Application of Community Engaged and Community Based Participatory Research to Support Military Families

Nathaniel V. Mohatt, Ph.D.[1,2,3]

Sarah Beehler, Ph.D.[1,4,5]

[1]Rocky Mountain Mental Illness Research, Education, and Clinical Center (MIRECC) for Suicide Prevention, U.S. Veterans Health Administration

[2]Department of Physical Medicine and Rehabilitation, University of Colorado Anschutz Medical Campus

[3]Department of Psychiatry, Yale School of Medicine

[4]Department of Family Medicine & Biobehavioral Health, University of Minnesota School of Medicine, Duluth Campus

[5]Center for Healthcare Organization and Implementation Research, VA Boston Healthcare System

Application of Community Engaged and Community Based Participatory Research to Support Military Families

There is a growing recognition of the value of Community Engaged Research (CER) and Community Based Participatory Research (CBPR) for addressing a wide range of scientific questions and with diverse communities.(Wallerstein and Duran 2006, Trickett and Espino 2004, Trickett et al. 2011, Blumenthal 2011) Over the last two decades, community engaged research approaches have gained increasing traction in the National Institutes of Health (NIH), in particular as an effective approach to reducing health disparities.(Wallerstein and Duran 2010, Wallerstein and Duran 2006) The Centers for Disease Control (CDC),(Faridi et al. 2007) Institute of Medicine (IOM),(Hernandez, Rosenstock, and Gebbie 2003, Syme and Smedley 2000) and the Agency for Healthcare Research and Quality (AHRQ)(Viswanathan et al. 2004) have all published recommendations for employing and/or guidance documents on conducting CER and CBPR. Much of the attention stems from a recognition that inequalities in health are closely related to social and environmental conditions.(Israel et al. 1998) CER and CBPR offer new or different approaches to community health research, focused on improving the local and ecological conditions underpinning health, compared to traditional research which is focused on identifying generalizable knowledge.(Israel et al. 1998, Minkler and Wallerstein 2011)

Likewise, there is a budding interest in using CER and CBPR to address persistent health challenges in military populations.(DeVoe, Ross, and Paris 2012, Haynes 2015, Huebner et al. 2009, Shenberger-Trujillo and Kurinec 2016, Hoshmand and Hoshmand 2007) Hoshmand and Hoshmand(Hoshmand and Hoshmand 2007) emphasize the important role that CER and CBPR can play in bridging between the military and civilian settings that service members and their families navigate on a daily basis, whereas Huebner et al.(Huebner et al. 2009) discuss how both

can increase cross-sector community capacity to support military families. Shenberger-Trujillo and Kerinec(Shenberger-Trujillo and Kurinec 2016) identify a number of research to practice gaps and argue that the local knowledge and engagement developed through CER and CBPR can help fill these gaps. Further, there is a growing recognition that the health challenges facing military populations demands a public health approach to intervention, which in turn requires a more locally engaged and community-based intervention strategy compared to clinically situated interventions.(Murphy and Fairbank 2013, Department of Veterans Affairs 2018, Brenner et al. 2018, Knox et al. 2010) The *Strong Families Strong Forces*(DeVoe, Ross, and Paris 2012) program provides an example of how CBPR can be employed to develop a program in support of military family wellbeing from the ground up instead of the top down. These and other examples demonstrate that there is a small but growing body of literature on CER and CBPR with military populations, including both theory driven reviews and intervention studies aimed at reducing disparities in health and care. However, these examples remain infrequent, and the full potential of CER and CBPR for military family wellbeing is yet unrealized.

The purpose of this paper is to provide background to the National Academies of Sciences, Engineering, and Medicine's (the National Academies) consensus study report being prepared by the Committee on the Wellbeing of Military Families. Throughout we differentiate between CBPR, CER, and community engagement (CE) strategies used, for example, in the field of Implementation Science. Overall, our goal is to provide a review of why and how CER and CBPR can benefit military families. We address five questions posed by the committee:

How can CE/CBPR approaches be implemented within and across military settings to:

1. *Expand community engagement in programs that are known to be effective in supporting military family wellbeing*
2. *Develop innovative and localized strategies to increase military family member access to and engagement in relevant programs and services*
3. *Facilitate adaptation of support programs to local contexts*

4. *Support the need for continuity of care across military settings*
5. *Build collaboration with civilian sector systems of care, along with increased capacity to serve military families*

Background

Israel et al.(Israel et al. 1998) draw a distinction between research that treats the community as a site or location of research vs. collaborating with a community in all aspects of research. Many scholars similarly distinguish between community-based research and CBPR, with the defining element being collaboration with a community.(Blumenthal 2011, Green and Mercer 2001, Trickett and Espino 2004) There is a long tradition of community collaboration in research, going back at least as long as anthropologists have conducted observational research while living embedded with a community/cultural group.(Trickett and Espino 2004) Likewise there are many different terms and varying traditions of collaborative research,(Trickett and Espino 2004, Wallerstein and Duran 2008) including for example participatory action research, empowerment pedagogy, liberation research, community-partnered participatory research, and CBPR. Although there are distinctions between how different historical traditions and fields of study apply collaboration, there are also many uniting elements and similarities.(Wallerstein and Duran 2008)

CER and CBPR are applied approaches that emphasize the application of research methods in the service of creating positive community change.(Trickett et al. 2011) CER and CBPR historically emerged out of two traditions—the action research model of Kurt Lewin and empowerment education paradigm of Paulo Freire.(Wallerstein and Duran 2008) In both of these models, collaborative research is a deliberate process designed to create social change. Blumenthal(Blumenthal 2011) identifies two pillars of participatory research stemming from these traditions. First, participatory research is an ethical stance in response to the history of

exploitation of marginalized communities by researchers. Instead of taking from communities, participatory research seeks change and knowledge that is meaningful for and guided by the community. Second, participatory research empowers the community, both in terms of power dynamics relative to researchers as well as in terms of capacity building for future action.

Israel et al.(Israel et al. 1998) identify eight principles of collaborative community-based research; 1) understands the community as a unit defined by a shared identity, not just a location; 2) builds on strengths and resources within the community; 3) facilitates collaboration across all phases of research, including formulating priorities and questions through to interpreting and disseminating results; 4) uses the knowledge gained for social change to address the needs of the community; 5) empowers the community and promotes co-learning, or bi-directional learning between researchers and community members; 6) involves iterative processes of partnership, research, and action to develop sustainability; 7) emphasizes wellness and community ecology, as opposed to individual-level disease models; and 8) ensures that the results are disseminated fairly to all partners.

These historical underpinnings and principles of CBPR highlight that it is a worldview, or stance towards the conduct of research, not a set of methods, tools, or approaches.(Trickett 2011, Muhammad et al. 2015, Wallerstein and Duran 2008, Israel et al. 1998, Trickett et al. 2011) One definition to sum up this orientation is provided by the Kellogg Foundation's Health Scholars Program:

> [CBPR] equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities.(Wallerstein and Duran 2006)

A hallmark of CBPR is collaborating with the people affected by and responsible for the issue being studied.(Jagosh et al. 2012) Further, community empowerment represents one of the primary historical origins of CBPR.(Blumenthal 2011, Wallerstein and Duran 2008, Wallerstein and Duran 2006) As such, CBPR more explicitly seeks to redress power inequalities in relation to those most directly affected by the research,(Allen et al. 2006, Haynes 2015) namely the people whose lives stand to be improved. In CBPR, researchers and community are equals—the term *community as co-researcher* has been developed to express this concept that the community is not being researched by others, but is researching themselves.(Allen et al. 2006) As co-researchers, community members are involved at every stage from project conceptualization through to dissemination. CBPR, therefore, demands first approaching research *in collaboration with* a community. As well, CBPR entails attention and commitment to the community as a unit of identity, community involvement in decision-making, capacity development and empowerment goals, equal privileging of scientific and community knowledge, bi-directional learning, social change and power dynamics, and a concern that the community can sustain what is useful to them.(Trickett 2011, Wallerstein and Duran 2010, Trickett et al. 2011)

This understanding of CBPR reveals the fundamental difference between it and CER or CE strategies. CBPR is not a collaboration or community engagement *strategy*, but a theoretical orientation grounded in a constructivist and action-oriented philosophy of science. The distinction ultimately rests on the questions of who has the power to set the goals of the research program and who decides what counts as knowledge. It is possible and, in fact, common for researchers to collaborate with communities without full commitment to or adherence to the principles and worldview of CBPR.(Schulz, Israel, and Lantz 2003, Trickett and Espino 2004, Trickett 2011) For example, researchers may have a community advisory board that helps with study

recruitment and results dissemination, but has little to no say in the research methods or design. Because this involves community members in carrying out research designed by others, and researchers maintain control over when and how community members are involved, it reflects use of CER to accomplish researcher goals. Such researcher-controlled community engagement reflects incomplete adoption of the CBPR worldview and has been termed "partial paradigm acquisition" by Trickett.(Trickett 1984) In making the CER vs CBPR distinction, we must ask who represents the community and what their goals are. CE strategies do not require an equal, collaborative relationship in respect to defining the problem, methods, results, and dissemination.

We contend that a full embrace of the CBPR worldview is the best way to support military families, while acknowledging that this will require a fundamental shift in the way "things are done." In the pages that follow, we address a series of specific questions designed to investigate how CER and CBPR may support improvements to programs, services, and the system of care for military families. In order to address these questions, we emphasize the distinction between CBPR and "partial paradigm" CER. Furthermore, we acknowledge the important challenge of improving existing services and engagement with military families, while distinguishing the ways in which CER and CBPR can support military families.

There are two separate but related discussions implicit in the questions set forth in this paper: (1) supporting military family wellbeing and (2) improving programs and services to support military family wellbeing (via community-engaged research). The latter discussion centers on goals of improving program effectiveness and service engagement—implementation science offers direction on such goals. CBPR emphasizes collaboration in research and action to improve community wellbeing and is, therefore, optimally suited to supporting military family wellbeing.

Review of Questions

Q1: Expanding community engagement in programs that are known to be effective in supporting military family wellbeing

Implementation science (IS) is well suited to the goal of increasing participation in existing programs for military families. IS identifies strategies to increase implementation of evidence-based programs across settings and populations.(Wallerstein and Duran 2010, Meyers, Durlak, and Wandersman 2012) A critical challenge in delivering services for military families and service members are low service utilization and retention rates.(DeVoe, Ross, and Paris 2012, Hoge et al. 2014, Shenberger-Trujillo and Kurinec 2016) Effective programs will not lead to population-level change if the target population will not engage in the services. From this perspective, community engagement strategies are applied to solve a program problem—low participation in existing military family programs that are expected to be effective. IS, as well as the field of communications and marketing, are best suited to providing answers on how to drive up utilization of a product—in this case increasing utilization of evidence-based military family programs. Community engagement strategies, however, are useful for improving the fit of standardized programs within local contexts. In particular, CE approaches can help shape effective outreach, leverage local resources, tailor programs to the most pressing issues of local families (see next question), and address barriers to services.

Outreach. It is essential to engage community stakeholders, especially those with experience successfully conducting outreach or marketing locally, to create a strategy for marketing a program. However, CE approaches place further emphasis on outreach as distinct from marketing—that is, going to where military families live, congregate, and interact on a daily basis.(Huebner et al. 2009) In addition to reaching out in terms of locations, times, and

alignment with community events, outreach also includes engaging with community gatekeepers who maintain a high degree of authority and trust. Collaborating with key community members, whom others look to for guidance, will improve the broader community's trust in a program.(Wallerstein and Duran 2010) Therefore, assessing local social networks to identify and conduct outreach through key network members may help spread intervention use.(Neal et al. 2011) Lastly, CER emphasizes that meeting service members and veterans where they are is also about understanding local culture and how military connectedness influences their lives and the services they seek.(Kilpatrick et al. 2011)

Leveraging local resources. Another way to look at outreach is to investigate the ways in which leveraging local strengths and resources can improve access. Huebner et al.(Huebner et al. 2009) emphasize the benefits to military families of programs that take a community capacity development approach. Through forming national collaborations, programs such as 4H/Army Youth Development and Operation: Military Kids have been able to create local opportunities to expand programming. In these examples, national military-private initiatives were set up to flex into and expand local services. Improvements in access to care, such as transportation assistance and growth in local volunteers and clubs, emerged from these initiatives ability to increase community capacity. In this same way, CE approaches build off existing local resources to embed service development at the local level, which increases availability and accessibility of programs in the daily lives of military families.

Overcoming barriers. CER can also help develop a stronger understanding of the specific circumstances or concerns of local families that may be hampering access. A common first step in IS and CE strategies to program implementation is assessing the community.(Meyers, Durlak, and Wandersman 2012) CER emphasizes that collaborating with community stakeholders via

mechanisms such as an advisory board can improve the community assessment and enhance community capacity. By understanding local barriers to implementation, programs can develop strategies to remove barriers for families and increase use.(True, Rigg, and Butler 2015) Furthermore, by collaborating with communities to assess barriers and opportunities, researchers can build local capacity to sustain effective outreach and engagement efforts.(Huebner et al. 2009)

CER presents opportunities to identify strategies to increase program participation, whereas CBPR entails reformulating the starting question. A CBPR approach highlights the importance of reflecting on (a) the conditions under which existing programs are effective and (b) the extent to which programs and services play a role in supporting military families. From this perspective, two embedded assumptions are important to address. First, the first assumption that we know which programs are effective at supporting military families. In fact, the IOM and several researchers have lamented the lack of evaluation of such programs, calling for research that is more rigorous.(Medicine 2013, Easterbrooks, Ginsburg, and Lerner 2013) Further, military families are diverse in their wellbeing goals, support needs and resources, and evidence of effectiveness is always context- and culture-bound. Together, this points to a need for caution in assuming what works, why/how, where, when, and for whom. Second, the implicit *theory of the problem* is one of low participation (i.e., more participation in existing programs will lead to greater military family wellbeing). Based on this theory of the problem, one might study the nature and degree of participation needed to improve military family wellbeing. However, there are diverse drivers of wellbeing, suggesting that low participation is at best only part of the problem.

Alternative theories of the problem suggest different research directions and approaches for which CBPR may be valuable. For example, theorizing that military family wellbeing is

misunderstood or misspecified might lead to collaborating with military families to clarify the wellbeing construct and variants across different military subgroups and contexts. Alternately, if existing programs are based on flawed intervention theories (e.g., assuming the mechanisms for developing military family wellbeing are the same as those for non-military families), research might focus on understanding the process and what is similar vs. different in military and civilian families. Finally, there is a critical question about the extent to which programs or services, under the best conditions, contribute to military family wellbeing. For example, medical care only accounts for 10-15% of preventable early deaths.(America 2009) If we assume that programs or services explain 15% of the variance in military family wellbeing, the vast majority of determinants of military wellbeing remain unidentified and understudied. More research is needed to identify and modify these factors, which likely include genetic, behavioral, social, cultural, and structural influences.

CBPR aims to bolster local strengths and resources to build long-term capacity rather than increase program participation. Therefore, to answer from a CBPR perspective, we have to reframe the question as: *How can we conduct research within and across settings (military and non-military) to support military family wellbeing?* This shifts the superordinate goal from program implementation to improving wellbeing, and recognizes that non-military settings also influence military family wellbeing. Further, it highlights the essential need to partner with military families and relevant stakeholders through all phases of research, from problem identification to priority setting to data collection and dissemination. Part of the answer to this reframed question might be developing, implementing, or adapting evidence-based programs, but it seems unlikely military families would identify it as the full answer. Rather, CBPR

assumes answers will depend on local priorities, resources and goals. In this way, CBPR often leads to previously unidentified local issues and unexpected innovations.

Thus, while CBPR is conducive to intervention development, it does not assume that those interventions will take a specific form (e.g., discrete, evidence-based program) nor does it assume that locally developed solutions will generalize to other settings, or populations. For example, depending on local priorities, it may be impactful to create new or alter existing social settings, change community or institutional norms, facilitate interrelationships & interactions between military and non-military institutions, enhance supportive social networks between military and non-military families, educate non-military stakeholders, or place military support personnel in community settings. All of these are "interventions" that can result from CBPR, but they are not, nor do they need to be, evidence-based programs.

Q2: Developing innovative and localized strategies to increase military family member access to and engagement in relevant programs and services?

The question of how CER and CBPR can increase access to and engagement in relevant program and services echoes the above discussion. Increasing access to existing programs is an IS question. From this perspective, community engagement is a tool for solving a preset challenge—namely, insufficient access or use of military family programs that are already in place and expected to be effective. We already address above some of the assumptions and problems inherent in this perspective. CBPR, grounded in the concept of collaboration with the community, requires a reframing of the question. Instead of focusing on increasing access to and participation in existing programs (essentially an IS or marketing question), collaboration with communities is better suited to emphasizing development of innovations and localized solutions to improve military family wellbeing.

Improving access to care may be part of the answer to improving military family wellbeing. However, CBPR does not assume access to existing services is the goal of local military families. Community engagement, as well as outreach and marketing, can help identify local strategies to improve access to services. Yet, this approach still begs the question of for whom increasing access to existing programs is the primary desired objective. For example, the success of the 4H/Army Youth Development Program in expanding the number of 4H clubs,(Huebner et al. 2009) although laudable, still leaves open questions of whether expanded local 4H clubs is a priority for military families. In contrast, a CBPR approach asks: *How can research approaches be used to improve local conditions and wellbeing, and what is the military family's vision of wellbeing?* From this orientation, not only can we collaborate to improve the community's priority outcomes, but we can also increase access to programs that support the community's priorities.

Improved access is a likely outcome of CBPR, but the pathway to achieving it is different. Let's take for example Ellison et al.'s(Ellison et al. 2012) study on post-911 supportive education needs. The recommendations from this study proceeded from a needs assessment with post-911 Veterans. The study does not explicitly address access to educational services; however, a number of the findings highlight important needs and challenges that when addressed would improve access to and engagement in care. For one, the authors found that service members reported having limited guidance and knowledge necessary for navigating the federal (i.e., VA) and local systems. As well, study participants emphasized the important role of connecting to someone with military experience as more important than other similarities (such as age/era of service). Both of these findings suggest a pathway to increase access—improved support in navigating services and guidance from someone who has "been there before" may

help service members to access and engage in educational programs. In a similar fashion, CBPR begins with developing a shared understanding of need and priorities, out of which solutions can be developed that may improve access to and engagement in services.

True, Rigg, and Butler(True, Rigg, and Butler 2015) emphasize how CBPR improves engagement in care through both identifying salient barriers and meeting people "where they are" in terms of their priorities. This establishes three important contexts for improving access. First, the programs and services will be directly responsive to local military family needs, priorities, and culture. Second, local families who participate in CBPR will have a personal stake in seeing the programs succeed and will become important champions to drive up utilization. Third, because the programs will have been developed and implemented through a deliberative process with the local community, they will launch with a greater degree of visibility and credibility to the local community.

Q3: Facilitating adaptation of support programs to local contexts

As with the previous question, implementation science is well suited to adapting programs to local contexts. Detailed recommendations for tailoring programs to different community settings,(Miller et al. 2012) cultures, (Castro, Jr., and Steiker 2010) and populations(Lee, Altschul, and Mowbray 2008) have been published, and IS is fairly well developed in this area. For example, a Dynamic Adaptation Process was developed to take contextual circumstances into account and study adaptations throughout implementation.(Aarons et al. 2012) Other areas of literature can inform assessment of influential aspects of social settings(Tseng and Seidman 2007) and social networks(Neal et al. 2011) to support high quality adaptation to local circumstances. In addition to these kinds of adaptations, programs implemented across military settings need to carefully attend to military culture (e.g., identities, behaviors, language, norms and values) and

the varied ways it may be expressed in different geographic locations (e.g., U.S. vs. abroad, rural vs. urban), subgroups (e.g., active duty vs. reserve component), and settings (e.g., healthcare clinics vs. employment settings, military vs. non-military). The relationship between culture and evidence-based programs is fraught.(Kirmayer 2012, Castro, Jr., and Steiker 2010) Even as more programs are developed specifically for military populations, it cannot be assumed that the same cultural elements will be salient across settings, populations, and issues. The goal is to learn about local contexts in support of program adaptation using community engagement strategies. A central concept in implementation science is identifying core and peripheral components of a program. Once such core and peripheral components are defined, core components are preserved while the peripheral elements can be modified to the local context to improve local relevance and effectiveness. A good community advisory board or well-connected key informants are invaluable for identifying ways in which peripheral components can be tailored to match the local needs and interests of military families. By tailoring program components in relation to military family priorities, families will be more likely to identify the program as meaningful and, therefore, participate.(DeVoe, Ross, and Paris 2012)

As with the previous question, however, this question assumes support programs "work" and that program effects and change mechanisms generalize across populations and contexts with some modifications. It is fundamentally incompatible with the CBPR worldview in that it privileges academic knowledge and methods(Wallerstein and Duran 2010) and limits community involvement to implementing science developed by others.(Trickett 2011) Again, from a CBPR perspective, we need to reframe the question. Instead, it might be: *How can we identify and address local priorities to support military family wellbeing?* CBPR is well suited to answering this question because if its focus on collaboration and co-producing knowledge with

communities. Part of the answer may involve adapting evidence-based support programs and part may not. Rather than presuming adaptation as a starting point, CBPR takes a few steps back to ask: *What are the family and community priorities? Is implementing a program the best way to address an identified community priority? If so, does adapting an existing program or developing one responsive to local priorities and resources make most sense?*

Q4: Supporting need for continuity of care across military settings?

CER and CBPR can both add value in support of continuity of care across military setting. However, there are important distinctions in method and benefit to how CER vs CBPR addresses this need. CER and CE approaches include a variety of tools and methods relevant to enhancing continuity of care. On the other hand, conducting CBPR would entail a ground-up collaborative construction of the care system, and would be most adept at identifying the ways in which continuity of care impacts military family wellbeing.

In CER, the question of how to improve continuity of care across military settings can be established prior to engaging with community members. Similar to how a company will conduct market research to enhance product development, military family services can engage with their stakeholders. Key informant interviews, focus groups, community surveys, town hall meetings, and advisory boards are all examples of methods to engage military families. Through these, we can learn directly from military families about the challenges and issues they face moving through and across different military settings, as well as the ways in which the current system functions well. This information is directly relevant to identifying systems improvements to address needs without inadvertently undermining positive elements of the system of care.

The goal of improving continuity of care across military settings may be accomplished using community-based systems dynamics modeling. System dynamics modeling uses data from

diverse sources to understand interactions and interdependence within a system and predict behavior patterns.(Homer and Hirsch 2006, Hirsch, Levine, and Miller 2007) Community-based system dynamics—a method developed to work collaboratively with community partners on priority action areas—has been conducted successfully with veterans.(Hovmand 2014) A major advantage to systems dynamics modeling is that it allows us to make precise predictions regarding how a change in one area of the system of care will affect other areas. With a system model, we can identify the most effective places within the system of care to intervene to improve specified outcomes, such as continuity of care, while also proactively mitigating possible negative ripple effects on other elements of the system. Systems dynamics is just one example of how CER combining robust research methods with local knowledge can identify strategies to address a problem created by and inherent in a system of care, develop and test hypotheses regarding system change, and improve continuity of care.

Local stakeholders possess knowledge about how programs and services interact, including challenges in continuity of care across military settings. Yet, local families and providers may not possess the authority to control or fix the systems issues they identify. On the other hand, military leadership with the authority to address continuity issues across military systems may remain unaware of the specifics of local issues and, therefore, also of possible solutions. CE approaches, such as systems dynamics modeling, can help military leaders identify challenges and solutions that meet the needs of military families.

Many CE strategies require engaging with stakeholders who represent existing power structures,(Wagenaar et al. 2018) such as program administrators. The knowledge these key stakeholders have is critical to addressing specific questions about existing services, such as improving continuity of care. System leaders hold key information on how the current system

functions. However, CBPR does not assume the current system as the starting point, but instead seeks to understand the needs and priorities of the target community(Wallerstein and Duran 2010, DeVoe, Ross, and Paris 2012)—in this case, military families who will receive family services. CBPR approaches to addressing continuity of care would entail empowering military family voices in research and service development alongside military leadership, service providers, and researchers.(Haynes 2015) All partners maintain equal standing with respect to knowledge sharing and knowledge generation.

In addition to answering questions about military family priorities, CBPR will also improve our knowledge of how the existing power dynamics impede or sustain military family wellness. In particular the power to create knowledge and determine what constitutes an effective program.(Muhammad et al. 2015) In traditional research and service provision, the experts are the academic researchers and program administrators. Whereas CE approaches to address continuity of care challenges focus on collaboration with existing system structures, CBPR will ask: *What are the power structures that determine system priorities and services, what knowledge do military families have that can teach us how to better shape the systems, and how must the system change to better support military family priorities?* A system designed from the ground up by CBPR would likely include improvements to continuity of care, but these improvements will be more precise to where they are needed in order to enhance military family wellness. Furthermore, CBPR is useful to uncovering and rectifying structural and power imbalances that may create barriers to improving continuity of care.

Q5: Building collaboration with civilian sector systems of care, along with increased capacity to serve military families?

Improving coordination of services is critical to improving access, utilization, and outcomes of programs for military service members, especially community dwelling and reserve component.(Murphy and Fairbank 2013) Furthermore, improving the system capacity to serve service members and their families is contingent on building effective cross-sector collaboration.(Huebner et al. 2009) There are a number of models and considerations to help build effective and sustainable collaborations with civilian systems of care with the additional objective of expanding capacity to meet military family needs. Whether one chooses to take a CE approach or conduct CBPR will ultimately depend on the overall goals of the initiative. If the focus is narrowly on collaborating across systems and expanding the capacity of existing programs, CER can offer guidance on how to do this work well. On the other hand, CBPR offers a powerful way to shape community change to maximize benefit to military families.

One way to establishing effective cross-sector collaboration is through the development of community coalitions. The Coalition Action Theory(Kegler and Swan 2011) provides important guidance on the elements of coalition formation and management leading to positive community outcomes. Leadership, staff competence, and diversity of coalition membership are particularly important factors to support coalition capacity, sustainability, and satisfaction.(Kegler and Swan 2011) Similarly, the connectivity between service providers and agencies is a critical element for achieving community health goals.(Varda et al. 2008) Social network analysis can help identify where there is need for more relationship development in the system of care.(Varda et al. 2008) A social network with greater density (more communication between organizations) and greater centrality (a network with a more clearly defined leading organization) are more effective at implementing health programs and policies.(Luke 2005) Coalition development and social

network analysis are well-developed methodologies for building a shared vision and mission, enhancing trust, and increasing cross-sector capacity through sustainable collaboration.

Both coalition theory and interorganizational social network analysis raise a number of questions that could help guide CER to improve collaboration with the civilian sector. For example: *Should the military care system be the central hub of a cross-sector collaboration to enhance system capacity? What level of trust and dependence exists across these sectors, and would increasing contacts and trust between civilian and military providers lead to greater capacity to serve military families?* CER could help advance our understanding of the optimal ways for the military sector to collaborate with the civilian sector. However, these approaches are often limited in their engagement with service consumers. CE approaches often assume that current systems are acceptable to the community and coalitions are typically made of representatives of established organizations.(Wagenaar et al. 2018) Likewise, interorganizational social network analysis looks at how current organizations work together. Therefore, it is possible for community engagement strategies focused on building collaboration and partnership between organizations and agencies to never involve the population receiving services.

By focusing on military family priorities, CBPR may at first glance seem an uneasy fit for quickly answering the specific question of how to improve military-civilian sector collaboration. However, a core feature of CBPR is trust-building between groups that may have historical mistrust.(Duran et al. 2013) Although trust is the key component of good collaboration in CER,(Varda et al. 2008) CBPR represents a unique worldview developed out of the traditions of action and empowerment research with marginalized populations who often mistrust the system.(Wallerstein and Duran 2008) CBPR demands a conscious effort to address and overcome the *mistrust* that exists.(Duran et al. 2013) For example, there may be extant mistrust at a local

level between civilian and military family services, as well as a mistrust on the part of military families with specific service providers or programs. CBPR demands that historical conditions like these be acknowledge up front,(Duran et al. 2013) so that the context can develop within which military families feel safe and free to clearly articulate their challenges, issues, priorities, and needs. Moreover, the CBPR worldview emphasizes that meaningful collaboration, community change, and sustainability cannot emerge without attending to historical mistrust and carefully building trust over time.(Duran et al. 2013, Muhammad et al. 2015)

As with trust building, collaboration across and within a community is a key component of CBPR.(Trickett and Espino 2004) As described by Hoshmand and Hoshmand, "[Collaborative] efforts can help to overcome the separation and lack of coordination of organizations and professional groups that support military families and communities."(Hoshmand and Hoshmand 2007, 178) Collaboration between military and civilian systems of care may be a central feature and primary outcome of a CBPR initiative. For example, the Together With Veterans Program was developed out of a CBPR partnership between VHA researchers and a coalition of Veterans in a single rural community.(Mohatt et al. 2018) The objective of the initiative is to implement community-based and public health approaches to suicide prevention. However, the CBPR approach taken by investigators created space for the local Veterans to identify their priorities and which strategies would be most helpful.(Mohatt et al. 2018) The resultant program is a suicide prevention initiative that is focused on building cross-sector relationships between the VA, local community health care and social service agencies, and local Veteran service organizations and advocates.

Because of the deliberate attention to equal partnership, CBPR approaches are well suited to building meaningful and long-term collaborations between military and civilian systems to

meet the needs of military families. CBPR would seek to first empower military community voices, including learning from military families as to what their most pressing concerns and priorities are. To the extent that cross-sector collaboration is important to addressing their priorities for military families, CBPR would not only identify the need, but would also bring the military family voice into established decision-making systems.(Haynes 2015, Shenberger-Trujillo and Kurinec 2016, DeVoe, Ross, and Paris 2012)

Discussion

CER and CBPR come from different scientific paradigms, with different implications for what counts as evidence and how research questions, designs, and goals are shaped. They have different strengths and limitations with respect to the two aims implicit in the questions we addressed: (1) supporting military family wellbeing and (2) improving programs and services to support military family wellbeing. Among other things, these aims make different assumptions about the nature of the problem, research goals, and the relevant unit of analysis. The CBPR worldview does not assume a specific relationship between the two aims; under some conditions, improving programs may greatly contribute to supporting military families and under others not at all. From this perspective, developing and implementing programs is one of many ways to support military family wellbeing. To the extent that program development or implementation is a top priority of military families, CBPR may be useful in accomplishing the second aim. Where goals reflect researcher, and not community, priorities (e.g., increasing family participation in programs), CBPR is not possible. In these cases, the implementation science literature describes a range of CE strategies.

CER and CBPR can both be effective at improving participation in programs, developing and adapting programs, increasing access to care, improving continuity of care, and enhancing

service system coordination. However, unlike CER, CBPR has potential to improve military family wellbeing beyond a focus on programs and services. Our review identified a variety of CE strategies that researchers can use to engage local stakeholders at different stages of program development or implementation to improve the fit between program and local community, in the hopes of increasing participation in and access to programs and services. For example, implementation science and other bodies of literature offer CE strategies for conducting community outreach, identifying local resources, decreasing access barriers, and adapting evidence-based support programs for military families. Further, similar to market research, CE strategies can be helpful in identifying gaps in care continuity across military settings from the perspective of military families. With respect to collaboration across systems of care, CER offers strategies for collaborating across systems as well as expanding existing capacities. Overall, CE approaches assume that existing programs and service systems are effective and adequate for supporting military family wellbeing and aim to improve them through selective engagement with stakeholders.

In contrast, CBPR starts with the community as unit of analysis and seeks to collaboratively identify and solve problems in the context of local community circumstances, goals, priorities, and assets. There are no *a priori* assumptions about the adequacy or importance of programs or service systems. For this reason CBPR can achieve the same goals (improving participation in programs, developing and adapting programs, increasing access to care, improving continuity of care, and enhancing service system coordination) by creating programs, service systems, or cross-system collaborations from the "ground up," assuming the research team (including community co-researchers) identified this as the best way to address local priorities. Because community capacity building and development goals are integral to CBPR, it

has potential to support military family wellbeing beyond implementing programs and improving services. For example, it may be particularly helpful in answering the following questions:

1. *What does military family wellbeing look like? How do military families define family wellbeing?*
2. *Which military and non-military settings are most impactful for military family wellbeing? How?*
3. *Which military sub-cultures are relevant and how might settings and definitions of wellbeing vary?*
4. *What are the local community development or capacity building priorities?*
5. *Which local resources/assets can be harnessed to achieve those?*
6. *How can we approach seemingly intractable problems differently?*

Such an approach entails asking new research questions as well as asking the "usual" kinds of questions differently. For example, program-centric questions akin to "what can be done to increase participation in [program name]?" are reframed to family-centric or strengths-based questions such as "how does your family get the support it needs?" or "how do available resources contribute to your family's wellbeing?" A variety of quantitative and qualitative research methods and study designs will be needed to answer these and other questions in support of military family wellbeing.

A key consideration from either standpoint is how to define *community* in ways relevant to military families.(Beehler and Trickett In preparation) Community can be defined as "a geographically and/or demographically defined population with 1) a social identity; and 2) some evidence of social capital".(Yoshikawa et al. 2005, p.29) Communities are comprised of individual and institutional members who are connected through networks that facilitate the exchange of resources and information.(Schensul 2009) Communities are defined as much by who is excluded as who is included, and members often have shared historical and cultural understandings. If the primary goal is to improve support programs or services, one might define community in terms of the implementation setting or individuals affected by program delivery (e.g., implementers,

service providers, target participants). Alternately, if the starting goal is to support military families, community would likely be defined differently (e.g., based on shared geography or family characteristics).

Though communities are largely defined by what members have in common, they also have subgroups varying in their interests, identities and statuses. For example, military family wellbeing processes and outcomes may vary systematically depending on dual parent service (vs one parent serving), veteran status (vs. actively serving), service component (Reserve vs. Active Duty), branch (e.g., Army vs. Navy), rank (enlisted vs. officer), relationship status (intact vs. separated/divorced), location of residence (on base vs non-military neighborhood), number and age of children, child special needs, family income, residential location, race/ethnicity, and service era. Constellations of membership in these subgroups may signify different family boundaries between military and civilian life, confer different access to resources and power, and reflect different ways in which families identify with military and non-military communities and cultures over time. Several types of communities may be studied, and specifying what comprises *community* for a given group of military families is essential. For example, defining community geospatially suggests that military installations are most salient for active duty military families who live on base and, conversely, non-military neighborhood or community characteristics may be most influential for off-base reserve component families. Virtual communities may also be relevant for supporting wellbeing as they connect highly mobile military families to one another.

Conclusion

We have advocated for a full embrace of CBPR to support military family wellbeing. There are several aspects of military life and culture that make CBPR both more appealing and more challenging in this context. CBPR may not always be feasible. The hierarchical and highly

structured nature of military settings may make it difficult to share power on research teams, stay open to emergent and unexpected research directions, and act on findings as needed. Further, military members and families are busy and transient, which may complicate the development of long-term CBPR efforts. In CBPR it can be important to manage expectations up the chain of command—military leadership, funders, policy makers, and program administrators may seek specific action or answers on set timelines. CBPR is a powerful tool for improving community wellness and enacting meaningful and relevant social change. However, it is not highly predictable and may not meet the expectations of one's funders or leadership. Further, CBPR invokes a different set of ethical standards and considerations—related to accountability to the community—that may or may not be compatible with specific military settings and circumstances. The CBPR worldview asks those of us with the traditional power to set research agendas to not set the agenda.

Instead, in CBPR researchers support the community in defining the problem, priorities, and actions. This makes CBPR an ideal approach to identifying and enacting solutions to improve military family wellbeing. CBPR is in many ways a natural fit for military families, who by virtue of committing to military life tend to be resilient, close-knit, connected to other military families, and resonate with strengths-based approaches. Because it is flexible in its methods, CBPR allows for military families to participate in research in a number of different ways. Photovoice, for example, is an innovative methodology that allows for individuals to capture photo or video images of their environments and experiences to share with others. It can be used for community assessment, qualitative data collection, and program evaluation, and has potential, among other things, to capture supportive and unsupportive aspects of military family environments. Ultimately, CBPR is an ideal fit for improving military family wellbeing because

of its foci on creating action and change to improve community outcomes, as well as its ability to generate and address important questions that remain unanswered.

References

"PARTNER: Program to Analyze, Record, and Track Networks to Enhance Relationships." accessed 8/28/2018. https://partnertool.net/.

Aarons, Gregory A., Amy E. Green, Lawrence A. Palinkas, Shannon Self-Brown, Daniel J. Whitaker, John R. Lutzker, Jane F. Silovsky, Debra B. Hecht, and Mark J. Chaffin. 2012. "Dynamic adaptation process to implement an evidence-based child maltreatment intervention." *Implementation Science* 7 (1):32. doi: 10.1186/1748-5908-7-32.

Allen, James, Gerald V Mohatt, S Michelle Rasmus, Kelly L Hazel, Lisa Thomas, and Sharon Lindley. 2006. "The tools to understand: Community as co-researcher on culture-specific protective factors for Alaska Natives." *Journal of Prevention & Intervention in the Community* 32 (1-2):41-59.

America, Robert Wood Johnson Foundation Commission to Build a Healthier. 2009. Beyond Health Care: New Directions to a Healthier America.

Beehler, Sarah , and Edison J. Trickett. In preparation. "The ecology of military community reintegration: Conceptual and research implications.".

Blumenthal, Daniel S. 2011. "Is community-based participatory research possible?" *American Journal of Preventive Medicine* 40 (3):386.

Brenner, L. A., Claire Hoffmire, Nathaniel V. Mohatt, and Jeri E. Forster. 2018. "Preventing Suicide among Veterans Will Require Clinicians and Researchers to Adopt a Public Health Approach." *FORUM: Translating Research INto Quality Healthcare for Veterans* (Spring 2018).

Castro, Felipe González, Manuel Barrera Jr., and Lori K. Holleran Steiker. 2010. "Issues and Challenges in the Design of Culturally Adapted Evidence-Based Interventions." *Annual Review of Clinical Psychology* 6 (1):213-239. doi: 10.1146/annurev-clinpsy-033109-132032.

Department of Veterans Affairs. 2018. National Strategy for Preventing Veteran Suicide 2018-2028.

DeVoe, Ellen R, Abigail M Ross, and Ruth Paris. 2012. "Build it together and they will come: The case for community-based participatory research with military populations." *Advances in Social Work* 13 (1):149-165.

Duran, Bonnie, Nina Wallerstein, Magdalena M Avila, Lorenda Belone, Meredith Minkler, and Kevin Foley. 2013. "Developing and maintaining partnerships with communities." *Methods for community-based participatory research for health*:43-68.

Easterbrooks, M. Ann, Kenneth Ginsburg, and Richard M. Lerner. 2013. "Resilience among Military Youth." *The Future of Children* 23 (2):99-120.

Ellison, Marsha Langer, Lisa Mueller, David Smelson, Patrick W Corrigan, Rosalie A Torres Stone, Barbara G Bokhour, Lisa M Najavits, Jennifer M Vessella, and Charles Drebing. 2012. "Supporting the education goals of post-9/11 veterans with self-reported PTSD symptoms: A needs assessment." *Psychiatric Rehabilitation Journal* 35 (3):209.

Faridi, Zubaida, Jo Anne Grunbaum, Barbara Sajor Gray, Adele Franks, and Eduardo Simoes. 2007. "Community-based participatory research: necessary next steps." *Preventing chronic disease* 4 (3).

Green, Lawrence W, and Shawna L Mercer. 2001. "Can public health researchers and agencies reconcile the push from funding bodies and the pull from communities?" *American journal of public health* 91 (12):1926-1929.

Haynes, ERIN N. 2015. "Community-based participatory research: An overview for application in Department of Defense/Veterans Affairs research." *Airborne hazards related to deployment*:239-244.

Hernandez, Lyla M, Linda Rosenstock, and Kristine Gebbie. 2003. *Who will keep the public healthy?: educating public health professionals for the 21st century*: National Academies Press.

Hirsch, Gary B., Ralph Levine, and Robin Lin Miller. 2007. "Using system dynamics modeling to understand the impact of social change initiatives." *American Journal of Community Psychology* 39 (3):239-253. doi: 10.1007/s10464-007-9114-3.

Hoge, Charles W, Sasha H Grossman, Jennifer L Auchterlonie, Lyndon A Riviere, Charles S Milliken, and Joshua E Wilk. 2014. "PTSD treatment for soldiers after combat deployment: low utilization of mental health care and reasons for dropout." *Psychiatric Services* 65 (8):997-1004.

Homer, Jack B, and Gary B Hirsch. 2006. "System dynamics modeling for public health: background and opportunities." *American journal of public health* 96 (3):452-458.

Hoshmand, Lisa Tsoi, and Andrea L Hoshmand. 2007. "Support for military families and communities." *Journal of Community Psychology* 35 (2):171-180.

Hovmand, Peter S. 2014. "Group Model Building and Community-Based System Dynamics Process." In *Community Based System Dynamics*, 17-30. New York, NY: Springer New York.

Huebner, Angela J, Jay A Mancini, Gary L Bowen, and Dennis K Orthner. 2009. "Shadowed by war: Building community capacity to support military families." *Family Relations* 58 (2):216-228.

Israel, Barbara A, Amy J Schulz, Edith A Parker, and Adam B Becker. 1998. "Review of community-based research: assessing partnership approaches to improve public health." *Annual review of public health* 19 (1):173-202.

Jagosh, Justin, Ann C Macaulay, Pierre Pluye, Jon Salsberg, Paula L Bush, Jim Henderson, Erin Sirett, Geoff Wong, Margaret Cargo, and Carol P Herbert. 2012. "Uncovering the benefits of participatory research: implications of a realist review for health research and practice." *The Milbank Quarterly* 90 (2):311-346.

Kegler, Michelle C, and Deanne W Swan. 2011. "An initial attempt at operationalizing and testing the community coalition action theory." *Health Education & Behavior* 38 (3):261-270.

Kilpatrick, DG, CL Best, DW Smith, H Kudler, and V Cornelison-Grant. 2011. Serving those who have served: Educational needs of health care providers working with military members, veterans, and their families. Charleston, SC: Medical University of South Carolina Department of Psychiatry, National Crime Victims Research & Treatment Center. Acknowledgements Citation.

Kirmayer, Laurence J. 2012. "Cultural competence and evidence-based practice in mental health: Epistemic communities and the politics of pluralism." *Social Science & Medicine* 75 (2):249-256. doi: https://doi.org/10.1016/j.socscimed.2012.03.018.

Knox, K. L., S. Pflanz, G. W. Talcott, R. L. Campise, J. E. Lavigne, A. Bajorska, X. Tu, and E. D. Caine. 2010. "The US Air Force suicide prevention program: implications for public health policy." *American Journal of Public Health* 100 (12):2457-2463.

Lee, Shawna J., Inna Altschul, and Carol T. Mowbray. 2008. "Using Planned Adaptation to Implement Evidence-Based Programs with New Populations." *American Journal of Community Psychology* 41 (3):290-303. doi: 10.1007/s10464-008-9160-5.

Luke, Douglas A. 2005. "Getting the big picture in community science: Methods that capture context." *American journal of community psychology* 35 (3-4):185.

Medicine, Institute of. 2013. *Returning Home from Iraq and Afghanistan: Assessment of Readjustment Needs of Veterans, Service Members, and Their Families*. Washington, DC: The National Academies Press.

Meyers, Duncan C, Joseph A Durlak, and Abraham Wandersman. 2012. "The quality implementation framework: a synthesis of critical steps in the implementation process." *American journal of community psychology* 50 (3-4):462-480.

Miller, Alison L., Allison M. Krusky, Susan Franzen, Shirley Cochran, and Marc A. Zimmerman. 2012. "Partnering to Translate Evidence-Based Programs to Community Settings:Bridging the Gap Between Research and Practice." *Health Promotion Practice* 13 (4):559-566. doi: 10.1177/1524839912438749.

Minkler, Meredith, and Nina Wallerstein. 2011. *Community-based participatory research for health: From process to outcomes*: John Wiley & Sons.

Mohatt, Nathaniel V, Melodi Billera, Nathaan Demers, Lindsey L Monteith, and Nazanin H Bahraini. 2018. "A menu of options: Resources for preventing veteran suicide in rural communities." *Psychological services* 15 (3):262.

Muhammad, Michael, Nina Wallerstein, Andrew L Sussman, Magdalena Avila, Lorenda Belone, and Bonnie Duran. 2015. "Reflections on researcher identity and power: The impact of positionality on community based participatory research (CBPR) processes and outcomes." *Critical Sociology* 41 (7-8):1045-1063.

Murphy, Robert A, and John A Fairbank. 2013. "Implementation and dissemination of military informed and evidence-based interventions for community dwelling military families." *Clinical child and family psychology review* 16 (4):348-364.

Neal, Jennifer Watling, Zachary P. Neal, Marc S. Atkins, David B. Henry, and Stacy L. Frazier. 2011. "Channels of Change: Contrasting Network Mechanisms in the Use of Interventions." *American Journal of Community Psychology* 47 (3):277-286. doi: 10.1007/s10464-010-9403-0.

Schensul, Jean J. 2009. "Community, Culture and Sustainability in Multilevel Dynamic Systems Intervention Science." *American Journal of Community Psychology* 43 (3):241-256. doi: 10.1007/s10464-009-9228-x.

Schulz, Amy J, Barbara A Israel, and Paula Lantz. 2003. "Instrument for evaluating dimensions of group dynamics within community-based participatory research partnerships." *Evaluation and Program Planning* 26 (3):249-262.

Shenberger-Trujillo, Jessica M, and Courtney A Kurinec. 2016. "Bridging the Research to Application Divide: Recommendations for Community-Based Participatory Research in a Military Setting." *Military Behavioral Health* 4 (4):316-324.

Syme, S Leonard, and Brian D Smedley. 2000. *Promoting health: Intervention strategies from social and behavioral research*: National Academies Press.

Trickett, E. J., S. Beehler, C. Deutsch, L. W. Green, P. Hawe, K. McLeroy, R. L. Miller, B. D. Rapkin, J. J. Schensul, and A. J. Schulz. 2011. "Advancing the science of community-level interventions." *American Journal of Public Health* 101 (8):1410.

Trickett, E. J., and S. L. R. Espino. 2004. "Collaboration and social inquiry: Multiple meanings of a construct and its role in creating useful and valid knowledge." *American Journal of Community Psychology* 34 (1):1-69.

Trickett, Edison J. 2011. Community-based participatory research as worldview or instrumental strategy: Is it lost in translation (al) research? : American Public Health Association.

Trickett, Edison J. 1984. "Toward a distinctive community psychology: An ecological metaphor for the conduct of community research and the nature of training." *American Journal of Community Psychology* 12 (3):261-279. doi: doi:10.1007/BF00896748.

True, Gala, Khary K Rigg, and Anneliese Butler. 2015. "Understanding barriers to mental health care for recent war veterans through photovoice." *Qualitative Health Research* 25 (10):1443-1455.

Tseng, Vivian, and Edward Seidman. 2007. "A systems framework for understanding social settings." *American Journal of Community Psychology* 39 (3):217-228. doi: 10.1007/s10464-007-9101-8.

Varda, Danielle M, Anita Chandra, Stefanie A Stern, and Nicole Lurie. 2008. "Core dimensions of connectivity in public health collaboratives." *Journal of Public Health Management and Practice* 14 (5):E1-E7.

Viswanathan, Meera, Alice Ammerman, Eugenia Eng, Gerald Gartlehner, Kathleen N Lohr, Derek Griffith, Scott Rhodes, Carmen Samuel-Hodge, Siobhan Maty, and Linda Lux. 2004. "Community-based participatory research: assessing the evidence." *Evidence report/technology assessment* 99:1-8.

Wagenaar, Alexander C, Melvin D Livingston, Dallas W Pettigrew, Terrence K Kominsky, and Kelli A Komro. 2018. "Communities mobilizing for change on alcohol (CMCA): secondary analyses of a randomized controlled trial showing effects of community organizing on alcohol acquisition by youth in the Cherokee nation." *Addiction* 113 (4):647-655.

Wallerstein, N. B., and B. Duran. 2006. "Using community-based participatory research to address health disparities." *Health Promotion Practice* 7 (3):312-323.

Wallerstein, Nina, and Bonnie Duran. 2008. "The theoretical, historical and practice roots of CBPR." *Community Based Participatory Research for Health: Advancing Social and Health Equity*.

Wallerstein, Nina, and Bonnie Duran. 2010. "Community-based participatory research contributions to intervention research: the intersection of science and practice to improve health equity." *American journal of public health* 100 (S1):S40-S46.

Yoshikawa, Hirokazu, Patrick A. Wilson, John L. Peterson, and Marybeth Shinn. 2005. "Multiple Pathways to Community-Level Impacts in HIV Prevention: Implications for Conceptualization, Implementation, and Evaluation of Interventions." In *Community Interventions and AIDS*, edited by Willo Pequegnat and Edison J. Trickett, 29-55. New York: Oxford University Press.