were available to co-develop project ideas in time for grant submission.

Prior to scheduling an in-person meeting, at two telephone calls were completed for each church organization, but more calls (1–2 calls placed) were placed before talking with anyone on those two calls. The first call was focused on talking with the health ministry lead, as no church volunteer would schedule a meeting with the Pastor if there were no interested volunteers to work on the project. The second call was to schedule the meeting with the Pastor and talk with the Pastor or his/her designee about the meeting agenda.

The first meeting with the Pastor and interested health ministry volunteers was critical. Before the first inquiry project was submitted for grant funding, it was important to talk with church leaders about what was relevant, feasible, and acceptable. The preferred communication methods, work meeting times, project time frames, and budgetary supports were discussed. Tentative ideas for several grant directions were presented for discussion and critique.

All church volunteers and Pastors preferred in-person communications rather than telephone or email. Telephone and email were used to schedule in-person meetings and finalize the agendas, not to replace those in-person meetings. Email was most helpful to send the agenda along with written preparatory materials before the meeting. In-person meetings during the weekend were not preferred; rather, the weekdays of Tuesday, Wednesday and Thursday were optimal in-person communication days. The first meeting also focused on describing the nature of the reason for engaging with churches, the barriers and rewards of project participation, and the human, fiscal, and administrative resources needed from the church and research organizations. The first meetings established the

boundaries for the engagement and highlighted organizational concerns which were not locally known to the second author.

Although distrust of research institutions is a common barrier for researchers in general, the meeting revealed processes which would trigger future distrust and undermine the project. Leaders spoke of how they were not interested in person 'swaps.' That is meeting and agreeing to a project when communicating with one person and then having another person replace the person who established the initial contact once the project was underway. There was a need for one reliable and accountable contact person from the beginning to the end of the project. Leaders also had experiences with 'baiting and tacking' or the idea of agreeing to one project and then having other ancillary projects added to the initial agreement implicitly. Additionally, leaders and health ministry volunteers wanted to know what was required for the participation commitment given their limited leisure time hours outside of work, volunteering, and family life responsibilities. The separation of state and church was also a discussion point, as church organizations did not want any funds that would influence their internal faith beliefs or practices.

These considerations were necessary to design inquiry viewed as worthwhile, acceptable, and feasible from the point of view of the organizations. In all projects conducted by the second author and team, time flexibility was accounted for in the amount of engagement each could offer, while still having a core, basic, shared organization-wide dissemination, implementation or evaluation focus with all institutions. That is, there was a minimum amount of time and effort committed to by each organization for a specific time duration. However, some organizations were inclined to do more implementation work if the project was based on implementation (Boutain and McNees 2013), while others completed more dissemination work if the project was based on dissemination (Boutain and McNees 2013). This allowed for the development of grants that included a differentiated model of work (core engagement work and additional engagement work), engagement, and time commitments. The differentiated model allows for the investigation of core elements and allowed for an exploration of organizational and volunteer characteristics which supported more inquiry engagement.

During meetings with churches, volunteers who were needed to participate in the projects were specified. This was particularly important in project recruitment because the volunteer participant needed was based on the roles that the volunteer may have had in the organization, and some people occupy more than one role. Leaders were asked to identify the non-financial and financial drivers to support recruitment and retention of church volunteers. Non-financial drivers included ease of participation, volunteer work recognitions, personal development opportunities, and the conditions of the inquiry environment (low hassle, respectful, welcoming, supportive, effective time use, etc.) not just the significance of the research. Financial drivers focused on the reimbursement for materials used (computer paper, pens, etc.), means and time for travel, and opportunities lost as a result of project participation.

To support data collection, the attendance and mindful presence of volunteers was needed. The majority of participants were only available in the afternoon to nighttime hours, from 6 pm to 10 pm, at the end of long work days. Thus, meetings were scheduled during those times, and the project teams would shift their work hours accordingly. The meeting place was selected to include adequate, free parking which was nearby participants' work or home sites. The team used regular reminder calls (2–3 days prior to the

meeting), emails (1 week, 2–3 days prior to the meeting, and the day of the meeting), and text messages (2–3 days prior to the meeting and day of the meeting). Reimbursement for childcare, elder care, and transportation each meeting was provided ($50 per meeting in one project and $100 per meeting in another project). All of these ways of communicating with participants and the supports for participation helped to have at least 90–95% attendance at each meeting.

Volunteers were asked what would help them to be mindful in a meeting. Some were concerned about being distracted given their need to prepare meals for family members after they would attend evening and night meetings. For one project, a healthy evening meal that could be used in churches for large groups was prepared by the volunteers themselves and reimbursed each meeting ($200 monthly). The meal was accompanied by a healthy recipe for how to prepare the meal so that other churches could replicate the meal at a church or family event. Typically, there was enough food for everyone to eat, and extra take-away portions were allocated for volunteers who had children and elder family members to care for at home. Additionally, each institution was provided a modest fee of $50 per month for each month of use to reimburse the institution for space, copying, and facility use. In another project, extra box lunches were provided for volunteers to feed children or elders the next day, if this was expressed as a distraction. Volunteers noted that this helped them participate in the research without missing their family responsibility for lunch or dinner preparation. This supported mindful engagement because volunteers were not concerned about how to fulfill household responsibilities as the meeting concluded.

Summary

Time, financial, meal and planning supports helped to support the participation of volunteers in the inquiry. It is critical to provide budgetary resources for the time allocated by research participants, especially those with competing fiscal interests, which may be an initial barrier for research engagement. Volunteers were directly asked what would help them successfully participate in each project, and they provided concrete ideas which were used. Inquiry with volunteers requires a thoughtful approach to the specific roles desired by volunteers in the project along with consideration of their other job, work, social and family life responsibilities.

Program of study three: food services workers

The worker population

The food services and drinking places are a major private employment sector in the US. Approximately 12 million people were employed in this sector as of January 2018, with a projected increase of 1.2 million jobs by 2026 (Bureau of Labor Statistics 2018). More foreign born workers (7.1%) than US-born workers (5.1%) are employed in food preparation and serving occupations (Bureau of Labor Statistics 2016). Most of the occupations, except chefs/head cooks, in this sector are among the lowest paid jobs in the country (Bureau of Labor Statistics 2017a). Only 1.8% of the food service worker population are represented by unions that provide collective bargaining power for worker health and safety protection as well as benefits (Bureau of Labor Statistics 2018). Because most of the occupations in the food service industry do not require formal

educational credentials (Bureau of Labor Statistics 2017a), immigrants are attracted to and seek jobs in this sector to gain much needed economic support for successful resettlement. Considering the vulnerability of the low-wage food service workers to poor health (Chinese Progressive Association 2010; Restaurant Opportunities Center of New York 2018), the third author and team conducted a series of studies with immigrant restaurant workers (Tsai and Salazar 2007; Tsai and Thompson 2015) to develop comprehensive understandings of work and non-work-related factors that influence their health and work outcomes. The recruitment and data collection processes shed light on the gatekeeping effects from business owners and managers on access to immigrant workers and recruitment through worksites. The study findings also led the third author and team to turn to non-governmental, community agencies as alternative venues (compared to worksite venues) to reach immigrant workers and to partner with in order to advance immigrant worker health research (Tsai and Thompson 2017; Tsai and Petrescu-Prahova 2016).

The strategies and results

Community agencies, especially immigrant community institutions, are critical resources, cultural and linguistic brokers, and advocates for immigrant populations (Chow 1999; Chinese Progressive Association 2010; Chin et al. 2008). The third author and team identified and approached 31 community-based organizations (CBOs) and 21 FBOs serving the target immigrant workers for their community-based worker health study. Twenty-six agencies agreed to participate, representing a 50% acceptance rate, and provided interview data on how their agencies make decisions about program changes and adopting new programming such as basic worker health education. Ten of the 26 agencies then were asked to take part in the basic worker health education pilot trial. Despite their interests in the study, two of the 10 agencies were unable to participate due to a mismatch between the timing of the pilot trial and their internal programming schedules.

Although the agencies that were approached all served immigrant populations, a number of challenges occurred over the course of the study. Yet at the same time, they presented invaluable knowledge about the use of community agencies to reach ethnic minority and immigrant workers for research. First, the agency website contact information was not always sufficient to initiate the invitation process. Additional investigations were required to gather the information in order to contact the agencies in the recruitment pool. Multiple phone calls were required before actual connections could be made for recruitment or data collection arrangements. Process evaluation revealed that it took three to four attempts to secure an agency response and typically eight attempts to create an agency contact where the research staff could actually have a two-way conversation with agency representatives. Over the course, the research team encountered agency personnel changes, which often were not communicated with the research team in advance. Additional time and efforts were needed to re-establish the connections and mutual understandings about the study. Persistency and allowing for broad data collection windows were useful strategies that led the research team to overcome the agency recruitment and data collection challenges.

Another challenge was that the agencies in the recruitment pool were unfamiliar with research in general and did not have services or programs that directly focused on work-related health. As a result, some agency representatives were unable to conceive the relevance of or fit with research project goals and/or had concerns about their clients'

perceived relevance for their primary reason for visiting the agency. To assist staff in recruitment, the research team developed research project-specific Frequently Asked Questions (FAQs) and communication templates to serve as recruitment guidance. The team also tailored communication strategies to agency types (CBOs vs. FBOs, CBOs serving a broad range of clientele vs. serving primarily the study target groups) so that the research staff could convey the study focuses and design effectively to the agencies. For example, some FBOs wondered about their relevance to the study because their focus was only on spiritual support. Using the tailored approach, the research staff helped them understand that co-ethnic FBOs such as theirs had been providing informal employment-related assistance to their immigrant members, and spiritual support was an overlooked yet critical aspect of the holistic view of health. Making the rationale behind the study design explicit and *within* the agency's context during the recruitment allowed the agencies to see the relevance and roles they could play in an immigrant worker health study.

Concerns about the demands on staff, timing, and uncertainty about feasible mechanisms to engage the study's target immigrant worker groups for the 2-month pilot intervention were other challenges. The research team included funding in their budget to compensate agencies with $500 for their participation. The compensation amount was estimated to cover their time spent on a 1-hour meeting to identify the dissemination mechanism(s) and designated staff person as the implementation specialist, a 1-hour training session with the designated staff person, and the delivery of the basic worker health education using their already existing programmatic or service venues. Although there was no tangible data on how the monetary token of appreciation enhanced the recruitment, some agencies did express their appreciation. Active listening to agency concerns and brainstorming *with* the agency to identify potential solutions were effective in increasing agency willingness to participate in the study and solidifying agency engagement. The power of the brainstorm-with-the-agency mindset and approach was particularly apparent during the intervention pilot trial when the designated agency staff would generate ideas to overcome barriers to reach the study goals without compromising the study design and integrity.

Summary

Community agencies are underutilized resources for immigrant worker health research. They are important venues for reaching out to immigrant workers, especially those who are employed in low-paying jobs such as food service. Engaging community agencies in research. In general, and in immigrant worker health in particular, is not challenge free. However, the experiences described in example three offer strategies for OH researchers and professionals to effectively approach and engage community agencies, especially those whose services do not typically focus on occupational health and safety.

Conclusion

This paper details strategies helpful for the inclusion and retention of ethnic minority and immigrant workers in OH research. In addition to discussing several aspects of work (e.g. standard paid vs. volunteering), we described numerous factors (e.g. time poverty, organization of work settings, and research institution policies) that impede inclusion and active

participation of ethnic minority and immigrant workers in research studies. Despite the differences in occupation across the three groups (hotel housekeepers, church volunteers, and food service workers) presented in this article, common opportunities for inclusion in research projects were noted as a result of working with ethnic minority and immigrant workers. Examples included: time poverty, financial restraints, lack of trust, and organizational practices and policies. We employed a combination of approaches in our research to mitigate those inclusion-related challenges. Examples of these approaches were: time flexibility in scheduling, after hour data collection, transportation, provision of free parking, refreshments, meeting place options, and care services for participants as well as their dependents. Rapport building, connections with local community stakeholders and organizations (e.g. CBOs, FBOs, and unions), using their organizational frame of reference for brainstorming, and use of cultural brokers also were germane to the success of the projects.

With the increasing interest in using CBPR as the principal research approach to design ethnic minority and immigrant health studies, we recognize there are gaps in the health science literature in general. The OH literature in particular, despite evident growing efforts (e.g. Flynn et al. 2013; Eggerth and Flynn 2010), continues to lag behind in effective strategies for accessing and retaining ethnic minority and immigrant workers for research. Through this paper, we affirm that conducting research among ethnic minority and immigrant workers is rewarding when researchers prepare well-thought approaches for inclusion, remove participation barriers, and are clear about what type of participation is desired. Although focused on different types of workers, the three programs of research have worker-centered as well as collaboration-oriented strategies for engagement at the worker and agency levels. Given the challenges associated with workplace recruitment of ethnic minority and immigrant workers, we hope to inspire OH (and other health science) researchers. Whether working with traditional (paid) or non-traditional (volunteer) workers, scholars can consider using the insights gained from this article to design inclusive approaches to, occupational health research participation.

Limitation

These programs of research showcase how to include diverse worker populations in research. However, follow-up data about which methods were most useful was not collected. It is not clear which strategies were most important for research inclusion and retention. Implementation research about which strategies are most beneficial to different worker population groups is needed.

Disclosure statement

No potential conflict of interest was reported by the authors.

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