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REVIEW OF COMMUNITY-BASED RESEARCH: Assessing Partnership Approaches to Improve Public Health

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ABSTRACT

Community-based research in public health focuses on social, structural, and physical environmental inequities through active involvement of community members, organizational representatives, and researchers in all aspects of the research process. Partners contribute their expertise to enhance understanding of a given phenomenon and to integrate the knowledge gained with action to benefit the community involved. This review provides a synthesis of key principles of community-based research, examines its place within the context of different scientific paradigms, discusses rationales for its use, and explores major challenges and facilitating factors and their implications for conducting effective community-based research aimed at improving the public's health.

INTRODUCTION

Historically, the field of public health has examined environmental and social determinants of health status (54, 95, 132, 165, 174, 179, 182, 186) and involved the public itself in identifying and addressing public health problems (89, 127, 165). More recently, research aimed at creating knowledge about health and disease has been emphasized, often using the randomized clinical trial as the "gold standard." This research has tended to stress individual

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rather than social or environmental risk factors, and to separate researchers and public health practitioners from the public at-large as the health "experts" (55, 84, 95, 115, 132, 173, 174). The emphasis on individual-level risk factors tends to obscure the contributions of social and environmental conditions to health and disease, most visible in the growing gap between the health status of rich and poor, white and non-white (95, 96, 195). Furthermore, although such research has contributed to increased knowledge about public health issues and improved health status, there is often a gulf between that knowledge and its application (21, 145).

Recognition of the inequities in health status associated with, for example, poverty, inadequate housing, lack of employment opportunities, racism, and powerlessness (83, 85, 90, 95, 96, 195), has led to calls for a renewed focus on an ecological approach that recognizes that individuals are embedded within social, political, and economic systems that shape behaviors and access to resources necessary to maintain health (13, 58, 95, 96, 100, 115, 169, 171, 174, 175, 195, 197). Researchers and practitioners alike have called for increased attention to the complex issues that compromise the health of people living in marginalized communities (87, 195); for more integration of research and practice (21, 145); for greater community involvement and control, for example, through partnerships among academic, health practice, and community organizations (36, 48, 61, 71, 83–85, 103, 121, 125, 197); for increased sensitivity to and competence in working within diverse cultures (9, 112, 113, 118, 160, 161, 185); for expanded use of both qualitative and quantitative research methods (61, 84, 107, 132, 164, 173), and for more focus on health and quality of life (3, 30), including the social, economic, and political dimensions of health and well-being. These calls for a more comprehensive and integrated approach to research and practice in public health have been voiced in major national reports [e.g. *The Future of Public Health* (145), *Healthy People 2000* (72) and *Health Professions Education for the Future: Schools in Service to the Nation* (135)]. They have also been translated into funding initiatives and policy statements by a number of private foundations and federal and international organizations.[1]

[1]Examples include: the W.K. Kellogg Foundation's Community-Based Public Health Initiative (194); the Henry J. Kaiser Family Foundation's Community Health Promotion Grant Program (59, 178); the Robert Wood Johnson Foundation's America's Promise; the Pew Charitable Trusts' support of Community-Campus Partnerships for Health (25); the Center for Disease Control and Prevention's Urban Center(s) for Applied Research in Public Health Initiative (19); the National Cancer Institute's Plan for Cancer Prevention and Control Research among American Indians and Alaska Natives (124); the U.S. Office of Disease Prevention and Health Promotion's Healthy Communities Initiative (50); and the World Health Organization's Healthy Cities Initiative (30, 199). In addition, the Royal Society of Canada recently commissioned a study to examine the status of, and to make policy recommendations to further develop participatory research in health promotion in Canada (61).

This combination of critical reflection within public health and new opportunities for funding has given rise to a number of partnership approaches to research and practice, variously called "community-based/involved /collaborative/centered-research" (7, 16, 23, 24, 30, 36, 38, 42, 44, 81, 121, 125 , 155, 156). At the same time, a large literature spanning the social sciences has examined approaches to research in which participants are actively involved in all aspects of the research process. Examples include "participatory research" (31, 61, 68, 110, 128, 167, 168, 176), "participatory action research" (43, 193), "action research" (15, 29, 79, 104, 133, 172), "action science/inquiry" (5), "cooperative inquiry" (141, 143), "feminist research" (110, 119), "participatory evaluation" (190), and "empowerment evaluation" (47). Despite differences among these approaches (e.g. 143, 167, 168), each is explicitly committed to conducting research that will benefit the participants either through direct intervention or by using the results to inform action for change.

The renewed interest in the "rhetorics and realities" of community-based approaches to public health in the past few years (105) has highlighted community-based research as one of many viable approaches to the development of knowledge and action in the field of public health. This article examines lessons to be learned from the interdisciplinary pool of knowledge about conducting collaborative or participatory forms of research, and from the experience of public health researchers, practitioners, and community members working in what is referred to here as community-based research in public health. Rather than attempt an exhaustive review of the literature mentioned above (e.g. 56, 61, 110, 142, 144, 199), this article draws on the literature on community-based and related forms of research, the authors' experiences with community-based research, and related literature on community-based interventions, coalitions, and community organizing (e.g. 30, 57, 121, 170, 188, 189) with the aim as follows: to synthesize key principles or characteristics of community-based research; to examine community-based research within the context of different scientific paradigms; to discuss rationales for its use; and to explore challenges and facilitating factors and their implications for conducting effective community-based research aimed at improving the public's health.

MULTIPLE WAYS OF KNOWING: ALTERNATIVE INQUIRY PARADIGMS

The past several decades have seen considerable discussion of the construction of scientific knowledge. Debates have centered around different paradigms—basic sets of beliefs about the nature of reality and what can be known about it, the relationship between the knower and what is known or knowable, and how the knower can find out what can be known (63–65, 97, 110, 141, 144). Within

the field of public health the positivist paradigm, which emphasizes a static, objective knowledge that is separate from the knower, has been dominant. From the positivist perspective, a single reality exists independent from the inquirer's interest, operating according to a set of laws that take a cause-effect form. The inquirer is able to remain distant and value-free from what is being studied, and methods must be used that control for context (confounding variables) and allow for predicting phenomenon (64). This paradigm has influenced the development of research processes that elevate the presumed objectivity of scientific knowledge over subjective or experiential knowledge. This emphasis on objectivity and expertness underlies the separation of research from practice in the field of public health. An extensive literature examines the limitations of the positivist paradigm, with direct relevance to the present discussion of community-based research.[2]

Guba & Lincoln (65) describe three alternative inquiry paradigms, "postpositivism," "critical theory et al" (a blanket term for several alternative paradigms, e.g. feminism, participatory inquiry), and "constructivism." The latter two paradigms are particularly applicable for community-based research. From the critical theory et al perspective, a reality exists that is influenced by social, political, economic, cultural, ethnic, and gender factors that crystallize over time; the researcher and the participant are interactively linked; findings are mediated by values; and the transactional nature of research necessitates a dialogue between the investigator and participants in the inquiry (65). From the constructivist paradigm, there exist multiple, socially constructed realities that are influenced by social, cultural, and historical contexts; the inquirer and participant are connected in such a way that the findings are inseparable from their relationship; and the methods used emphasize a continual dialectic of iteration, analysis, assessment, reiteration, and reanalysis (64).

It is important for researchers and practitioners to be aware of the different paradigms and how they guide their work. Although they are most often presented as dichotomies, suggesting an either/or choice between, for example, positivist and constructivist paradigms, House argues that the "choice does not have to be between a mechanistic science and an intentionalist humanism, but rather one of conceiving science as the social activity that it is, an activity that involves considerable judgment, regardless of the methods employed" (77, p. 19).

Community-based research draws upon constructivist and critical theoretical perspectives that address some of the criticisms of positivist science. Specific research methods are determined by the purpose of the study, how the information

[2]Owing to space limitations, this literature is not discussed in detail here. See the section on *Rationale* below for a brief discussion and References 22, 46, 56, 62, 67, 75, 76, 84, 93, 109, 110, 123, 155, 156, 165, 173, 176, 199 for further examination of this topic.

is to be used, the context and setting, the theoretical perspectives—including "local" theory, the applicability of measurement tools, and the input of community participants (78, 84, 115). Thus, both quantitative and qualitative methods may be employed to develop an understanding of the phenomenon under study.

COMMUNITY-BASED RESEARCH: OVERVIEW

The term "community-based research" is used in many ways, and other terms such as "community-wide research," "community-involved research," and "community-centered research" are sometimes used interchangeably. Consistent with constructivist and critical theory paradigms and their emphasis on the socially created nature of scientific knowledge, a fundamental characteristic of community-based research as defined here is the emphasis on the participation and influence of nonacademic researchers in the process of creating knowledge. A critical distinction is the extent to which community-based research emphasizes conducting research in a community as a place or setting—in which community members are not actively involved—versus conducting research with a community as a social and cultural entity with the active engagement and influence of community members in all aspects of the research process (71, 155).[3]

Community-based research in public health is a collaborative approach to research that equitably involves, for example, community members, organizational representatives, and researchers in all aspects of the research process. The partners contribute "unique strengths and shared responsibilities" (61, p. 12) to enhance understanding of a given phenomenon and the social and cultural dynamics of the community, and integrate the knowledge gained with action to improve the health and well-being of community members (36, 41, 71, 155).

The following presents a set of principles or characteristics that seek to capture the key elements of this approach based on the present state of knowledge in the field. These principles will continue to evolve as further community-based research is conducted and evaluated. They are presented with the recognition that the extent to which any research endeavor can achieve any one or a combination of these principles will vary depending on the context, purpose, and participants involved in the process. Each principle may be located on a continuum, with the principle as described here representing a goal to strive to achieve, for example, equitable participation and shared control over all phases

[3]The label "community-centered research" (38, 160) is probably more accurate and less ambiguous in reflecting the emphasis on the social and cultural elements and the role of the community at the center of this approach, but given the widespread use and recognition of the term "community-based research" it will be used here.

of the research process (26, 35, 61).[4] Although presented here as distinct items, community-based research is an integration of these elements.

KEY PRINCIPLES OF COMMUNITY-BASED RESEARCH

1. Recognizes community as a unit of identity The concept of community as an aspect of collective and individual identity is central to community-based research. Units of identity, for example, membership in a family, friendship network, or geographic neighborhood, are all socially constructed dimensions of identity, created and recreated through social interactions (71, 163, 166). Community is characterized by a sense of identification and emotional connection to other members, common symbol systems, shared values and norms, mutual—although not necessarily equal—influence, common interests, and commitment to meeting shared needs (83, 92, 150, 166). Communities of identity may be centered on a defined geographic neighborhood or a geographically dispersed ethnic group with a sense of common identity and shared fate. A city or other geographic area may not be a community in this sense of the term, but rather an aggregate of people who do not share a common identity, or may contain several different and overlapping communities of identity within its boundaries. Community-based approaches to research attempt to identify and to work with existing communities of identity, and/or to strengthen a sense of community through collective engagement (83, 172).

2. Builds on strengths and resources within the community Community-based research seeks to identify and build on strengths, resources, and relationships that exist within communities of identity to address their communal health concerns (116, 117, 120, 166). These may include skills and assets of individuals (117), networks of relationships characterized by trust, cooperation and mutual commitment (80), and mediating structures within the community such as churches and other organizations where community members come together (8)—resources that have recently been referred to as social capital (138; SR Smith, unpublished manuscript). Community-based research explicitly recognizes and seeks to support or expand social structures and social processes that contribute to the ability of community members to work together to improve health.

3. Facilitates collaborative partnerships in all phases of the research Community-based research involves a collaborative partnership in which all parties

[4]See the guidelines for participatory research in health promotion by Green and his colleagues (61) which are intended to be used to assess the extent to which proposed projects meet participatory research criteria.

participate as equal members and share control over all phases of the research process, e.g. problem definition, data collection, interpretation of results, and application of the results to address community concerns (9, 32, 38, 61, 71, 81, 82, 102, 106, 111, 122, 126, 128, 155, 160, 172). Communities of identity contain many individual and organizational resources, but may also benefit from skills and resources available from outside of the immediate community of identity. Thus, community-based research efforts may involve individuals and groups who are not members of the community of identity. Such partnerships may include representatives from health and human service organizations, academia, community-based organizations, and the community-at-large. These partnerships focus on issues and concerns identified by community members (10, 32, 56, 61, 71, 106, 134, 160, 172), and create processes that enable all parties to participate and share influence in the research.

4. Integrates knowledge and action for mutual benefit of all partners Community-based research seeks to build a broad body of knowledge related to health and well-being while also integrating that knowledge with community and social change efforts that address the concerns of the communities involved (61, 83, 109, 110, 128, 143, 155, 160, 172). Information is gathered to inform action, and new understandings emerge as participants reflect on actions taken. Community-based research may not always incorporate a direct action component, but there is a commitment to the integration of research results with community change efforts (155) with the intention that all involved partners will benefit (32, 61, 101, 134, 143, 155).

5. Promotes a co-learning and empowering process that attends to social inequalities Community-based research is a co-learning and empowering process that facilitates the reciprocal transfer of knowledge, skills, capacity, and power (9, 10, 32, 42, 53, 83, 99, 106, 126, 147, 155, 160, 172). For example, researchers learn from the knowledge and "local theories" (40) of community members, and community members acquire further skills in how to conduct research. Furthermore, recognizing that socially and economically marginalized communities often have not had the power to name or define their own experience, researchers involved with community-based research acknowledge the inequalities between themselves and community participants, and the ways that inequalities among community members may shape their participation and influence in collective research and action (11, 110, 199). Attempts to address these inequalities involve explicit attention to the knowledge of community members, and an emphasis on sharing information, decision-making power, resources, and support among members of the partnership (9, 83, 99, 114, 147, 199).

6. Involves a cyclical and iterative process Community-based research involves a cyclical, iterative process that includes partnership development and maintenance, community assessment, problem definition, development of research methodology, data collection and analysis, interpretation of data, determination of action and policy implications, dissemination of results, action taking (as appropriate), specification of learnings, and establishment of mechanisms for sustainability (1, 45, 71, 83, 102, 144, 162, 172, 176).

7. Addresses health from both positive and ecological perspectives Community-based research addresses the concept of health from a positive model (3, 70, 91) that emphasizes physical, mental, and social well-being (196). It also emphasizes an ecological model of health (13, 38, 58, 62, 70, 83, 95, 115, 155, 169, 171) that encompasses biomedical, social, economic, cultural, historical, and political factors as determinants of health and disease.

8. Disseminates findings and knowledge gained to all partners Community-based research seeks to disseminate findings and knowledge gained to all partners involved, in language that is understandable and respectful, and "where ownership of knowledge is acknowledged" (10, p. 186; 36, 56, 69, 106, 110, 155, 161, 191). The ongoing feedback of data and use of results to inform action are integral to this approach (45, 51, 82). This dissemination principle also includes researchers consulting with participants prior to submission of any materials for publication, acknowledging the contributions of participants and, as appropriate, developing co-authored publications (155).

RATIONALE FOR COMMUNITY-BASED RESEARCH

Many advantages to community-based research noted in the literature are associated with the changing trends and critiques of public health research and practice presented earlier, as well as critiques of the positivist research paradigm. Some key rationales discussed in the literature on community-based research include that it:

Enhances the relevance, usefulness, and use of the research data by all partners involved (14, 28, 151, 156);

Joins together partners with diverse skills, knowledge, expertise and sensitivities to address complex problems (17, 69, 74, 79, 151);

Improves the quality and validity of research by engaging local knowledge and local theory based on the lived experience of the people involved (1, 10, 32, 36, 40, 56, 69, 110, 151, 185);

Recognizes the limitations of the concept of a "value-free" science (34) and encourages a self-reflexive, engaged and self-critical role of the researcher(s) variously referred to as "critical subjectivity" (144) and "informed subjectivity" (200);

Acknowledges that "knowledge is power" and thus the knowledge gained can be used by all partners involved to direct resources and influence policies that will benefit the community (32, 36, 69, 74, 110, 176);

Strengthens the research and program development capacity of the partners (1, 61, 151, 155, 160, 161);

Creates theory that is grounded in social experience, and creates better informed/more effective practice that is guided by such theories (1, 152);

Increases the possibility of overcoming the understandable distrust of research on the part of communities that have historically been the "subjects" of such research (71, 156);

Has the potential to "bridge the cultural gaps that may exist" (14, p. 211) between the partners involved (9, 10, 71, 156, 185);

Overcomes the fragmentation and separation of the individual from his/her culture and context that is often evident in more narrowly-defined, categorical approaches (61, 83, 144, 171);

Provides additional funds and possible employment opportunities for community partners (1, 126, 156);

Aims to improve the health and well-being of the communities involved, both directly through examining and addressing identified needs (37, 61, 71, 155), and indirectly through increasing power and control over the research process (32, 80, 83, 187); and

Involves communities that have been marginalized on the basis of, for example, race, ethnicity, class, gender, and sexual orientation in examining the impact of marginalization and attempting to reduce and eliminate it (32, 56, 71, 95, 110, 185, 195).

As Hatch and his colleagues (71) summarize in their examination of community research partnerships within African-American communities: "the opportunity arises for communities and science to work in tandem to ensure a more balanced set of political, social, economic, and cultural priorities, which satisfy the demands of both scientific research and communities at higher risk" (71, p. 31).

CHALLENGES AND FACILITATING FACTORS IN CONDUCTING COMMUNITY-BASED RESEARCH: LESSONS LEARNED AND IMPLICATIONS

This section provides a more specific look at the factors involved in, and lessons learned from, the actual conduct of community-based research. Most of the materials considered are specific examples of research conducted using a collaborative approach. Examples from related literatures are included, such as participatory action research and cooperative inquiry, because of their similarity to and usefulness in synthesizing issues related to community-based research. The research reviewed involves diverse communities addressing multiple issues, for example, the prevention of cardiovascular disease within an African-American community in Baltimore (102); occupational stress within an automobile plant in south-central Michigan (81, 158); immunization and primary health care in New York City (149); enhancing community capacity in a rural Mississippi Delta community (42); Healthy Start initiative in Boston (137); community empowerment in a multicultural community in Oakland, California (7); prevention of substance abuse in the Jicarilla Apache Tribe in north-central New Mexico (45); and maternal and child health within an African-American community in Detroit (129, 155, 156).

In these examples, the authors frequently discuss challenges, tensions, and barriers, as well as facilitating factors and lessons learned. In many instances, the opposite side of a "challenge" is framed as a "facilitating factor." For example, a history of prior positive working relationships may be considered a facilitator and the absence of such history an impediment. In addition, what some authors discuss in terms of factors that facilitate collaborative research, others suggest as strategies for overcoming challenges or barriers. For example, the joint development of operating norms that foster open communication, mutual respect, and shared decision-making, may be viewed as facilitating factors in their own right, or as recommendations or "lessons learned" in overcoming lack of trust and inequitable power relationships.

For coherence, this discussion is organized into three broad, but not necessarily mutually exclusive categories: (*a*) issues related to developing community research partnerships; (*b*) methodological issues involved in community-based research; and (*c*) broader social, political, economic, institutional, and cultural issues. Within each category, key challenges are examined, followed by a discussion of facilitating factors, lessons learned, and recommendations to address the related challenges. The salience of various challenges and facilitating factors will vary at different phases of the community-based research process (e.g. partnership formation, data collection, data interpretation).

Partnership-Related Issues

CHALLENGES/BARRIERS/TENSIONS A number of challenges, tensions, and barriers discussed in the literature are specifically related to the development and maintenance of partnerships between community members and researchers. Although interrelated, they are disentangled and presented as separate issues in this section.

Lack of trust and respect The most frequently mentioned challenge to conducting effective community-based research is lack of trust and perceived lack of respect, particularly between researchers and community members. A long history of research from which there was no direct benefit (and sometimes actual harm) and no feedback of results to the community has contributed to this mistrust (35, 71, 102, 106, 114, 146, 156), which sometimes develops into anger and suspicion (140; SR Smith, unpublished manuscript). Community members may hesitate to get involved even if researchers are proposing a community-based approach. Once established, trust cannot be taken for granted; researchers must continually prove their trustworthiness (181).

Inequitable distribution of power and control The history and presence of power differentials among researchers, health professionals, and community members is another frequently mentioned challenge. Community members are legitimately skeptical about whether the language of being "equal partners" can become a reality of shared ownership and control (1, 7, 16, 27, 35, 82, 114, 137). Within any community-based research partnership, the distribution of information, time, formal education, and income reflects broader social inequalities structured around race/ethnicity, class, and gender (7). These inequalities affect who attends, who participates, whose opinions are considered to be valid, and who has influence over decisions made (16, 99). They may be exacerbated when meetings are facilitated/led by researchers or health professionals (27, 82). In addition, community groups who have worked with government agencies and universities are likely to be familiar with the hierarchical modes of decision-making in those organizations, and to have few experiences of such organizations having the knowledge, skills, and willingness to share control (16, 137). Furthermore, researchers working within those institutions may encounter unanticipated institutional barriers to their ability to share control. Finally, questions about the feasibility and benefit of shared control on "all" aspects of the research process are also relevant. For example, is it most appropriate to train community members and health practitioners to analyze data, or is it more valuable to focus the use of scarce time and resources on involving them in interpreting and making sense of the data (82)?

Conflicts associated with differences in perspective, priorities, assumptions, values, beliefs, and language Conflicts within a community-based research partnership may occur between members within the same organization (e.g. community-based organization, university) as well as across organizational affiliation. They may be associated with differences in overall philosophy, decision-making styles, values, priorities, assumptions, beliefs, and use of language (16, 82, 139, 155). For example, words such as "ownership of data" and "community-based research" may have different meanings to different members of a partnership, and these different understandings can create conflicts (155). These differences may also be associated with diversity in gender, race, ethnicity, class, age, and sexual orientation (82, 110, 114, 155, 161). For example, conflict may arise when women are involved as equal partners in traditionally male-dominated settings (26, 82), and when one partner makes comments that are considered sexist or homophobic by other partners.

Conflicts over funding Frequently conflict arises over funding. Common questions include: Who is the fiduciary of the funds, how are funds distributed, what is the amount of funds provided to different partners, how are budget-related decisions made, and what happens when funders reduce initial budgets (16, 137)? When universities or health departments are the fiduciary agents, their structured financial systems can make the transfer and reimbursement of funds to community partners into a cumbersome, time-consuming, and seemingly disrespectful process (16, 137).

Conflicts associated with different emphases on task and process The different emphases placed by members of a community-based research partnership on process "versus" task are another potential source of conflict. In some research examples academics have been viewed as more interested in accomplishing the tasks of the project, whereas the community members were seen as more concerned with the processes involved, such as how decisions were made and how relationships were established (16). In other examples, the researcher was viewed as placing greater emphasis on process goals and being sure that everyone's voice was heard, whereas community members wanted to move ahead more quickly with the tasks (129, 137). Rarely is this a matter of focusing on either process or task, rather it is the difference in emphasis among partners that often creates conflicts.

Time-consuming process Numerous issues relate to the time involved in conducting community-based research, particularly the time required to establish and maintain trusting relationships (71, 82, 110, 122, 155, 190). This expenditure of time often goes beyond what is usually perceived as directly related to

the task/purpose of the research, for example, providing transportation, technical assistance, and participating in community events (110, 192). This issue is especially problematic if researchers view community-based research as just another project and are not committed to developing the necessary long-term relationships (16).

Who represents the community and how is community defined Challenges and conflicts also arise related to how the community is defined. Issues may include: the extent to which a sense of community exists; who represents the community; the extent to which community participants are members of community-based organizations and/or more grass-roots groups and how they relate back to those organizations; who in the community is excluded; the extent to which participants from community-based organizations represent and reflect community members; and competition or turf issues between community-based organizations and community groups (7, 60, 82, 106, 129, 130, 137, 156).

FACILITATING FACTORS, LESSONS LEARNED, AND RECOMMENDATIONS: PARTNERSHIP ISSUES Various facilitating factors and strategies have been used in community-based research efforts to address the challenges and barriers raised above. They are presented here as lessons learned or recommendations for establishing and maintaining effective community-based research partnerships. Here again, although discussed as separate entities, they are interrelated.

Jointly developed operating norms One of the most frequently mentioned facilitating factors (although labeled in different ways) is the development by the partnership of operating norms and procedures that are consistent with and reinforce the key elements of community-based research (6, 7, 16, 17, 40, 66, 74, 82, 99, 102, 129, 155, 156, 172, 181). Authors have noted the importance of operating in ways that foster attentive listening, openness, caring, inclusiveness, agreement to disagree, identifying and addressing conflicts, opportunity for all to participate, negotiation, compromise, mutual respect, and equality (7, 16, 66, 114, 137, 155, 156, 158, 172, 181). Emphasis needs to be placed on developing norms and ways of operating that promote understanding and demonstrate sensitivity and competence in working with diverse cultures, e.g. with respect to class, gender, race, ethnicity, age, and sexual orientation (9, 10, 32, 36, 71, 86, 102, 106, 112, 113, 114, 155, 172, 185). For example, establishing norms that encourage respect for group differences and developing mechanisms for constructively challenging group processes that reinforce social inequalities.

Also noted as important is the establishment of a norm of confidentiality among participants, in which topics discussed are not shared outside the

partnership (158). Deciding how decisions will be made, whether by consensus or majority vote (81, 106), and with regard to which issues, for example, budgeting and resource allocation (6), is another important consideration.[5]

The process of establishing such operating norms should follow the norms themselves. That is, they cannot be imposed on a partnership, but must be developed and agreed upon by its members. The extent to which these are formal or informal arrangements should also be decided by each partnership. [See, for example, the Memo of Agreement clarifying what is meant by equal partnership, described by Plough & Olafson (137).]

Identification of common goals and objectives The partnership as an entity needs to identify a common set of goals and objectives (17, 20, 27, 45, 99, 129), recognizing that each involved organization has its own mission, goals, and objectives. Here again, the extent to which these are informal or formal written arrangements should be decided by the group itself.

Democratic leadership The success of a collaborative partnership is determined in part by the extent to which the designated leader(s) fosters democratic processes and decision-making (2, 17, 98, 157, 158). Thus, effective leaders are supportive of and facilitate the implementation of the operating norms discussed above.

Presence of community organizer Critical to the success of the partnership is the presence on the staff of a community-based research effort (particularly one involving an intervention component) of a community organizer who is able to bring together people in the community, who has a history of community involvement, and who is respected and perceived as a leader in the community (122, 156).

Involvement of support staff/team Support staff, who may or may not be university-based, frequently provide the glue to keep the research partnership together. Responsibilities may include informal communication outside of meetings, providing minutes of meetings, gaining input on agenda items, circulating materials, establishing computer linkages, distributing grant-related and other information, and briefing participants who are unable to attend meetings (7, 27, 45, 192).

Researcher role, skills, and competencies The effective community-based researcher is often referred to in the literature as a catalyst, facilitator, co-learner, and/or consultant (52, 82, 161, 172). Researchers contribute their own expertise—while at the same time recognizing the expertise of others—with

[5]Many of these factors are consistent with the research on effective group process and the reader is referred to that literature for further elaboration, e.g., 8, 73, 159.

the aim of establishing interdependency among rather than dependency on any of the partners involved (7, 33, 56, 74). To further establish trust and show commitment, researchers need to spend time in the community on an ongoing basis (49, 140), and at the request of partners, be willing to provide technical assistance that may not be directly related to the specific research effort, e.g. grant writing or questionnaire design for another study. To carry out this role, a community-based researcher needs skills and competencies in addition to those required in research design and methods, for example: listening, communication (e.g. use of language that is understandable and respectful), group process, team development, negotiation, conflict resolution, understanding and competency to operate in multicultural contexts, ability to be self-reflective and admit mistakes, capacity to operate within different power structures, and humility (7, 33, 38, 39, 63, 82, 109, 140, 155, 156, 162, 192).

Prior history of positive working relationships Building upon prior positive working relationships is a viable strategy for conducting community-based research (129, 130, 155). Thus, identifying participants based on pre-existing trusting relationships is an important consideration for developing research partnerships. Such a history may be established through such mechanisms as previous collaborative research endeavors, consultations, student internship programs, conferences, and participation in community-wide coalitions.

Identification of key community members Different facilitating factors or strategies have been suggested for addressing questions related to how community is defined and who represents the community. Several authors mentioned the importance of involving respected community members who have credibility and visibility, and who are well-integrated in their community (6, 20, 99, 102). Obtaining the involvement of members of the "community of identity" in addition to representatives from community-based organizations (who may or may not be of the community) is of paramount importance, recognizing that this involvement may need to occur in ways other than participation on community-based research boards (129, 130, 137, 156). In-depth interviews and analysis of community leadership and decision-making experiences have been suggested as strategies for identifying appropriate community partners (12, 41).

Methodological Issues

CHALLENGES/BARRIERS/TENSIONS: METHODOLOGICAL ISSUES Challenges related to research methodology are discussed here as distinct challenges, even though they are related to each other and to challenges related to the partnership and broader social issues.

Questions of scientific quality of the research Community-based research is continually challenged by questions raised regarding its validity, reliability, and

objectivity for both basic research and evaluation research (35, 45, 71, 82, 101, 102, 155, 156). The predominance of the scientific method in public health makes it difficult to convince academic colleagues, potential partners, and funders of the value and quality of collaborative research (45, 81, 155, 156).

Proving intervention success The success of a particular intervention in a community-based research effort may be difficult to prove (94, 122, 129). For example, such interventions are often conducted in communities with multiple concurrent interventions, and it is difficult to tease out the effects of the particular intervention being evaluated (129). In addition, problems such as those related to few units of analysis, sampling, and migration patterns make it difficult to detect statistically significant effects (122).

Inability to fully specify all aspects of research up-front Given the role of the partners in a community-based research effort and the dynamic community context in which it is carried out, it is not always possible to fully specify up-front all aspects of the research design and intervention (when included) (4, 27, 82, 156). Thus, there is the challenge of selling a process without completely specifying all the outcomes beforehand, often troubling for researchers, health professionals, and community members, as well as funders (see below) (27, 81).

Seeking balance between research and action Creating a balance between research and action that is mutually agreed upon by the partners involved (1, 45, 82, 156, 180) is not a matter of deciding between research versus action, but a question of emphasis and timing (82). Community members are frequently, although not always, more interested in how the data promote community changes rather than using the data to address basic research questions. In addition, community members may not agree on the value of collecting as much data as the researchers might prefer (82, 156, 180).

Time demands The active involvement of all partners in the research process, including questionnaire development, survey administration, and feedback and interpretation of data, exacts a tremendous commitment of time from all participants (82, 156, 162). Community members may well have many other obligations and may perceive some of the issues of concern to researchers (e.g. sample size, generalizability) as less than pressing. Researchers, too, must prepare timely and comprehensible feedback sessions/reports to the community that emphasize action and policy implications, as well as manuscripts for publication and final reports to funders (82, 156, 162). Analysis of data and preparation of such feedback is a lengthy process that often creates frustrations among partners who view it as slowing down the process (82).

Interpreting and integrating data from multiple sources Community-based research often involves collecting multiple types of data (e.g. community-based

survey, in-depth interviews, focus group interviews) from multiple sources (e.g. random sample of community members, key community leaders, agency representatives), which increases the likelihood of differences in the results (26, 183). For example, within a given community men and women and youth may all identify different concerns (26), and community members, community leaders, and health professionals may all identify different priority health concerns (183). Interpretation of these differences and decisions about how to integrate and prioritize the results are a challenge for community partners and researchers alike.

FACILITATING FACTORS, LESSONS LEARNED, AND RECOMMENDATIONS: METHODOLOGICAL ISSUES *Methodological flexibility and different criteria for judging quality* Given the aims and the dynamic context within which community-based research is conducted, methodological flexibility is essential, that is, the use of methods that are tailored to the purpose of the research and the context and interests of the community (32, 35, 36, 61, 69, 71, 112, 126, 156, 160, 172). Several researchers have suggested greater use of qualitative data for evaluating the context and process of community-based research interventions (78, 84, 94, 122, 129, 130). Furthermore, different criteria for judging quality, as well as different techniques for establishing the trustworthiness of data have been proposed (63, 101, 107, 126, 131, 146, 158, 176, 192) such as triangulation, involving multiple sources of data, methods, and investigators (78, 101, 107, 158).

Involvement of community members in research activities The involvement of community members in the actual conduct of the research enhances the quality of the process and the results (42, 102, 106, 146, 149, 156). This may include, for example, involving community members in the development of research instruments (156), as well as hiring and training community members as interviewers for a community-based survey (42, 156).

Conduct community assessment/diagnosis A key factor facilitating the successful conduct of community-based research is the ongoing analysis of community strengths, resources, structure, and dynamics (42, 45, 106, 122, 129, 172). This continual process of getting to know the community enhances the relevance and appropriateness of all aspects of the research and intervention, for example, fostering the development of culturally appropriate measurement tools and the interpretation of the data (41, 42, 106, 129).

Development of jointly agreed upon research principles One strategy for addressing some of the methodological challenges is the joint development of a Memorandum of Understanding or Community-Based Research Principles (2, 129, 155, 156). Such collaborative agreements can specify the parameters around issues such as confidentiality and access to the data.

Conduct educational forums and training opportunities Given that community-based research is a different approach than many researchers, community members, and health professionals are accustomed to, the conduct of educational forums that address both process and methodological issues, as well as advantages and limitations of this approach, can be useful (35, 126, 155). Similarly, more long-term training opportunities are needed (e.g. masters and doctoral degree programs), in which the curriculum covers the knowledge and skills necessary for professionals to be able to conduct community-based research.

Involve partners in the publishing process The involvement of partners in the process of writing and publishing has been suggested as a way to obtain more in-depth discussions, reflection and increased understanding of the methodology, results and overall process of conducting community-based research (82, 180). Community and practitioner partners can be involved, for example, as co-authors in a writing team (155–157), as respondents to initial manuscript drafts (82), or as reactants to preliminary data analysis and interpretations (157).

Create interdisciplinary research teams Given the methodological complexity and diverse skills needed to conduct community-based research, many authors have suggested the use of interdisciplinary research teams (70, 82, 126, 155, 160). This does not mean bringing multiple disciplines together to individually and separately contribute their respective expertise. Rather an approach is taken that integrates across disciplines in which the synergy involved results in a more creative and innovative approach to conducting research.

Broader Social, Political, Economic, Institutional, and Cultural Issues

CHALLENGES/BARRIERS/TENSIONS: BROADER ISSUES Many of the challenges and tensions inherent in community-based research relate to broader social, political, economic, institutional, or cultural issues that shape the partnership and the activities of the members.

Competing institutional demands There are multiple and competing demands on the time and resources available across the partner institutions involved in a community-based research effort (e.g. publishing, grant writing, providing services, increasing community capacity). These larger political and institutional pressures make it difficult for individuals within these organizations to devote the requisite time and energy for a particular community-based research endeavor. For example, individuals from health agencies and community-based organizations often get involved in research without being relieved of other responsibilities (74). Also, while agency and university-based partners are able to consider their involvement as part of their job, for which they are paid and

receive some rewards, community participants without a formal institutional base are often volunteering their time (114, 136). Given these different institutional priorities, and particularly within larger, more hierarchical organizations, it is a challenge for individuals involved in the partnership to keep other staff informed and engaged as needed, and to maintain the support of senior administrators (99).

Risks associated with achieving tenure and promotion within academia Among academics, the most frequently discussed institutional barriers to conducting community-based research are the risks associated with trying to achieve tenure and promotion (16, 18, 61, 82, 114, 126, 140, 155, 156). Most academic institutions confer tenure and promote faculty based primarily on the quantity and caliber of their publications in those journals and with publishers most respected by the academy (which often place greater value on traditional, quantitative, basic research), and on having obtained outside research funding, preferably from a federal granting agency. The time involved in relationship building, jointly developing and implementing the research, collecting and analyzing qualitative and quantitative data, and feeding back the results often means that it takes longer before research results are generated and published in peer-reviewed publications. In addition, the traditional standards upon which the quality of the research is judged, the emphasis on both scholarship and practical relevance, and the difficulties in obtaining funding (discussed below), contribute to making this a high-risk approach for achieving tenure (16, 18, 82, 155).

Expectations/demands of funding institutions Community-based researchers face many barriers in obtaining funding and in meeting the expectations of funding institutions. Green and his colleagues (61), in a survey of 29 participatory research studies in health promotion, found that researchers reported more difficulty obtaining funding for this approach compared to more traditional research efforts. Most granting institutions that fund public health research have established priorities for studies that examine categorically defined physical health problems, involving individualistic intervention approaches (if at all), focusing outcomes on morbidity, mortality, and risk factors, using traditional research designs in which the expert researcher defines the problem and the methods used, and occurring within a specified and limited time frame (122, 191). Such funding priorities are different from both the key principles of community-based research presented here and from the concerns of many community partners (1). In instances where funders have altered their normal priorities and have funded community-based research efforts, the same expectations and parameters that are consistent with a more traditional research paradigm (e.g. researcher control, health status/illness outcome indicators) often still apply (137). In addition, most funding sources have deadlines for grant

submissions that do not allow for the time needed to develop trusting working relationships and collaborative applications (74, 81).

The time frame required for building relationships, conducting a proper community assessment, and facilitating community change requires sustained commitment of financial and personal resources, often longer than what most funders are willing to support (35, 39, 81, 122). For example, both Eisen (39), in a study of 19 empowerment initiatives, and Mittelmark and colleagues (122), in an examination of "exemplar community-based cardiovascular disease health promotion programs," found that no less than and sometimes more than one year was needed to carry out a successful planning and community assessment phase, preparation considered essential to the overall effectiveness of the initiatives. The long time involved in conducting community-based research presents challenges not only in working with funding agencies, but also with the shorter-term expectations typical of health agencies and universities (81).

Political and social dynamics within the community Political and social dynamics within community settings, discussed above, can be problematic. Potential friction can arise over determining who represents the community, competition among community groups, different values among partners, and language and cultural diversity. Community partners are well aware of the history of negative experiences with researchers and agencies, and thus are reluctant to engage in activities that may be perceived as selling out to a university or government agency, for example, or being critical of other community organizations or groups.

Deterrents to institutional, community, and social change As discussed earlier, many political, economic, or cultural factors can impede the institutional, community, and social changes often associated with conducting community-based research. Examples include inequitable distribution of power and resources, history of discrimination across culturally diverse groups, expert models of policy decision-making, and the predominance of a positivist scientific paradigm.

FACILITATING FACTORS, LESSONS LEARNED, AND RECOMMENDATIONS: BROADER ISSUES *Broad-based support: top down and bottom up* The successful conduct of community-based research is facilitated when both the staff representatives and the senior leadership/management of the organizations involved are supportive of the endeavor—in actions and words (1, 4, 81, 158). Such support from the top is critical, for example, in enabling participants to contribute the time necessary, in providing rewards for participation, and in helping effect needed changes identified by the research. In addition, the extent to which

organizational representatives are accountable to their organization and have enough clout within that organization to make decisions also fosters the success of the research and commitment to change (39, 158).

Provision of financial and other incentives Given the many challenges, strategies are needed to ensure that the benefits of involvement in community-based research outweigh the costs (17, 148; SR Smith, unpublished manuscript). Such strategies include financial compensation for all participants involved (i.e. not only the university participants), financial remuneration for institutional commitment and involvement, public events recognizing partner contributions, newspaper coverage of partnership efforts, provision of technical assistance, training and educational opportunities as desired, and letters of commendation sent to organizational leaders and beyond (e.g. health department director and mayor's office).

Actions promoting policy changes A number of examples of actions recommended and taken to facilitate policy changes (e.g. university, governmental, and funding policies) are consistent with and supportive of the conduct of community-based research (60, 61, 83, 154, 156). Several Schools of Public Health have been actively involved in trying to affect the policies on tenure, promotion, and rewards within their respective universities to be more supportive of community-based research (153, 154, 184). Several respected journals have recently devoted theme issues to the topic of partnership approaches to research and practice: *Health Education & Behavior* (formerly *Health Education Quarterly*) (188, 189), *The American Sociologist* (167, 168), and *American Journal of Preventive Medicine* (125). Community-based intervention research efforts have increasingly emphasized influencing policy, regulatory, and organizational issues beyond the local level to facilitate more comprehensive changes (60, 61, 156). Several Foundations have implemented funding initiatives that include initial time and resources for planning and partnership building (1–2 years), accompanied by a commitment to provide more long term funding (4–8 years) (e.g. W.K. Kellogg Foundation, 1992; Robert Wood Johnson Foundation's America's Promise). Furthermore, the potential role of foundations in leveraging governmental funding sources to direct resources to community-based research efforts has been advocated and tried (126).

CONCLUSIONS AND FUTURE DIRECTIONS

The past several decades have seen a resurgence of interest in partnership approaches to research and practice in public health, with an emphasis on community participation and influence in research efforts that are beneficial to the

communities involved. Challenges and limitations of this approach, as well as the factors that facilitate its effective use have been discussed here. Embedded in this discussion are recommendations for addressing partnership-related, methodological, and broader social, political, economic, institutional, and cultural issues associated with this approach. There are clear implications for changes to be made at multiple levels (e.g. individual training, institutional reward structures), within and across the organizations involved (e.g. university, government agency, community-based organization, funding institution) to foster and strengthen community-based research within public health. Green and his colleagues, in their study of participatory research in health promotion in Canada, grouped 45 recommendations from participatory researchers involved in their study into three broad categories, suggesting the need for "legitimizing the field, supporting the field through reform of the funding process, and building the capacity for greater emphasis on participatory action research in the future" (61, p. 55).

Despite the extensive body of literature on partnership approaches to research, more in-depth, multiple case study evaluations of the context and process (as well as outcomes) of community-based research endeavors are needed (84, 158). The results of such evaluations will provide a better understanding of the challenges and facilitating factors raised in this article. In order to assess the effectiveness of a community-based research effort, the key principles or characteristics presented here, along with some of the facilitating factors, could be operationalized and used as criteria for examining the extent to which these dimensions were present in a given project. The guidelines developed by Green and his colleagues (61) for classifying participatory research projects are also useful in this regard.

It has not been the intent of this article to suggest that community-based research is the only or best approach to conducting research in public health. Rather the aim has been to present the key principles, benefits, and lessons learned from experiences with community-based research that show the strength of this approach. The challenges notwithstanding, community-based research offers a means to reduce the gap between theory, research, and practice that has been problematic in the field. This approach is particularly aimed toward working with marginalized communities, whose members experience limited access to resources and decision-making processes. The emphasis is on integrating the generation of knowledge into strategies to provide community and social change.

Community-based research in and of itself will not resolve broader social issues, such as racism and economic inequalities. Differences in beliefs and social inequalities enter into community-based research relationships, just as they do in other forms of research. That they are made explicit in community-based

research, and that the research process attempts to grapple with them and their implications for the construction of knowledge and the development of effective strategies for change, enhances the potential for community-based research to address social inequalities associated with differentials in health status. Community-based research is a viable approach for public health researchers to reaffirm their roots in improving public health as a primary value (173). The long-term commitment and combined efforts and expertise of all the partners involved can expand and refine community-based research approaches, thus contributing to the health and well-being of the communities and institutions involved.

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