Research Articles

Using Community-based Participatory Research to Assess Health Needs among Migrant and Seasonal Farmworkers

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ABSTRACT

Principles of community-based participatory research (CBPR) were applied among migrant and seasonal farmworkers (MSFWs) in a seven-county region of east Texas. The study purpose was to establish community-based partnerships for CBPR and conduct a preliminary qualitative assessment of perceived health needs and capacities. Key informant interviews and a snowballing technique were used to identify gatekeepers and recruit participants from three stakeholder groups: health care providers, social service providers, and MSFWs. A modified nominal group technique (NGT) was applied in a series of five qualitative group interviews: one group of health care providers (n=9), one group of social service providers (n=11), and three groups of MSFWs (one all male, n=4; one all female, n=8; one gender-balanced, n=8). To enhance response validity, the protocols used in each NGT session were adapted to the communication and problem-solving styles of each stakeholder group. The participants collectively identified behavioral, psychological, environmental, social/economic, and health service access/treatment factors believed to contribute to the health status of the MSFW community. A preliminary comparison of responses across stakeholder groups, known as heterogeneity sampling, revealed differing perspectives related to contributing factors and potential solutions. A discussion of the CBPR process and results, and specific intervention recommendations are provided.

In the U.S., 3–5 million migrant and seasonal farmworkers (MSFWs) support a multi-billion dollar agricultural industry.[1–3] Yet, 58% of MSFWs live in poverty and half earn less than $7,500 annually.[3] The majority of MSFWs are U.S. citizens or legal residents who are eligible for Medicaid and food stamp programs. However, less than 12% of revenues to migrant health centers come from Medicaid and fewer than 25% of eligible MSFWs receive food stamps.

MSFWs often work and live in isolated unsanitary conditions that exacerbate health risks.[1–2, 4–5] A missed day of work translates into lost daily wages and, in some instances, immediate unemployment. These factors, combined with the barriers of poverty, language, culture differences, logistics,

and low perceptions of risk, cause MSFWs to bypass preventive measures and postpone primary health care.[1,3,6–7]

U.S. migrant health centers provide health services to some MSFWs, but have the capacity to reach less than 20% of the population.[8] At least 13 of these centers exist in Texas, a state for which proximity to the Mexican border and diversity of agricultural employment opportunities render it a key player in migrant health care efforts.[9] According to HRSA[10] an estimated 362,724 MSFWs and their families reside in Texas. Yet, this number only represents those whose migratory moving patterns match the seasonal shifts of work availability. Many medically underserved farmworkers do not qualify for migrant health services because

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they are not, by federal definitions, migrant workers. Instead, these seasonal farmworkers remain in one geographic area and supplement income with non-agricultural employment in the off season.[2] Some of these seasonal workers reside in Texas counties that do not qualify for medically underserved funding because the number of hospitals and clinics that exist there are considered adequate for the population size. Yet, because few MSFWs have health insurance and documentation for state Medicaid assistance is difficult to maintain,[9] healthcare outside of the hospital emergency room is frequently denied. Lack of preventive care encourages MSFWs to only seek help when health problems progress to work- and/or life-threatening proportions. Because emergency rooms serve as the primary health care access point, an already overburdened health care system is becoming less and less capable of addressing growing needs.

The resulting situation perpetuates a deadly cycle. MSFWs who live in these counties need access to health promotion programs and preventive health care services. Funding for these programs/services depends on assessment data that can document the sizes and locations of the MSFW populations and their particular health needs. Lack of trust and participation in those efforts on the part of some medically uninsured and underserved MSFWs can be a barrier. Undocumented migrants or immigrants from Mexico and other countries are particularly distrustful of those who could play a deliberate or inadvertent role in their discovery and deportation. MSFWs with proper legal documentation may also bypass outside offers of help due to past experiences with racial prejudice and mistreatment.

In the face of these daunting challenges, the guiding principles of Community Based Participatory Research (CBPR)[11] can serve as a critical framework for health promotion among MSWFs. CBPR is a research model that has gained wide recognition among health education researchers in recent years. For a more thorough introduction to CBPR principles and applications, readers are referred to the work of Minkler and Wallerstein[11] and the Web site of the Agency for Healthcare Research and Quality (http://www.ahrq.gov).

The CBPR approach to research is not, within itself, a research method.[11–12] It is, instead, an *orientation to research*[11] that counters the more traditional paradigm of the past in which community-based research was often implemented by outside experts with little input from community members. Problems often arose in these traditional approaches when these researchers were insensitive to cultural norms and community perceptions, and when data collection resulted in no visible benefits to the community.[13] In contrast, the CBPR approach establishes community members and other stakeholders as valued and respected partners in each phase of the research (design, implementation, analysis, interpretation, and application). The research topic is based on community concerns, and the ultimate research goal is to empower the community to develop intervention strategies that improve the community's quality of life.[11–14]

Because trust is not easily won among MSWFs, efforts to build it must begin with the slow process of fostering significant collaborative partnerships between local agency representatives, community leaders, and members of the MSWF community. The task calls for long-range commitment, visionary thinking, and a willingness to embrace community-friendly adaptations of traditional research methodologies.[11,14] The CBPR model could serve as a valuable framework for accomplishing the task.

The purpose of this study was to initiate the establishment of a long-range CBPR partnership to address the health issues faced by migrant and seasonal farmworkers (MSFWs) in a seven-county region of east Texas. More specifically, the researchers aimed to identify and engage stakeholders in collaborative discussions needed for the CBPR framework and conduct a preliminary qualitative assessment of perceived health needs and capacities.

METHODS

This two-year study entailed a series of preliminary community meetings and key informant group interviews that were designed to establish CBPR partnerships, followed by a series of five qualitative group interviews among three stakeholder subgroups within the community.

Key Informant Interviews

Because CBPR calls for community partnerships in the preliminary stages of research design,[12] the first step of this study was to develop strategies for partnership development. A common challenge in developing effective partnerships between researchers and health practitioners is that effective collaboration requires work to establish mutual appreciation for what each brings to the project.[11,13,15–16] Therefore, the goal of these preliminary meetings was to establish a spirit of co-learning and mutual respect between researchers and community groups.

Methods used to accomplish this task largely entailed initial meetings with identified key informants within various community subgroups to begin building rapport and project interest.[12,17] Because two of the researchers lived and worked as public health nurses in the designated area, the research team began with four key informants who had worked with the two researchers in the past. Three of these contacts represented professionals in health care and social services: a director of a county health department, a public health physician who treated medically underserved clients, and a director of a nonprofit social service organization. The fourth contact was a gatekeeper in the MSFW community: a Hispanic, bilingual manager of a local plant farm who was also a trusted lay leader in her local Spanish-speaking church. This person later became an integral part of the study as a trained facilitator of MSFW group interviews and will be referred to hereafter as the *MSFW group facilitator.*

In initial separate meetings with these contacts, the stated goal was to develop collaborative partnerships though which the

health issues of MSFWs in rural east Texas could be addressed. The research team used a traditional key informant approach[18] to interview these contacts by asking three questions: *What are the general health needs of the local MSFW community? What is currently being done about meeting those needs? What should be done about resolving needs that are not currently being addressed?*

Because of the tentative nature of these initial contacts and the need to foster an atmosphere of trust, these interviews and subsequent group meetings were not audio taped. Instead, an experienced qualitative researcher wrote detailed notes while another researcher conducted the interviews. The research team later compared, compiled, and developed consensus around a summary of interview responses. The summary produced evidence that perceptions differed across interviewees regarding MSFW health needs and current and needed efforts to address those needs. The two public health professionals focused predominantly on the challenges of establishing eligibility for state-level migrant health aid and expressed frustration with noncompliance among Spanish-speaking clients. The social service provider expressed concerns about the degree to which available healthcare was truly accessible to MSFWs due to transportation issues and cultural barriers, and emphasized a need for English as a Second Language (ESL) training and other assistance to help MSFWs better navigate the healthcare system. The MSFW group facilitator explained that few MSFWs accessed local health care, most ignored health problems until their severity necessitated a trip to Mexico for treatment.

A larger interview audience was needed to further explore stakeholder perceptions and begin to develop community consensus about needs and potential solutions.[11–12] To accomplish this, an expanded key informant approach[18] (snowballing) was used in which the key informants were asked to invite to subsequent meetings at least five other people with knowledge and interested in MSFW health. To facilitate emergence of the "hidden transcript"[20] of community dialogue, (perspectives that subordinate groups are more comfortable expressing in the absence of other power groups), separate meetings were scheduled for MSFWs and service professionals.

The research team met with 20 health and social service professionals who were self-identified as holding interest in the health and welfare of MSFWs. In this meeting, the participants were asked about project feasibility and their willingness to participate in future efforts to respond to the three questions posed in earlier interviews. Though collectively, the group expressed support for the project, some potential collaborators openly questioned why the research team was interested in the project and to what extent the team could be expected to maintain over time a supportive level of interest and involvement in the community. In response, the researchers applied CBPR principles by expressing appreciation for these candid questions and welcoming the opportunity to explain that, though long-range commitments and involvement in any community are driven by factors that cannot always be controlled, the team was committed to working in the community for as long as mutually beneficial partnerships could be sustained.

The researchers also cautioned these potential partners that, because effective needs assessment can be tedious and time-consuming, there could be times during the early stages of the work when the team would appear to be moving much too slowly or not at all. The researchers asked for patience and promised to maintain open communication throughout the process. This approach proved to be a critical link to some resulting partnership agreements, a finding that is consistent with CBPR research findings.[12] At the end of the meeting, every attendee signed an interest list indicating a willingness to participate in the next phase of the study, qualitative group interviews.

A separate key informant meeting was attended by five members of the MSFW community: the MSFW group facilitator mentioned earlier, the pastor of the facilitator's local church, and three other interested church leaders. To minimize the possibility of outsider intimidation, the research team decided that only one team member would attend this initial meeting. This team member had interacted with several group members in the past and was recognized as a person to be trusted. The goal of the meeting was to allow the team member to describe the interests, abilities, and limitations of the research team and explain the health-related purpose and partner-oriented goals of the project.

These five key informants expressed interest in working with the team and provided suggestions for how to effectively involve community members. These suggestions predominantly related to trust and access issues. They included the need to help the pastor make meeting announcements in church, hold meetings on a Saturday evening in a trusted member's home, conduct discussions in Spanish, use oral instead of written methods, carefully explain the purpose and long-range expectations related to the project, and assure participants that their identities would be protected. With these agreements established, the group agreed to recruit participants for the next phase of the study, qualitative group interviews.

Five Qualitative Group Interviews

The nominal process or nominal group technique (NGT), is a qualitative needs assessment method that maximizes individual participation in a interview.[18] The structured sequence allows members to write individual ideas on paper and share them with the to contribute to a compiled list on a chart or board. Each idea is discussed, clarified, and evaluated by the group and a democratic vote identifies group priorities.[18–19]

A series of five NGT sessions was conducted. Two of the five groups were comprised of health care providers (n=9) and social service providers (n=11) working in housing and social assistance programs, literacy programs, churches, and other nonprofit agencies. The other three groups were comprised of MSFWs: one all male (n=4), one all female (n=8), and one gender-mixed (n=8, 4 of each gender). Because of the need

for a tailored community-friendly approach, and based on documented evidence of successful NGT modifications,[18,21–22] the NGT approach was adapted to match the professional experiences, educational abilities, and cultural norms of each stakeholder.[12,23] Each approach is described below.

Health Care Providers Session

The NGT session of health care providers (n=9) was facilitated by two experienced qualitative researchers. The two-hour midday interview was conducted at a local church known for its service to underserved populations in the community. The facilitators began with an overview of the study purpose and interview protocol, audio taping and anonymity/confidentiality issues, and consent forms. To protect participant anonymity on the audio tapes, the participants agreed to wear nametags with an assigned alphabetic label (e.g., "Ms. A," "Mr. B"). The researchers explained that input would be combined with that of other stakeholder groups to create a broad descriptive picture of factors contributing to the health status of MSFWs in the community, and that this information would also be used to develop a quantitative assessment instrument for implementation among local MSFWs in a future study. This quantitative instrument would be useful in collecting information from a larger sampling of the population as trust and access to larger numbers increased.

Data collection began with the traditional NGT approach. A single question was posed: *What factors contribute to the health of migrant and seasonal farmworkers in east Texas?* Prior to group discussion, each participant created an individualized list of responses on notebook paper (~20 minutes). A master list of all responses was then collected in round-robin fashion and written on a large chart visible to all participants. The list was discussed by the group to clarify meaning and combine items deemed by the group to be duplicative (~20 minutes).

Lunch was then provided to convey participant appreciation and allow the facilitators to transition the group to the next planned stage of the process. In this modified or additional NGT step, the participants were asked to group the contributing factors on the master list into categories or types of contributing factors. The group generated, through open discussion and a democratic vote, four categories of factors that contributed to the health status of MSFWs: 1) behavioral, 2) psychological, 3) environmental, and 4) service access/treatment factors. The facilitators wrote each of these generated categories at the top of a separate chart page and posted each to the wall. The group then directed the facilitators to transfer each response item from the master list to a specific category. This process (~45 minutes) resulted in further group discussions and, from time to time, movement of items from one category to another. Eventually, the group reached consensus on all categories and factor assignments.

Social Service Provider Session

The NGT session for social service providers (n=11) was conducted one week later by the same two researchers using the same time, location, lunch arrangements, introductory protocol, and posed question. This session differed from the previous session in two ways: Results of the earlier session were incorporated into the brainstorming procedures to foster collaboration and consensus building, an inherent principle of the CBPR model[11]. Because the NGT can be time intensive[21] and this was very time-limited, an affinity diagram technique that involves self-adhesive "sticky notes" " (small self-adhesive squares of paper) was incorporated into the NGT procedure.[21,24] Thus, rather than jotting initial ideas on individual tablets, the participants recorded each idea on a separate sticky note. Once all sticky notes were created, the researchers explained that the group would be asked to use the responses they had written on their sticky notes to validate, alter and/or expand upon categories of contributing factors that had been created in the previous week by health care providers.

The facilitators then taped to the wall five separate chart sheets. Each of the four categories created by the previous group was written at the top of one of the first four sheets. At the top of the fifth sheet was written the word "Other." The participants were asked to place each of their sticky note responses on one of the five category sheets. The facilitators led a group discussion to verify interpretations of each categorization and to unify or re-label duplicate responses. The group discussed the "Other" items posted and, with a few sticky note items removed via group voting, decided to rename this new category "social/economic" factors.

Migrant and Seasonal Farmworkers Sessions

A research team member who resided in the county had already established a working relationship with a bilingual MSFW group facilitator. This person was highly respected by the MSFW community in her roles as a plant farm supervisor and a leader in a local Spanish-speaking church, and served as an enthusiastic and effective recruiter for the MSFW group participants. She was also trained by the researchers to serve as the bilingual group interview facilitator for the three MSFW group interviews in which a total of 20 individuals from the migrant and seasonal farmworker community participated. To avoid transportation and work-schedule conflicts, each group interview was conducted on Saturday evenings in the recreation center of a small Spanish-speaking church nestled in the midst of the farms where many MSFWs worked and lived.

The research team members and the MSFW group facilitator worked as partners to facilitate the group interviews. At least two members of the research team were present with the facilitator at each of the three sessions to observe and provide assistance and clarification to the facilitator when needed. At the beginning of each session, the facilitator introduced the researchers, who provided brief statements of purpose and commitment. Despite potential response bias introduced through the researchers' presence, benefits included high facilitator confidence and credibility as was group evident through participant comments about how much they appreciated the researchers' interest and commitment to their wellbeing.

Figure 1. Factors Identified by Focus Groups as Affecting the Health of Migrant and Seasonal Farmworkers in East Texas

	Behavioral	Psychological	Health Service Access/Treatment	Environmental	Social/Economic
Common to All Three Groups	▪ Poor diet/nutrition ▪ Substance abuse ▪ Unprotected sex ▪ Poor prenatal care ▪ Unsafe equipment operation ▪ Little sleep ▪ Delayed treatment	▪ Fear in daily life situations ▪ Fear of INS	▪ Undocumented status ▪ Lack of insurance	▪ Poor housing ▪ Crowded living conditions ▪ Toxin exposure ▪ Climate exposure	▪ Poverty ▪ Language barriers ▪ Lack of transportation ▪ Lack of education
Migrant & Seasonal Farmworkers Groups Only	▪ Use contaminated water ▪ Smoke/eat near chemicals ▪ Don't seek safety info	▪ Feel pressured to work quickly ▪ Believe employers don't care ▪ Anger (general)	▪ Cost of medication and treatment ▪ Don't know what's available	▪ Unfamiliar work environments ▪ No danger warnings or labels in English ▪ Unsafe electrical wiring	▪ Medication and treatment too costly ▪ Poor family relationships ▪ Can't supervise children ▪ Nothing to do
Social Service Providers Group Only	▪ Lack of exercise ▪ Not using seatbelt	▪ Stress from local expectations to speak English ▪ Culture shock	▪ No prenatal care ▪ No vision/hearing care ▪ Little Spanish language health care info	▪ Poor sanitation ▪ Exposure to diseases	▪ Racism ▪ Social isolation ▪ Don't know responsibilities/rights ▪ The media
Health Care Providers Group Only	▪ Poor hygiene ▪ Uncontrolled family size ▪ Domestic violence ▪ Suicidal behaviors	▪ Anxiety & depression ▪ Poor self-esteem ▪ Denial & anger ▪ Overwhelmed with info	▪ Lack of immunizations ▪ Medical non-compliance ▪ Untrained healers ▪ Home remedies ▪ Low resource awareness	▪ Type of labor	▪ Illiteracy (Eng/Span) ▪ Violation of civil rights

Due to low Spanish and English literacy levels among participants, and a general reticence to speak frequently in a group interview environment, the methodology used for these interviews was markedly different from those used for the previous two groups. All materials and discussions were conducted in Spanish at a fourth-grade comprehension level. The bilingual facilitator read aloud in Spanish the informed consent forms and answered questions before the forms were signed. Then, a series of eight questions were posed to the group, with in-dividual oral responses collected in round-robin fashion for each question so that each participant was given an opportunity to provide an individual response. If an individual chose not to respond to a specific question, the facilitator moved to the next respondent. An open group discussion of all questions, responses, and related issues followed the round-robin questioning phase.

The modified questioning protocol usurped the full two-hour limit established by the research team for all group interviews. For this reason, the MSFW groups were not asked to categorize their responses. The research team later matched these responses with the categories identified by the health care and social service providers.

RESULTS

Results of Qualitative Assessment

Figure 1 contains a summary of interview responses that were common to all three stakeholder groups interviewed (health care providers, social service providers, and MSFWs) or were unique to each of the groups. The first four categories (Be-

havioral, Psychological, Health Service Access/Treatment, and Environmental) were created by the health care provider group and were also used by the social service group. The social service providers created the fifth category, "Social/Economic," to which the researchers later assigned some health care provider responses as deemed appropriate. The researchers also assigned all MSFW responses to one of the five categories.

Behavioral Factors. According to all three stakeholder groups, the most common behavioral risk factors practiced by local MSFWs were poor dietary practices, substance abuse, unprotected sex, poor prenatal care, unsafe equipment operation, little sleep, and a delay in seeking treatment for health problems. Some behavioral factors uniquely identified by each group related to unprotected sex ("uncontrolled family size" [health care providers]) and unsafe equipment operation ("don't seek safety info" [MSFWs]). Other responses that were unique to each stakeholder group appeared to represent the unique perspectives of that. For example, MSFWs focused primarily on work-related behaviors, while health care providers focused on broader health-related behaviors such as domestic violence.

Psychological Factors. All three stakeholder groups identified fear as a common psychological contributor to health problems among MSFWs. Fear of being singled out for investigation by the U.S. Immigration and Naturalization Service (INS) (recently renamed the U.S. Citizenship and Immigration Services) [http://uscis.gov]) was said to be common among both undocumented and documented MSFWs. Daily fears related to discrimination, job loss, and an uncertain future were discussed in all groups. The MSFW group expanded upon this theme with descriptions of how they and their co-workers often felt pressured by their employers to work faster and more efficiently in work environments that were sometimes unfamiliar to them. They felt that few of them were provided proper work training or a clear orientation to work expectations, and that their employers cared little about their well-being.

Though the MSFW participants did not elaborate in their interviews on the general anger that many of them identified as a common factor affecting their health, input from the health care and social service groups provided potential insights. These professionals described a pervasive prejudice among local residents against MSFWs. Demands that they speak English and conform to the local culture fostered culture shock, depression, and low self-esteem. They also felt that this population was overwhelmed by the information provided to them on health care and other services, particularly in view of their language and low literacy issues

Health Service Access/Treatment. The undocumented status of some MSFWs and a prolific lack of insurance were identified by all groups as primary barriers to health service access and treatment The MSFWs expressed frustration with treatment costs and their own lack of knowledge about their eligibility for services. While the social service providers pointed out service gaps in prenatal, vision, and hearing care, and a lack of Spanish-language health care information, the health care providers focused more on low immunization and compliance behaviors among MSFWs. The preferential use of potentially ineffective or dangerous home remedies and untrained folk healers were also identified by the health care group.

Environmental Factors. Environmental factors that were identified represented to physical aspects of MSFW working and living conditions. Crowded living quarters with faulty or non-existent sanitation, ventilation, and heating/cooling systems exposed MSFWs to a number of related health problems. Unfamiliarity with (and lack of Spanish-language warnings about) dangers and needed precautions in the work environment often exposed MSFWs to chemical toxins, injury-prone tasks, and health-threatening weather conditions.

Social/Economic Factors Poverty, lack of insurance, and lack of transportation were identified as major barriers to proper health care and resource access. Low education levels, accompanied by low literacy

skills in both English and Spanish, were said to create language barriers and difficulties in understanding complex health-related information and health-care systems. In addition, the MSFW participants said they felt isolated from families still in Mexico and even from local family members because long working hours and situational stress blocked their ability to appropriately supervise their children and foster positive family relationships.

Partnership Outcomes

One of the goals of this study was to establish long-range community-based partnerships for future CBPR research. One related outcome of this study as been the establishment of a coalition lead by health care and social service providers who participated in the original group interviews. The focus of the coalition is on developing avenues through which health care and social services can be made more readily accessible to MSFWs in the designated area. This group is currently seeking assistance in grant writing and considering needed next steps for further assessment and health interventions.

Another study-related outcome is the further involvement in health education efforts on the part of MSFW group facilitator. The commitment of this community gatekeeper as a trained facilitator served as a significant capacity-building element of this CBPR study. This individual traveled with the research team to a research conference that focused on health issues among MSFW to help present the assessment results of this study. This person participated in promotora/community health worker training sessions offered at the conference and, upon her return to the community, partnered with a local public health nurse to host health education seminars in her home for interested MSFWs. The public health nurse and this facilitator also worked through a local church leadership group to implement an enumeration study of MSFWs living and working in the designated area.

Future plans include the further development of community partnerships through

which MSFWs, health care provides, and social service providers in the community can work together to address health care and health education needs. Grant-writing efforts are currently underway.

DISCUSSION

CBPR and Methods

A major challenge of CBPR is to truly involve the community in decisions related to research design and data collection methods while maintaining an appropriate level of methodological validity and reliability.[12] Though there is no mandate within the CBPR model that specific research methods be used,[11] the partnering community can only engage in the research process if the language and techniques used are compatible with communication styles and problem-solving approaches common to that community.[11]

The diversity of the three stakeholder groups regarding communication styles and discussion group experience called for a less traditional approach to NGT protocols. Use of group-specific protocols is consistent with the principles of action research,[11] a research paradigm in which validity is not dependent upon the replication of rigid criteria but, rather, on the degree to which the researchers aptly adapt methods to make them more functional and the emerging results more accurate. Action research is widely accepted among CBPR supporters because it more readily engages stakeholders in participatory research.[11–12] It is also beginning to gain credence in broader, more traditional research circles.[11,20]

The modifications made in the NGT sessions for both professional groups were very similar to those used by other researchers[18, 21–22] and, when participants were verbally asked at the end of each session for input regarding how to improve the process in the future, they expressed satisfaction and comfort with the methods and resulting responses. Though one would expect some participant groups to refrain from criticizing the experience to the face of its implementers, these trained professionals had not hesitated to ask tough questions and express skepticism in preliminary meetings. The fact that these same individuals were complementary about the NGT experiences and enthusiastic about the outcomes is noteworthy.

The adapted NGT protocol resulted in a greater number of responses from each of three groups of MSFWs (male, female, and mixed) than had been observed in earlier community interactions; however, some participation differences were noted when comparing the all-male interview to subsequent all-female and gender-mixed interviews. Discussions within the male-only group were more stilted than for the female-only group, and the mixed-gender group had the most active discussions. The gender-mixed protocol was actually added after the facilitator conducted the male-only group and suggested to the research team that a gender-mixed approach might help male participants feel more at ease. The participants of the gender-mixed group indicated to the facilitator that they preferred that approach to one that was gender specific. The round-robin protocol used by the facilitator seemed to minimize potential domination of any discussion on the part of any gender-specific group.

It is not totally clear that the positive end-of-session feedback provided by MSFW participants was genuine. The traditional norms of many Hispanic communities call for respect for authority. It is also possible that internalized racism and/or repressive and productive power issues may have influenced their responses.[11] However, as is discussed later in this section, the participants spoke freely about various aspects of institutionalized racism as part of the factors that influence health in their community. This free-flowing discussion would appear to indicate that the participants felt safe and at ease with the NGT methods used.

Precautions Related to Sampling and Interpretation

Prior to a discussion regarding study results, some explanations and cautions related to group sampling and response interpretations are in order. The snowballing technique used for participant sampling in this study is a recommended approach when working in "hard to reach populations" that have no identifiable sampling frame (i.e., no identifiable list of all potential participants from which to sample).[25] When trust of outsiders is low, the snowballing technique can help researchers tap into information that would not otherwise be accessed. However, though snowballing may be the best available method in these communities, the external validity of interview results may be compromised and the degree to which volunteer participants truly represent the larger population should always be viewed with caution.

Another cautionary note to consider regarding the sampling techniques used in this study relate to the fact that a small number of diverse subgroups was sampled within the community. Sampling across diverse stakeholder groups and creating a composite of responses is referred to as "heterogeneity sampling" or "sampling for diversity."[25] This approach is recommended when the goal is to obtain a universal picture of diverse community-wide perspectives, a perspective that can be useful in CBPR research where the goal is to overcome barriers and developed partnerships and connections among community stakeholders. However, this approach differs from the more commonly recognized method of interviewing a large number of community members from one homogenous subgroup to identify perspectives common to that single group.

Despite potential threats to external validity, the sampling methods used in this study are recognized as valid approaches for their intended use.[25] The results provided the research team with access to a population group that would have been largely inaccessible without using the trust-building snowballing technique. Heterogeneity sampling across diverse stakeholder groups resulted in information that could be used in future capacity-building health intervention efforts.

Differences Across Stakeholder Groups

The differing perspectives found across

stakeholder groups mirrored differences found in other community collaboration projects.[26] The university research team was interested in assessment outcomes that identified health behaviors and related factors that could be later addressed in health promotion interventions. The health care providers were largely concerned about low treatment compliance among their MSFW clients and how to expand health care services to the hard to reach within that community. The social service providers placed greater emphasis on the economic and social barriers faced by area MSFWs, and proposed a focus on providing community social centers and activities. The challenge lay in consistently nurturing a collaborative approach that maintained steady progression toward the common goal of enhancing the quality of life of MSFWs. The research team worked diligently to keep that goal in the minds of all stakeholders throughout this initial phase of the project, and to consistently communicate to all involved how the results of each step moved the group closer to goal achievement.

The questions posed within early interviews and subsequent NGT sessions were designed to identify negative health-related behaviors practiced within the community. Though this approach was sound methodologically, using research questions that focused on community assets instead of needs may have hastened our progress toward our eventual goal of capacity building.[11] The researchers did, however, invite participants at the end of each session to identify programs and characteristics within the community that were currently addressing some needs and could contribute to capacity building efforts, and asset identification and capacity-building discussions have been implemented since the conclusion of this initial assessment effort.

Apparent differences in responses and perspectives between the two provider groups may have been influenced by differences in professional focus. The primary goal of the social service providers was to help MSFWs adapt to their environment and tap into social service resources. They

were keenly aware of barriers to such services as prenatal care, vision and hearing care, and health care in general.

While the social service providers were more apt to point to a breakdown in local systems that fail to provide what is needed, the health care provider group seemed to focus more on choices and behaviors of the MSFWs as they interacted with health care providers. They expressed frustration with MSFWs who did not follow up on medical referrals or treatment protocols, who tended to rely on home remedies and untrained folk healers, and who refused to come in for immunizations. These health care provider participants recognized contributing environmental factors such as crowded living conditions and toxin and climate exposure, but also expressed frustration with behaviors that they believed to be within the control of the MSFWs in relation to those conditions such as poor hygiene and uncontrolled family size.

Though the MSFW participants talked about systematic and environmental factors that were beyond their control (e.g., discrimination and lack of resources), they readily owned responsibility for their behaviors during their discussions. For instance, statements about unsafe use of work equipment were coupled with the observation that few MSFWs seek information about how to properly use the equipment before doing so. Several implied that, though many were aware of risks associated with smoking and eating near chemicals at work and drinking contaminated water, those behaviors persisted. In one MSFW interview session, the discussion turned to possible solutions to this problem, with an emphasis placed on the need to convince MSFWs that these behaviors posed an even greater health risk than the use of unsafe equipment because of the greater frequency of exposure to these elements on a daily basis. On several occasions, the MSFWs expressed a desire to gain access to information and skills that would allow them to take responsible actions for enhancing their own well-being. The general perspective appeared to be one of wanting to broaden

awareness of factors that placed the MSFW community at greater health risk, and to develop, for themselves, potential solutions.

IMPLICATIONS AND CONCLUSION

Foremost in the implications derived from this preliminary assessment and community collaboration project is the need to exert considerable effort in communication with all stakeholders throughout the process. Though this recommendation is a broadly accepted approach to community health,[27] it cannot be overly emphasized when members of the community and the providers who serve them are not attuned to the inherent rigors and long-range benefits of needs assessment and research projects.

Another recommendation is to preserve community trust and involvement while maintaining needed research protocol. Marginalized populations are sometimes deemed "hard to reach" because they do not appreciate the potential benefits to them of their involvement in research activities.[27] They sometimes turn away from participation due to distrust of outsiders. Community trust must be the ultimate priority, and research methods must be adapted to the extent possible to develop and preserve that trust.[16] The adapted methods described within this study may serve as the first steps toward developing a model for this.

Thirdly, tailoring the NGT process to match participant needs appears to be a useful way to facilitate CBPR partnerships and assess the perspectives of multiple stakeholder groups. This flexible approach can uncover valuable insights and diverse perspectives that might otherwise remain hidden when the power bases of various stakeholders differ across groups.[11] It is also in keeping with the emergent choice points approach of action research that is so widely accepted in the field of CBPR.[11] Thus, the modified NGT approaches used in this study may help answer the call[28] for reliable community based methods.

Of all of the information derived from study findings, perhaps the most significant was that stress may be a primary factor influencing the health and wellbeing of this

at-risk population.[29–30] The fact that poverty, low literacy, and unsafe work and living environments are contributing factors among MSFWs is not a particularly new revelation.[2,31] However, few health researchers have focused on stress management as a primary health intervention effort among MSFWs. The results of this study are an indication that more research is needed to more closely examine the role of stress and how to address it to promote MSFW health.

The study results also emphasize the need for empowerment in this and other medically underserved U.S. populations.[32–33] It is a mistake to assume that MSFWs solely blame faulty systems for their health problems and prefer to have others create solutions for them. The participants of this study asked to be trained to implement their own health promotion efforts.

Long-range planning and the careful development of strong community-based partnerships can result in an effective capacity-building process.[34–35] The partnerships between MSFWs, health and social service providers, and university researchers that were forged in this study provide hope for the future of this MSFW community.

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