An Evaluation of the Perceptions of Community Health Workers about the Effectiveness of Interprofessional Family Reviews

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Abstract

This capstone evaluates the perceptions of community health workers about the effectiveness of interprofessional family reviews in providing support for vulnerable families served by three Healthy Families programs. Community health workers (CHWs) provide education, resources and support for vulnerable families to mitigate risk factors associated with poor parenting outcomes including maternal depression. CHWs participate in interprofessional family reviews (IPFR) of their cases in order to receive support, consultation, training, and guidance for their work. Faculty members and their students in clinical psychology and nursing also participate, increasing the relevance of their teaching and learning. Effective collaboration is essential for the IPFR model to be useful. The Wilder Collaboration Factors Inventory (Mattessich, Murray-Close, & Monsey, 2001), which includes 20 factors associated with successful collaboration, and two qualitative questions evaluated the perceptions of community health workers about the effectiveness of the IPFRs to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges. A cross sectional descriptive research design was used for the evaluation of CHW perceptions of IPFR effectiveness and used both quantitative and qualitative descriptive methods.

Nine CHWs completed the survey during spring 2014. Of 20 collaboration factors evaluated, the standardized means of 5 were above 4.00 (no follow up needed) and 15 were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction). Qualitative themes confirmed that CHWs value the consultation, training, and support they receive in the IPFRs, but that they recommend involving additional interprofessional team members and that the IPFRs focus on practical advice, resources and guidelines. Healthy Families program community health workers perceive the interprofessional family reviews as effective in

providing support, consultation, and training for serving vulnerable families. However, it will be important to follow up on the survey findings for the IPFRs to continue to be perceived as useful. Core competencies for interprofessional collaborative practice can inform the process (IPEC, 2011).

Key words: Interprofessional collaborative practice, community health workers, preventing child maltreatment, support for vulnerable families, reflective consultation

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I. Introduction

Community health workers (CHWs) provide services for the most vulnerable families in a community who are at risk for many of the factors that can result in poor parenting outcomes. The families served by the Healthy Families program are the most vulnerable at-risk families in a target community, and are complex, requiring intensive support and care coordination ("Healthy Families America", 2014). Interprofessional collaborative practice is gaining increased attention as the way to optimize health outcomes for patients and families with complex challenges (Interprofessional Education Collaborative Expert Panel [IPEC], 2011); World Health Organization [WHO], 2010). Home visitors frequently report family situations that are challenging and difficult to assess. The families frequently need resources beyond what CHWs are prepared to provide. Effective interprofessional consultation can provide needed assistance in family goal planning and staff development for community health workers who are involved in supporting families ("Healthy Families America critical elements", 2001; WHO, 2010). It can also provide a model for interprofessional collaboration for students and faculty to develop competencies for interprofessional collaborative practice.

The Healthy Families America (HFA) is a national evidence-based home-visiting model ("Healthy Families America", 2014)) that provides voluntary, strength based, and family centered home-visiting services to expectant and new parents. The program is designed to promote healthy family functioning by reducing risk factors for poor parenting outcomes, child maltreatment and foster protective factors within at-risk families. Healthy Families CHWs, in the context of a trusting relationship, provide regular home visits for families who may be at risk of

child abuse and neglect and other poor outcomes due to a variety of factors including poverty, single parenthood, low educational level, and unemployment. Visits begin prenatally, may continue until a child is five years old, and occur with decreasing frequency as families become more self-sufficient. Families are provided with educational information related to child development, positive parenting techniques, preventive care, and child safety. CHWs assist families by providing and following up on community referrals, conducting regular developmental screens on children, and facilitating other needed services. Services to address physical and mental health concerns including depression, substance abuse, domestic violence and resources to meet basic needs, are among the resources CHWs coordinate, depending on the parent's needs (Daro & Harding, 1999; "Healthy Families America", 2014; "Healthy Families America critical elements", 2001).

A healthy parent-child relationship is critical to the social, emotional, and physical development of a child (Barton et al., 2008; Dube, Felitti, Dong, Giles, & Anda, 2003). Untreated maternal depression can interfere with the early bonding and attachment process between mother and child as well as contribute to the child's risk of developing a number of health and mental health problems (Barton et al., 2008; Dube et al., 2003). Research demonstrates that family stressors can have adverse impacts that follow children into adulthood. The Adverse Childhood Experiences (ACE) study, sponsored by the Centers for Disease Control and Prevention and Kaiser Permanente's Department of Preventative Medicine in San Diego, California, involved over 17,000 participants and examined the health and social effects of adverse childhood experiences over the life span (Dube et al., 2003; Centers for Disease Control and Prevention [CDC], 2009). As the number of ACEs increase, the risk for health problems in

adulthood increases in a strong and graded fashion (Dube et al., 2003; Felitti et al., 1998). One of the nine adverse childhood experiences (ACEs) is parental mental illness (CDC, 2009).

Parents who are low income and/or under-insured are less likely to access health and mental health services. Cultural factors influence access and use of mental health services during this important time in the life of a family (Barton et al., 2008). Health care providers may not recognize the symptoms of depression or may not ask the patient questions that elicit responses that alert the provider to the diagnosis. In 2004, the Virginia Department of Health learned through a survey that primary care providers lack confidence in their ability to treat postpartum depression. The most common barriers identified were limited time, communication and language barriers, stigma, inadequate provider knowledge and skills, lack of available mental health services, and lack of insurance. (Barton et al., 2008) Community health workers (CHW) have an important role in bridging the communication gap that undermines focused prevention efforts including early detection and treatment (Frenk et al. 2010; World Health Organization [WHO], 2010). Trained community health workers have an important role in the national and global health priority to prevent child maltreatment and promote safe, stable, and nurturing relationships by providing education, resources, and support through intensive home visiting in the context of a trust based relationship with vulnerable parents at risk for postpartum depression and other mental illnesses (CDC, 2009; "Healthy Families America", 2014; Zimmerman & Mercy, 2010).

Reported prevalence of maternal depression varies but estimates indicate that it affects between 10-15% of the maternal population (Gavin, Lohr, Metzler-Brody, Gartlehner, & Swinson, 2005; Gaynes et al., 2005). The numbers increase with added stressors and family risk factors. In a 2007 Healthy Start Initiative study in Virginia using the Edinburgh Postnatal

Depression Screen (EPDS), 34% of the 376 parents screened demonstrated a positive screen for depression (Barton et al., 2008; Centers for Disease Control and Prevention [CDC], 2008).

Preventing child maltreatment is a priority for the World Health Organization (WHO, 2008), Healthy People 2020 (U.S. Department of Health and Human Services [DHHS], 2013), and the Centers for Disease Control and Prevention (CDC, 2008). The CDC promotes safe stable and nurturing relationships between children and their caregivers (CDC, 2008). "The negative consequences of the absence of nurturing for the emotional development of children due to, for example, parental mental illness (e.g., maternal depression) or hostility, has been well documented in developmental research and studies of brain functioning" (CDC, 2008; Dawson, et al., 2000). The World Health Organization's Millennium Development Goal Five is to improve maternal health (WHO, 2008) along with the goal to improve maternal *mental* health. Importantly, Healthy People 2020's goals include increasing the proportion of children and adults with mental health disorders who receive treatment and are screened in their primary care setting (DHHS, 2013).

Maternal factors associated with increased risk for depression include financial stress, Medicaid coverage, tobacco use in the last three months, teen pregnancy, single, physical abuse before or during pregnancy, partner related stress during pregnancy, past history of depression and lack of social support (CDC, 2008; CDC 2009). The factors overlap with the adverse childhood experiences identified as having a strong association with poor outcomes into adulthood. These are also the factors that are included in a screening for pregnant mothers to determine if they would benefit from the intensive, strength based home visiting model of support that Healthy Families America programs offer ("Healthy Families America critical elements", 2001).

Providing resources and support for parents at risk of poor parenting outcomes, including child abuse and neglect, is an important public health goal (CDC, 2008; Zimmerman & Mercy, 2010). Stressed mothers, eligible for the Healthy Families program, are at risk for postpartum depression. Postpartum depression is a common condition among parents with the risk factors that are associated with Healthy Families program eligibility and is associated with significant risks for both mother and child.

Healthy Families CHWs provide services for the most vulnerable families in a community who are at risk for many of the factors that can result in poor parenting outcomes. The families served by the Healthy Families program are the most vulnerable at-risk families in a target community, and are complex, requiring intensive support and care coordination ("Healthy Families America", 2014). Interprofessional collaborative practice is gaining increased attention as the way to optimize health outcomes for patients and families with complex challenges (Institute of Medicine [IOM], 2013; IPEC, 2011; WHO; 2010). Home visitors frequently report family situations that are challenging and difficult to assess. The families frequently need resources beyond what CHWs are prepared to provide. Accessible, acceptable, affordable, and effective interprofessional consultation can provide needed assistance in family goal planning and staff development for community health workers who are involved in supporting families.

Purpose

A monthly interprofessional family review was developed to discuss families who are struggling with health or mental health concerns that complicate the community health worker's ability to support the family. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional

family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

Research Question

What are the perceptions of community health workers about the effectiveness of collaboration in interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges?

II. Review of the Literature

Community Health Worker Roles and Effectiveness

The literature from October 2003 to October 2013 was systematically reviewed in order to identify and evaluate factors associated with community health worker effectiveness. Electronic databases CINAHL, Cochrane and MEDLINE were searched. The key words "community health worker" and "effectiveness" were combined when searching the CINAHL database. The search did not result in any relevant studies so the word "supervision" was substituted. This search returned 17 citations with 1 article relevant to the study question. The key words "community health worker" and "effectiveness" were combined when searching the PubMed database. This search returned 419 citations with 3 articles relevant to the study question. When searching the Cochrane database, the key words "community health worker" "effectiveness" was combined; this search yielded no citations. The search was amended to include the key words "community health worker" and the yield was 29 citations with 3 of them relevant to the research question. There were overlapping citations with the other searches. The ancestry of pertinent research reports and review articles was hand searched in order to identify additional studies. Inclusion criteria were: 1) any study that compared community health worker effectiveness with strategies for support. Exclusion criteria were: 1) studies that did not assess effectiveness of community health worker programs, 2) studies without an English language abstract, and 3) studies which did not have an available full text copy available through the UVA Library system. The search was limited to studies published since 2003 because of the increase in interest in community health workers in recent years. Selected studies published before 2000 were included if they were cited frequently in the literature reviewed. Randomized clinical trials and quasi-experimental (non-randomized comparison cohort studies) were included in the

review, case studies, multiple case series and descriptive studies were excluded. Three studies and four systematic reviews were identified that met inclusion criteria (Table 1).

Glenton et al. (2013) published a Cochrane Review of fifty-three studies in which they linked CHW program strength to trust-based relationships between CHWs and their clients. They also noted that CHWs effectiveness is enhanced by relevant, visible and regular support, training, and supervision linked to the health system and the community that is accessible and acceptable. Other studies, peer reviewed commentaries and working group publications validate these findings (Arvey & Fernandez, 2012; Balcazar et al., 2011; Frenk et al., 2010; Lewin et al., 2010; Pallas et al., 2013; Perry & Zulliger, 2012; Singh & Chokshi, 2013; World Health Organization [WHO], 2008;). Frenk et al. (2010) state that there is abundant evidence that shows that "the effectiveness and long –term sustainability of community health workers depends critically on an appropriate balance and strong collaborative linkages with professional cadres."

Perry and Zulliger (2012) concluded that CHWs cannot be effective without a supportive health care system, appropriate selection, training, supervision and resources. Again, supervision, training and a supportive system is critical the CHW effectiveness. They found that there are examples of CHWs effectiveness in addressing major global health goals at the community level but there is a lack of research on the effectiveness of large scale, replicable CHW programs.

The World Health Organization (2008) acknowledges that strong alliances must be developed with health and human services professionals and organizations to insure optimal outcomes. Establishing strong linkages to health and human service professionals is a priority according to the World Health Organization Report (2008) as the clients CHWs typically serve are high users of health and human services. Credentialing for CHWs can be one of the ways to

document CHW preparation and training. At this point, there are few if any large scale models for CHW credentialing. Again, ongoing training and effective supervision are key CHW program components that lead to positive health outcomes (Frenk et al. 2010; Glenton et al. 2013; Perry & Zulliger, 2012; WHO, 2008).

Healthy Families America. Healthy Families America is an evidence-based home visiting program that provides education, resources, and support for expectant and new families at risk of poor parenting outcomes through intensive home visitation by trained community health workers, also known as family support workers (FSWs) or home visitors. The Healthy Families America (HFA) mission is "to promote child well-being and prevent the abuse and neglect of our nation's children through home visiting services." ("Healthy Families America", 2014) The strength-based, free, and voluntary nature of the program in which a trust-based relationship with the trained community health worker is central, has been found to be effective in reducing the incidence of founded cases of child abuse and neglect (Daro & Harding, 1999; Wagner, Spiker & Linn, 2002; Whipple & Nathans, 2005; Zigler, Pfannenstiel & Seitz, 2008). The program is designed to promote healthy family functioning by reducing risk factors and building protective factors within at-risk families. Family centered, strength-based, intensive, voluntary, and systematic family support using evidence-based strategies (using the Parents as Teachers curriculum is one example) by trained home visitors is the Healthy Families program focus and is effective in reducing risk factors associated with poor outcomes (Daro & Harding, 1999; Wagner et al., 2002; Whipple & Nathans, 2005; Zigler et al., 2008).

The problems facing families at risk for abuse or neglect are complex and require support in the context of a trust based relationship with a family support worker who provides intensive, comprehensive, home visiting services ("Healthy Families America", 2014). Coordination of

services and access to consultation and referral resources is essential to address the complex needs of at risk families. Schorr (1987) states that "fragments of services – a few classes in parent education, a one-visit evaluation at a mental health center, or a hurried encounter with an unfamiliar and overburdened physician – are often so inadequate that they can be a waste of precious resources" (p.368). The most effective community health worker programs are characterized by effective collaboration between professionals in the conventional health care system, an accessible referral system, and effective supervision of trained community health workers who are chosen for their ability to develop trusting relationships with the participating families (Glenton et al., 2013; Pallas et al., 2013; Singh & Chkshi, 2013; Balcazar et al. 2011; WHO, 2008; Perry & Zullinger, 2012).

The Healthy Families (HF) record of success is largely due to the program's emphasis on the development of healthy parent-child relationships by trained community health workers who are supported in their role. Home visiting is a proven strategy for promoting positive maternal health outcomes, improvement in child health outcomes, optimal child development, and improvement in parent child interaction, family well-being and self-sufficiency. Research has shown that home visiting is very effective in helping parents develop healthy parent-child relationships that provide positive health, safety, and educational outcomes for children, and that home visiting can be correlated with parents' ability and willingness to find and maintain employment, further their own education, or otherwise improve long-term prospects for the family (CDC, 2008; Daro & Harding, 1999; Wagner et al., 2002; Whipple et al., 2005; Zigler et al., 2008) (Table 1). By reducing family stress, outcomes for both parents and children are optimized, and risks for poor outcomes are reduced (Dennis & Creedy, 2004; Cox et al., 2008; CDC, 2008; Dennis & Hodnett, 2009; Felitti et al., 1998). The Parents as Teachers (PAT)

curriculum used by Healthy Families community health workers during home visits is evidence-based and actively addresses the risk factors and poor parenting outcomes that predispose families to poor outcomes including child abuse and neglect (Wagner et al., 2002; Zigler et al., 2008).

Healthy Families America's critical elements state that home visitors "should receive ongoing, effective supervision so that they are able to develop realistic and effective plans to empower families to meet their objectives; to understand why a family may not be making progress and how to work with the family more effectively; and to express their concerns and frustrations so that they can see that they are making a difference and in order to avoid stress-related burnout" ("Healthy Families America critical elements", 2001). Larner, Halpern, and Harkavay (1992) assessed the effectiveness of seven demonstration projects for children and families. Supervision provides an opportunity to review and assess the FSWs relationship with individual families, problem solve regarding resources and/or referrals needed to support stressed families, and reflect on challenges in supporting stressed families. Supervision also serves as an important time to discuss the strong feelings home visitors may experience in supporting stressed families whose decisions may undermine the families' health goals. Larner, Halpern, and Harkavay (1992) noted "the most significant element of supervision was the support it provided for the family workers in their often-stressful work with families" (p. 194).

Community health workers have an essential role in supporting vulnerable families but may lack the knowledge and skills to identify and respond to symptoms associated with depression and other conditions that place the family at risk for poor parenting outcomes. Regular, relevant, accessible, acceptable, and effective support for the community health worker

role and quality referral networks is essential in order to optimize outcomes for women and families at risk.

Postpartum Depression and Psychosocial Support

The literature from January 2000 to December 2010 was systematically reviewed in order to identify and evaluate interventions specifically designed to reduce symptoms of maternal depression. Electronic databases CINAHL, Cochrane and MEDLINE were searched. The key words "postpartum depression" and "psychosocial support" were combined when searching the CINAHL database. This search returned 99 citations with 16 articles relevant to the study question. When searching the MEDLINE database, the key words "postpartum depression" and "psychosocial support" were combined; this search yielded 186 citations, with 13 of them available in full text and either RCT or quasi-experimental studies on the topic of interest. The Cochrane Library was searched using the key terms, "postpartum depression". This search returned 15 completed systematic reviews, four of them addressing the aims of this systematic review. The ancestry of pertinent research reports and review articles was hand searched in order to identify additional studies. Inclusion criteria were: 1) any study that compared psychosocial support for persons at risk for or identified with postpartum depression with another intervention, or usual treatment. Exclusion criteria were: 1) studies that did not measure postpartum depression as an outcome, 2) studies without an English language abstract, and 3) studies that did not study treatment outcomes, and 4) studies which did not have an available full text copy available through the UVA Library system. The search was limited to studies published since 2000 because of the increase in interest in postpartum depression in recent years. Selected studies published before 2000 were included if they were cited frequently in the literature reviewed. Randomized clinical trials and quasi-experimental (non-randomized comparison

cohort studies) were included in the review, case studies, multiple case series and descriptive studies were excluded. Seven studies and four systematic reviews were identified that met inclusion criteria (Table 2).

Postpartum support has been helpful to depressed parents. Gaynes et al. (2005) report that out of nine studies involving psychosocial intervention for postpartum depression, six reported significant benefit relative to the control group. Intensive, individualized, professionally based postpartum support for "at-risk" parents offers promise and merits further research (Dennis & Creedy, 2004). Prenatal interventions have not been found to be useful in preventing postpartum depression (Dennis & Allen, 2008; Dennis, Ross, & Grigoriadis, 2007; Webster et al, 2003). A number of studies indicate that there is evidence that postpartum support in various forms offers quantifiable benefit to depressed new mothers or those at risk for depression (Beck, 2008; Chen, Tseng, Chou, & Wang, 2000; Cox et al., 2008; Heh, 2003;). More well designed studies on postpartum screening, assessment and intervention, which are based on a theoretical framework, are needed (Beck, 2008).

Psychosocial (e.g., peer support, non-directive counseling) and psychological (e.g., cognitive behavioral therapy and interpersonal psychotherapy) interventions appear to be effective in reducing symptoms of postpartum depression (Dennis & Hodnett, 2009). That may include providing psychosocial support through home visitation by community health workers who in turn are supported by health and mental professionals who are part of a comprehensive, quality, cost effective, community-based intervention strategy. Involvement by an interprofessional team can provide needed consultation and referral information, as well as ongoing staff education for community health workers, thereby establishing a care model that is structured to adhere to best professional practice recommendations. Peer support can be

effective in preventing postpartum depression among women at high risk (Dennis, 2003; Dennis et al., 2009; Dennis & Kingston, 2008). With routine post-partum depression screening, and culturally sensitive psychosocial support, parents can be screened, identified, assessed, treated and/or referred, thus reducing the risks for poor outcomes to the mother, the baby, and the family (Dennis & Creedy, 2008; Cox et al., 2008). Additional well designed studies with larger samples are needed to establish the efficacy of both peer support and psychosocial interventions in diverse populations. According to the Grading System from the US Preventative Task Force, both psychosocial interventions and telephone based peer support, an example of a psychosocial intervention, are Level B. That means that there is fair evidence that benefits outweigh the risks and should be discussed as options with eligible patients. Many of the studies had significant methodological weaknesses.

Interprofessional Collaborative Practice

Interprofessional education and collaborative practice is defined by the World Health Organization as "occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (WHO, 2010). The World Health Organization (2010), accrediting bodies for health professions education (IPEC, 2011), and federal funders support collaboration as an important way to optimize health outcomes for increasing complex healthcare challenges. At the same time, colleges and universities are prioritizing educating students to be "collaboration ready" when they enter the workforce. The World Health Organization (2010) has advised that collaborative practice strengthens health systems and improves health outcomes. Interprofessional collaborative practice is a strategy to address the complex health challenges facing us nationally and globally (Barr, 2002; IOM, 2013; McKeown, Blundell, Lord, & Haigh, 2005). Supporting families at risk for poor parenting outcomes is a

complex global health challenge that demands an interprofessional collaborative practice strategy.

The Interprofessional Education Collaborative (IPEC, 2011) has advocated for: 1) development of interprofessional competences by health professions students as part of the learning process, so that they enter the workforce ready to practice effective teamwork and team-based care and, 2) development of interprofessional collaborative competencies through interactive learning with each other and working effectively as members of clinical teams.

Endorsed by the accrediting bodies of a number of health professions education programs, the four core competencies identified by the Interprofessional Education Collaborative (IPEC, 2011) are:

> 1) Work with individuals of other professions to maintain a climate of respect and shared values,
>
> 2) Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served,
>
> 3) Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease and,
>
> 4) Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-/population-centered care that is safe, timely, efficient, effective, and equitable (pp. 19-25).

Interprofessional team members, who develop and refine their interprofessional practice in light of the core competencies, improve the likelihood that the interprofessional team will achieve their goal of optimizing patient and family care outcomes.

Collective impact is a model that is garnering significant attention in the business sector and is relevant to the discussion of interprofessional collaborative practice. Kania and Kramer (2011) noted that the complexity and scale of certain problems demand a collective, innovative approach to maximize impact. The approach has been successful in facilitating success in addressing a persistent student achievement gap in Cincinnati and northern Kentucky, when other approaches have repeatedly failed. Complex health issues are a driver for the increased interest in interprofessional collaborative practice. For collective impact to be successful, five conditions must be present.

First, all involved parties must share a common agenda. They must share a common understanding of the problem, an agreement on an approach to solving it through agreed upon actions (Kania & Kramer, 2011). In the case of the interprofessional family reviews, the strength based family-centered approach must be clearly understood by all team members. All actions and interventions must be embraced by the community health worker, the client, the family, and the consulting professionals and must be linked to promoting positive parenting outcomes. The common understanding of the problem is achieved through the group process and team communication. The IPEC core competencies for interprofessional collaborative practice are the way to equip health professions students and professionals to achieve a common understanding of the problem (IPEC, 2011). Second, there must be a shared measurement system, meaning that once there is common agreement on the problem, there must also be agreement on both what constitutes success and how it will be measured and communicated (Kania & Kramer, 2011). This step can be problematic for each member of the team individually as well as the team as a whole. CHWs, clinicians, and students must communicate about their experience of the IPFR and whether the process is successful in achieving shared goals. Third, collective impact requires

that all members of the diverse team engage in mutually reinforcing activities, meaning that the team members do not do the same thing but rather work in their area of strength, appreciating the unique contribution of each team member (Kania & Kramer, 2011). This perspective corresponds to an IPEC core competency which is to "use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served" (IPEC, 2011, p. 21). CHWs, clinicians, and students must understand and appreciate each other's unique roles.

Fourth, continuous communication and trust facilitate collective problem solving that results in positive impacts. Team members must trust that their perspective will be heard by the group and valued. Through continuous communication, the shared agenda and goals will be refined so that all can continue to affirm them (Kania & Kramer, 2011). This step corresponds to two of the IPEC core competencies (2011) related to interprofessional teamwork and interprofessional communication: 1) communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease and, 2) apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-/population-centered care that is safe, timely, efficient, effective, and equitable.

Fifth, for effective coordination to happen over time there must be a backbone support organization/infrastructure in place. Kania and Kramer (2011) assert that lack of supporting infrastructure is the most frequent reason collaborative initiatives fail. Facilitation, communication, data collection, reporting and communication all take time. In the same way interprofessional collaborative practice depends on a structured process leading to a collective

impact. Additionally, as the literature on CHW effectiveness highlights, support for the CHW role is essential. Relevant, regular support, training and supervision that is linked to the health system and to the community, enhances the effectiveness of the CHW role and the ability to achieve shared goals (Glenton et al., 2013).

Implications for Practice. Healthy Families is an evidence-based national program model, which provides education, resources, and support for the most vulnerable first time parents through intensive home visiting by community health workers. An interprofessional practice model is a successful, innovative, supportive, acceptable, acceptable, and cost effective way to achieve program and family goals.

The risk profile for inclusion in Healthy Families matches risks for developing maternal depression and other mental health issues. Healthy Families is a voluntary, strength-based program with the following goals: 1) achieve positive pregnancy, maternal and child health outcomes, 2) promote optimal child development, 3) encourage positive parenting, and 4) prevent child abuse and neglect ("Healthy Families America", 2014).

There is a pressing need to identify effective models that provide support for community health workers, who have a critical role in achieving important public health goals. Community health workers, supported by professionals, can be part of a collaborative care model that can achieve prevention goals through accessible, affordable, acceptable, and effective interventions.

The IPEC (2011) established interprofessional education as a priority for inclusion in health professions education programs. Interprofessional collaborative practice (IPCP) opportunities are limited and it is difficult to find opportunities for students to gain experience in interprofessional consultation and practice. Participation in the IPFR provides a community need-based experience for faculty practice and student learning. In the context of the IPEC Core

competencies, the IPFR goal is to demonstrate and practice the four core competencies, provide support, consultation, and guidance for community health workers in family goal planning and support for families, provide staff development on topics relevant to the community health workers work with the family, and provide a valuable clinical experience in interprofessional collaborative practice.

There is significant literature on optimizing patient, family, and community health outcomes through collaboration (Seifer & Maurana, 2000; WHO, 2010; IPEC, 2011; IOM, 2013). As discussed, that is the premise of the growing interest in interprofessional collaborative practice. Recognizing the potential for the positive collective impact on local, regional, national, and global health goals through campus community partnerships, Campus Community Partnerships for Health (CCPH) (Seifer & Maurana, 2000) identified nine principles of good community campus collaborative partnerships. The principles provide guidance for developing and evaluating campus community partnerships and collaborative practice. The IPFR is an example of a collaborative initiative between the university and a community program resulting in mutual benefit. However, to achieve its goals, the collaboration must be characterized by principles that are supported by the literature. The nine principles are:

1. Partners have agreed upon mission, values, goals, and measurable outcomes for the partnership.
2. The relationship between partners is characterized by mutual trust, respect, genuineness, and commitment.
3. The partnership builds upon identified strengths and assets, but also addresses areas that need improvement.

4. The partnership balances power among partners and enables resources among partners to be shared.
5. There is clear, open and accessible communication between partners, making it an ongoing priority to listen to each need, develop a common language, and validate/clarify the meaning of terms.
6. Roles, norms, and processes for the partnership are established with the input and agreement of all partners.
7. There is feedback to, among, and from all stakeholders in the partnership, with the goal of continuously improving the partnership and its outcomes.
8. Partners share the credit for the partnership's accomplishments.
9. Partnerships take time to develop and evolve over time (Seifer and Maurana, 2000, pp. 7-8).

Theoretical Framework

Collaboration and social exchange theory. The five stage model of collaboration developed by Gitlin, Lyons, and Kolodner (1994) provides a theoretical framework for interprofessional collaborative practice and provides a framework for this study. The model is based on the social exchange theory processes and the literature on teambuilding. The social exchange theory assumes that interpersonal interactions are essential to understanding groups.

Key concepts in this theoretical framework include exchange and negotiation (D'Amour, Ferrada-Videla, Rodriquez, & Beaulieu, 2005). Individuals join groups, according to the social exchange theory, "because of the benefits available to them as a result of membership, which may include social support, help in solving a particular problem, or professional advancement" (Gitlin et al., 1994, p. 18). There is the expectation that individuals within the group will

contribute valued knowledge or skills to achieve the goals of the group. In this way, there is mutuality and reciprocity in the group. This is described as "exchange" in the social exchange theory (D'Amour et al., 2005; Gitlin et al., 1994).

Negotiation can be described as the cost to an individual of contributing valued knowledge or skills to the group offset against the perceived benefit the individual gains from participation. For example, if the cost in time for the CHWs to participate in the IPFRs is too great and not offset by the benefit gained from the professional consultation, the IPFRs will be ineffective (D'Amour et al., 2005). Gitlin et al. (1994) in their review of the literature on team building, found that establishing a climate of trust, support, and cooperation permit the members to freely share ideas, creatively problem solve, and resolve differences of opinion. Community health worker's effectiveness is based on establishing a trust-based relationship with families. In the same way, the support offered for the CHW role through the IPFRs must be established on a foundation of trust. Finally, Gitlin et al. (1994) noted the importance of role differentiation to group functioning. Each group member must have a sense of their role, what is expected of them, and what the other members of the team will contribute.

Gitlin et al. (1994) developed a five stage model for collaboration that builds on the processes described in the social exchange theory and the literature. The stages are:

1) Assessment and goal setting, in which members determine if their goals can be achieved through collaboration, and assess the cost-benefit ratio,

2) Determination of collaborative fit, in which members determine that they are willing to collaborate to achieve a common goal contributing their unique knowledge and skills,

3) Role identification and reflection, in which members evaluate their continued willingness to collaborate given the culture that is developing and the resources needed to achieve goals,

4) Project refinement and implementation, in which procedures may be re-negotiated based on the third stage,

5) Evaluation, in which the team assesses the process in light of the outcomes (Gitlin et al., 1994, p.21).

The participants of the interprofessional family review process move through the stages Gitlin et al. (1994) describes.

The University of Wisconsin manual titled *Evaluating Collaboratives* notes that "how a collaborative develops, what it does, and how it functions, has a great deal to do with what the collaborative accomplishes. For a collaborative, process is particularly important, because it is not pre-determined, static, or simple. Process involves more than delivering programs; it involves the working of the collaborative itself" (Taylor-Powell, Rossing, & Geran, 1998, p. 81). The usefulness of the IPFR is dependent on the effectiveness of the process.

Purpose

A monthly interprofessional family review was developed to discuss families who are struggling with health or mental health concerns that complicate the community health worker's ability to support the family. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

Research Question

What are the perceptions of community health workers about the effectiveness of collaboration in interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges?

III. Methodology

Introduction

Healthy Families is an evidence-based national program model that provides education, resources, and support for the most vulnerable first time parents through intensive home visiting by community health workers. The model is being used in three rural communities in Virginia where community health workers, supported by health and mental health professionals, are part of a comprehensive, quality, cost-effective, community based intervention strategy. This interprofessional practice model is a successful, innovative, supportive, and cost effective way to achieve program and family goals. The risk profile for inclusion in Healthy Families matches risks for developing depression and other mental health issues. It is a voluntary, strength-based program with the following goals: 1) achieve positive pregnancy, maternal and child health outcomes, 2) promote optimal child development, 3) encourage positive parenting and, 4) prevent child abuse and neglect ("Healthy Families America", 2014).

A monthly interprofessional family review was developed to discuss families who are experiencing health or mental health concerns that complicate the home visitor's ability to support the family. The IPFR provides the home visitor access to interprofessional consultation, training, and practice resources that optimize health outcomes and it provides health professions students an opportunity to participate in an interprofessional collaborative practice as part of their educational experience. It also establishes an interprofessional team approach to care, connecting the CHW and health professionals as part of the same collaborative practice team, with the family at the center of the process.

The literature demonstrates that CHW effectiveness is enhanced by relevant, visible, regular, support, training, and supervision that is accessible, affordable, acceptable, and effective.

The interprofessional family review provides a model for supporting the CHW role. The CHWs have access to professional consultation, resources, and training; the students have access to high quality interprofessional clinical education; and the professionals have access to the CHWs insights and assessment based on a relationship of support with the family developed in the context of home visiting. An advance practice nurse, a clinical psychologist, and graduate level health professions students offer consultation and staff development for community health workers in family goal planning and support strategies for vulnerable families. Other professionals are invited depending on the needs of the families. Family challenges typically include both health and mental health concerns.

The interprofessional family review was developed in 2005 in response to CHW requests for additional support in developing effective family goal plans for families enrolled in an evidence based Healthy Families program that had significant health and mental health challenges. An advanced practice nurse, clinical psychologists and their students meet with the CHWs from three evidence based home visiting programs once a month to discuss families for whom the CHW requested an interprofessional family review. The CHW provides some baseline information about the family and identifies the main challenges in providing support for the family (Appendix B). A written request allows the nurse, the psychologists, and students to prepare to address the specific issues the CHW raised. The IPFR meets monthly. All members of the IPFR evaluate the session each time, providing a mechanism for continuous quality improvement (Appendix C). After each session the responses are reviewed and if appropriate, adjustments are made to the process. For example, the supervisor of two programs that were located 40 miles from the IPFR meeting commented that having an interprofessional family

review closer to their offices would allow them to continue to participate. As a result, monthly IPFRs were also scheduled at their office locations.

Case presentations are scheduled in advance and rotated between three program locations. To request a review of a case, the CHW and supervisor complete a short form and submit it to the IPFR coordinator (Appendix B) identifying the CHWs main concern about the family. At each IPFR, introductions are made and confidentiality is discussed. A confidentiality form is signed by each person who attends the IPFR. The CHW presents the family strengths and concerns uninterrupted until they pause for questions and discussion. The clinical psychologists, the advanced practice nurse, other CHWs, and Healthy Families program supervisors ask questions and provide information. At the end of the review, the coordinator summarizes the recommendations and asks the entire group if anything should be added to the summary. The IPFR concludes after each participant completes an evaluation of the review (Appendix C). The three evaluation questions are: 1) what was most helpful about the IPFR, 2) what was least helpful, and 3) how do you think we can improve the IPFRs?

Research Design

A cross-sectional descriptive research design was used for the process evaluation of CHW perceptions of IPFR effectiveness and used both quantitative and qualitative descriptive methods. Qualitative and quantitative data was elicited through a survey.

This capstone project was designed as a program evaluation. Issell (2009) states that program evaluations focus on whether the program was efficacious, effective, and efficient. "Efficacy refers to maximum program effectiveness under ideal conditions. Effectiveness is the realistic potential for achieving the desired outcome when the intervention is implemented in real time"(p. 290). Efficiency can refer to the amount of effect from the program intervention. While

efficacy and efficiency are important, this study will assess a dimension of the effectiveness of implementing the IPFR program. The effectiveness of the interprofessional team process is dependent on participants' perceptions of the collaborative team process. Assessing the implementation of the IPFRs through documentation and assessment is appropriate at this stage of the IPFR process. First, the process must be documented to determine whether the faculty, students, and CHWs are participating as planned. Secondly, it is important to assess process objectives and determine if they are occurring as planned (Issel, 2009, p. 288). The process assessment can inform decision-making on needed program modifications so that program objectives can be achieved (Issel, 2009).

Purpose

A monthly interprofessional family review was developed to discuss families who are struggling with health or mental health concerns that complicate the community health worker's ability to support the family. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

Research Question

What are the perceptions of community health workers about the effectiveness of collaboration in interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges?

Definition of Terms

Interprofessional collaborative practice. Interprofessional education and collaborative practice is defined as "occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (WHO, 2010).

Interprofessional family review. The interprofessional family review is a monthly team conference in which family support workers, who provide weekly home visits to provide education, resources, and support for vulnerable families, meet with an advance practice nurse, a clinical psychologist, and graduate level health professions students. The purpose of the IPFR is to support community health workers by providing consultation, guidance, training, and support for their work in supporting vulnerable families at risk for poor parenting outcomes. It is also an important interprofessional education and collaborative practice opportunity for health professions students.

Community health worker. The American Public Health Association, Community Health Worker section has adopted the following definition for community health worker:

> A community health worker (CHW) is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.
>
> A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy ("Community Health Worker", 2013).

Setting

Community health workers and their supervisors from three Healthy Families programs gather periodically for interprofessional family reviews. An advanced practice nurse and clinical psychologists who are faculty members in James Madison University's Department of Graduate Psychology also participate with their graduate students who are part of a class taught by one of the faculty members. All of the community health workers have successfully completed Healthy Families America core training about how to provide strength-based family support using evidence based strategies. Two of the programs serve very rural populations and one of the programs serves some families who live in a very rural community and some who live in a small but suburban community. The IPFR is offered twice each month, one of them in one of the two rural counties and one in Harrisonburg, Virginia. Six IPFRs were scheduled during fall 2013 and six IPFRs were scheduled during spring 2014. Community health workers and their supervisors attend together to insure that IPFR recommendations are integrated into family goal planning and ongoing supervision of the community health workers.

Description of the Sample

Community health workers employed by three Healthy Families programs in Virginia were surveyed. There were a total of ten CHWs employed by the three programs at the time of data collection. Nine CHWs who have attended at least two IPFRs took the survey in February or March 2014. One CHW was not available the day the survey was administered. Because the sample is small, to protect confidentiality, no other demographic information was collected from the CHWs. The other members of the IPFR team were not surveyed because the primary purpose of the current evaluation is to ascertain the perspectives of the CHWs. The results will inform the

necessity and utility of also surveying the other interprofessional team members during future program evaluation.

Measures

To assess the implementation of the IPFRs, the factors associated with effective collaboration experienced by CHWs were assessed using the Wilder Collaborative Factors Inventory (WCFI) (Mattessich, Murray-Close, & Monsey, 2001). The Wilder Collaboration Factors Inventory (Appendix D) is a tool used to assess the elements of effective collaboration.

Based on a systematic review of the literature, Mattessich, Murray-Close, and Monsey (2001) identified 20 collaborative factors to be tested in their inventory. Independent researchers identified success factors that each of eighteen studies demonstrated and blended the results from all of the studies into one set of factors. In 2000, an additional twenty-two studies provided confirmation of the original nineteen factors and led to the addition of one new factor (Mattessich et al., 2001, p. 67).

Each factor is associated with one to three survey questions. The Wilder Collaboration Factors Inventory (2001) identifies 20 collaborative factors measured by a total of forty questions (Appendix D). The twenty collaborative factors are grouped into six subscale categories: Environment, Membership Characteristics, Process and Structure, Communication, Purpose and Resources (Mattessich et al., 2001). The Environmental characteristics consist of the "social context in which the group exists". Membership characteristics consist of "skills, attitudes, and opinions of the individuals in the group, as well as the culture and capacity of the organizations that form the group." Process and Structure refer to the "management, decision-making, and operational systems of the collaborative initiative." Communication refers to the "communication processes used by collaborative partners to keep one another informed and

convey opinions to influence the group's actions." Purpose refers to the "reasons for the development of the collaborative effort, and the specific tasks the collaborative group defines as necessary to accomplish." Resources include the "financial and human input needed to develop and sustain the collaborative initiative" (Appendix D) (Mattessich et al. 2001, p. 14).

Each item in the inventory was provided as a statement. The CHWs participating in the study were asked to respond using a five point scale from strongly agree (5) to strongly disagree (1). For example, an item assessing the appropriate cross-section of members states: "The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish" (Appendix D). Ziff et al. (2010) surveyed fifteen coalitions of collaborative partners at five points in time using the WCFI. The samples sizes ranged from n=139 to n=196. They demonstrated that the majority of Wilder inventory categories had alphas approaching or exceeding .80, indicating adequate internal consistency reliability (Nunnaly & Bernstein, 1994): Purpose (.75), Member Characteristics (.74), Communication (.79), and Process/Structure (.82).

One limitation of the WCFI is that it lacks the opportunity to provide qualitative information about the usefulness of the IPFR. Therefore, for this study, two qualitative questions were added to the survey: 1) how do you think the IPFRs can be improved? and 2) what has changed in your practice or your ability to provide support services for families since the IPFRs were started? These questions allowed CHWs to express their perspectives about the IPFRs in their own word, increasing the likelihood of capturing the nuances in their perspectives that the inventory might overlook.

Procedures

The Wilder Collaborative Factors Inventory (Mattessich et al., 2001) and the two additional questions were completed by CHWs in February or March 2014. Participant descriptive characteristics collected were limited to a question about whether they have worked as a CHW for less than two years or more than two years. The purpose and the importance of completing the survey were discussed during the IPFR meetings before the survey was distributed. The researcher described the survey, requested participation, informed potential participants that participation was voluntary, and that they were free not to participate. The CHWs were informed that their participation and responses will have absolutely no bearing on any aspect of evaluation of their performance or participation in IPFRs. A consent letter was attached to the survey. (Appendix E). The surveys were distributed by the researcher with a plain manila envelope in which participants placed their completed survey. The researcher left the room while participants completed their surveys.

Protection of Human Subjects

The study was approved by the Institutional Review Board (IRB) at James Madison University (ID Number 14-0310). UVA's IRB Determination of Agent Form was submitted and approved by the UVA Institutional Review Board for Health Sciences Research (Appendix F). When evaluation data was collected from community health workers, no names or identifying information was collected and no information regarding patients was collected. No identifying information was shared and only aggregate data was reported.

No names and no specific identifying information were collected to trace individual responses. There was no way to link responses to a specific person or program. The researcher described the survey, requested participation, informed potential participants that participation

was voluntary, that they were free not to participate, and distributed surveys with a plain manila envelope in which participants placed their completed survey. The participants read the consent letter prior to completing the survey (Appendix E). The researcher left the room while participants completed their surveys. The completed surveys are stored in a locked cabinet in a secure office location at JMU.

Data Analysis Plan

Quantitative data analysis. The Wilder Collaboration Factors Inventory (Mattessich et al., 2001) identifies 20 collaborative factors measured by forty questions. Each of the forty items in the inventory is provided as a statement and participants are asked to respond using a five point scale from strongly agree (5) to strongly disagree (1). The Wilder Collaboration Factors Inventory (WCFI) guidelines provide a recommended strategy for analyzing the results.

Data from the 40 items and the answers to the qualitative questions was entered into an Excel spreadsheet with a row for each case and a column for each item on the survey. The data was carefully re-checked for any data entry errors. For the categorical items (i.e., length of time in CHW role less than or more than 2 years), a frequency and percent was calculated to describe the sample. The WCFI guidelines recommend summing and then averaging the scores for each factor. Each of the 20 collaborative factors is associated with between one and three items. Mattessich et al. (2001) recommend determining an average score for each factor by, 1) adding together the ratings for each item related to each factor, and 2) dividing by the total number of ratings for those items (i.e. the number of raters multiplied by the number of items for the factor). These two steps yield a standardized average score for each factor for the group. (Mattessich et al., 2001, p. 41) Each of the 40 items was summed and averaged to obtain a total score for each case. The WCFI factors and total score distributions, means, and standard deviations were

analyzed using Excel functions and using SPSS version 21. The subscale categories in the Wilder Collaboration Factors Inventory were computed and described.

Interpretation of factor scores. Derose, Beatty, and Jackson (2004) recommend that scores above 4 do not need follow up, scores between 3.0 – 3.9 are considered borderline and may require attention, and scores of 2.9 or lower indicate concern and should be addressed. Scores below 3.9 will be followed up so that the program can be modified to most effectively address the needs of all participants. Mattessich et al. (2001) recommend that if any score falls below 3.0, it should be discussed by the group as soon as possible, if scores fall between 3.0 – 3.9, steps may be needed to improve the quality of the interaction, and if most scores fall at 4.0 or above and just a few fall between 3.0-3.9, there are no major shortcomings to the collaboration. However, the authors caution against over confidence if the inventory results in good scores. Collaboration requires ongoing work to continue to be effective. The values of the standardized means, the means, and the standard deviations are recorded to the hundredths. For the purposes of this study, the borderline score will be defined as 3.00 – 3.99 to maintain consistency with standard APA formatting. For example, if scores fall between 3.00 – 3.99, steps may be needed to improve the quality of the interaction and if scores fall at 4.00 or above, there may be no major short-comings to the collaboration.

Qualitative data analysis. Two qualitative questions, "how do you think the IPFRs can be improved" and "what has changed in your practice or your ability to provide support services for families since the IPFRs were started?" were added to elicit qualitative data to guide program quality improvement plans. The WCFI and the qualitative questions were assigned the same case number.

The qualitative responses to the open-ended questions were typed into a word document. The responses were summarized and grouped by themes (i.e. thematic content analysis) using qualitative coding procedures. " This is essentially a comparative process, by which the various accounts gathered are compared with each other to classify those "themes" that recur or are common in the data set" (Green & Thorogood, 2014, p. 199). A second reviewer verified themes using qualitative coding procedures. The same case number as the one assigned for the survey were used so the qualitative responses can be linked to the quantitative survey responses. Comparison with the factor scores and the qualitative responses were used to ascertain any salient differences or similarities.

IV. Results

Nine community health workers employed by three Healthy Families who had attended at least two interprofessional family reviews completed the survey in February or March 2014. Four (44%) of the nine had been in the role of community health worker for less than two years and five (56%) of the nine had been in the role longer than two years.

To answer the research question, "what are the perceptions of community health workers about the effectiveness of collaboration in interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges?" a standardized average group score for each of the 20 factors in the Wilder Collaboration Factors Inventory (Mattessich et al. 2001) was calculated. Means and standard deviations were calculated for the six subscale categories. Qualitative responses were grouped by themes using qualitative coding procedures. Comparison with the factor scores and the qualitative responses were used to ascertain any salient differences or similarities.

Quantitative Results

By following the procedures recommended by Mattessich et al. (2001), a standardized average group score for each of the 20 factors was calculated (Table 3). The standardized mean scores for the 20 factors ranged from 3.28 to 4.67 and are presented in ranked order from highest to lowest in Table 5. Of the twenty collaboration factors evaluated, the standardized means of 5 (25%) were above 4.00 (not needing follow up) and 15 (75%) were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction). There were no scores that were less than 3.00 which would require immediate follow up. The highest scores occurred for "skilled leadership"; "mutual respect, understanding and trust", and "members see collaboration in their self-interest" while the lowest scores occurred for items occurred for "multiple layers of

participation", "appropriate cross section of members", and "sufficient funds, staff materials and time". The standardized mean for five factors was calculated at 4.00 or above, twelve factors between 3.50 – 3.99, and three factors between 3.00 – 3.49 (Figure 1).

Each of the subscale categories in the WCFI is associated with between two and six collaborative factors (Table 3). On a five point scale the mean and standard deviation was calculated for each subscale category: Environment (M = 3.80, SD = 0.38); Membership Characteristics (M = 3.98, SD = 0.39); Process and Structure (M = 3.71, SD = 0.56); Communication (M = 3.89, SD = 0.79); Purpose, (M = 3.79, SD = 0.67); and Resources (M = 3.85, SD = 0.34) from the survey sample of nine respondents (Table 3 and Table 4).

Derose, Beatty and Jackson (2004) recommend that scores above 4 do not need follow up, scores between 3.0 – 3.9 should be considered borderline and may require attention, and scores of 2.9 or lower indicate concern and should be addressed. All of the scores were between 3.71 and 3.98, which are in the upper part of the borderline range (3.00 – 3.99) and may need attention.

Qualitative Results

The qualitative responses to the two questions "how do you think the IPFR can be improved?" and "what has changed in your practice or your ability to provide support services for families since the IPFR started?" were independently reviewed by the researcher and a Ph.D. prepared nursing researcher with knowledge of qualitative methods. Themes were identified and compared. In response to the question "how do you think the IPFR can be improved?" the responses were grouped into the following themes: "involve additional team members including families, other professionals, and other community partners" (4 responses); "focus on practical advice, resources, and guidelines" (4 responses); and "share success stories" (2 responses) (Table

6). The theme of "involving additional team members including families, other professionals, and other community partners" included inviting "more people in other professions to be a part of it" and "maybe have a family attend that would be willing to share". The theme of "focus on practical advice, resources, and guidelines" included the CHW comment "provide more practical in-home resources for the family support worker to bring into the crisis. Provide a tool bag for the FSW." Other relevant responses to the question that were not associated with qualitative themes included "clarify goals, mission and vision" (1 response); "team relationship building" (1 response); and "less emphasis on counseling referrals" (1 response).

In response to the question "what has changed in your practice or your ability to provide support services for families since the IPFRs started?", the responses were grouped into the following themes: "helpful suggestions are shared that I can to use with families" (8 responses); "I am able to see a different perspective based on new knowledge" (5 responses); and "I receive needed encouragement and support for my work" (3 responses) (Table 6). Examples of the theme "helpful suggestions are shared that I can use with families" include "suggestions from professionals are a great help to take back while working with families" and "I enjoy when practical advice is given. I have implemented techniques with families." Examples of the theme "I am able to see a different perspective based on new knowledge" include "talking about families helps me to process and look at the big picture" and "I have been exposed to different cases and this has enriched my knowledge on how to be a more effective FSW."

V. Discussion

Overview

A monthly interprofessional family review was developed to discuss families who are struggling with health and mental health concerns that complicate the community health worker's ability to effectively support the family. The community health workers participate in interprofessional family reviews (IPFR) of their cases in order to receive support, consultation, training, and guidance for their work. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

The factors associated with effective collaboration were assessed using the Wilder Collaborative Factors Inventory (WCFI) (Mattessich et al., 2001). The Wilder Collaboration Factors Inventory identifies 20 collaborative factors associated with successful collaboration which are measured by a total of forty questions (Appendix D). The twenty collaborative factors are grouped into six subscale categories: Environment, Membership Characteristics, Process and Structure, Communication, Purpose, and Resources (Mattessich et al., 2001). Two qualitative questions were added to the survey: 1) how do you think the IPFRs can be improved? and 2) what has changed in your practice or your ability to provide support services for families since the IPFRs were started? These questions allowed CHWs to express their perspectives about the IPFRs in their own words, increasing the likelihood of capturing the nuances in their perspectives that the inventory might overlook.

Each item in the inventory was provided as a statement. The CHWs participating in the study were asked to respond using a five point scale from strongly agree (5) to strongly disagree (1), and a mean score for each statement was calculated. Derose et al. (2004) recommend that

mean scores above 4 do not need follow-up, scores between 3.0 – 3.9 should be considered borderline and may require attention and scores of 2.9 or lower indicate concern and should be addressed. Mattessich et al. (2001) recommend that if any score falls below 3.0, the item should be discussed by the group as soon as possible, if scores fall between 3.0 – 3.9, steps may be needed to improve the quality of the interaction, and if most scores fall at 4.0 or above and just a few fall between 3.0-3.9, there are no major shortcomings to the collaboration. However, the authors caution against over confidence if the inventory results in good scores. Collaboration requires ongoing work to continue to be effective. The values of the standardized means, the means, and the standard deviations are recorded to the hundredths. For the purposes of this study, the borderline score was defined as 3.00 – 3.99 to maintain consistency with standard APA formatting. For example, if scores fall between 3.00 – 3.99, steps may be needed to improve the quality of the interaction and if scores fall at 4.00 or above, there may be no major short-comings to the collaboration.

WCFI subscale categories. All of the subscale category scores were between 3.71 and 3.98 which is in the upper part of the borderline range (3.00 – 3.99) and steps may be needed to improve the quality of the collaborative interaction for the IPFRs to continue to be perceived by the CHWs as useful and effective (Table 3 and Table 4). There are no standardized mean scores below 3.00 indicating that the IPFR has no issues that need urgent follow up (Derose et al., 2004; Mattessich et al., 2001).

Although the sample size is small, for the subscale category of Communication (M = 3.89, SD = 0.79), the standard deviation indicates that the range of responses is more varied than for other subscale categories. Table 4 illustrates that the minimum response was 2.20 and the maximum response was 4.80, which indicates a need for follow up on interprofessional team

communication. Team members reported varied experiences in the communication subscale category. Similarly, the subscale category Purpose (M = 3.79, SD = 0.67) may need follow up since there is wide variance between the minimum response (2.43) and the maximum response (4.86).

Collaborative factors. By following the procedures recommended by Mattessich et al. (2001), a standardized average group score for each of the 20 collaborative factors was calculated (Table 3). The standardized mean scores for the 20 factors ranged from 3.28 to 4.67.

Of twenty collaboration factors evaluated, the standardized means of 5 factors (25%) were above 4.00 (not needing follow up) and 15 factors (75%) were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction), confirming the need for follow up to improve the quality of the collaboration, but noting that the CHWs perceive the IPFR collaboration as effective in a number of important areas. The majority of the collaborative factor scores fall between 3.00 and 3.99 meaning that for the IPFR, steps may be needed to improve the quality of the collaborative interaction, but there are not issues that need urgent follow up.

The standardized mean for five factors was calculated at 4.00 or above, twelve factors between 3.50 – 3.99, and three factors between 3.00 – 3.49. Figure 1 illustrates the frequency of factor standardized mean scores in the three categories. While it is helpful to see the distribution of standardized mean scores and note that the majority of the standardized mean scores are between 3.50 and 3.99, the recommendations for follow up on WCFI results between 3.00 and 3.99 will be followed. The intent is not to create a new category for follow up, but to note the distribution of the standardized means.

The highest scores, scores at or above 4.00, occurred for “skilled leadership” (M = 4.67); “mutual respect, understanding and trust” (M = 4.44); “members see collaboration in their self-

interest" (4.33); "favorable political and social climate" (M = 4.22); and "shared vision" (M = 4.00). The lowest scores, scores between 3.00 – 3.49, occurred for "multiple layers of participation" (M = 3.28); "appropriate cross section of members" (M = 3.44) and; "sufficient funds, staff, materials, and time" (M = 3.44) (Table 5 and Figure 1).

Relevance to the Theoretical Framework

Members view "collaboration in their self-interest" (M = 4.33), a factor defined by Mattessich et al. (2001) as "collaborating partners believe that they will benefit from their involvement in the collaboration and the advantages of membership will offset the costs such as loss of autonomy" (p. 16). The standardized mean of this collaborative factor (M=4.33) indicates that the CHWs perceive that there are benefits available to them as a result of participation in the IPFR, consistent with the social exchange theory concept of exchange. The social exchange theory assumes that interpersonal interactions are essential to understanding collaborative groups (D'Amour et al., 2005; Gitlin et al., 1994). Negotiation, or the cost to an individual of contributing valued knowledge or skills to the group, is offset against the perceived benefit the individual gains from participation. CHWs involved in the IPFR see collaboration in their self-interest, meaning that an application of the social exchange theory's concepts of negotiation and exchange to the experience of participating in IPFRs, results in the CHW's perception of the IPFR process as effective and useful. The qualitative responses to the question "what has changed in your practice or your ability to provide support services for families since the IPFRs started?" included the following comments: "helpful suggestions are shared that I may be able to use with families" (8 responses), "I am able to see a different perspective based on new knowledge" (5 responses), and "I receive needed encouragement and support for my work" (3

responses) (Table 6). At the time data was collected, CHWs perceived the cost-benefit ratio as favoring participation and perceived the IPFRs as useful.

The factor "sufficient funds, staff, materials and time" (M = 3.44) received one of the lower collaborative factor mean scores. The findings for this item may be impacted by program funding issues encountered in the last two years that are threatening the program's ability to pay for fulltime benefits for staff members. Also, a recent five year award in support of the three programs comes with the expectation of participation in additional training each month, resulting in less time for home visits and less flexibility to accommodate family needs and crises. It will be important to work with both community health workers and their supervisors to explore the implications of the issues raised.

Relevance to Community Health Worker Effectiveness

Community health worker effectiveness is dependent on relevant, regular, support, training, and supervision that is linked to health and human service professionals and the healthcare system (Arvey & Fernandez, 2012; Balcazar et al., 2011; Frenk et al., 2010; Glenton et al., 2013; Lewin et al., 2010; Pallas et al., 2013; Perry & Zullinger, 2012; Singh & Chkshi, 2013; WHO, 2008;). Community health workers participate in interprofessional family reviews (IPFR) of their cases in order to receive support, consultation, training, and guidance for their work. The CHW responses to the WCFI survey and qualitative questions indicate that at the time of data collection, the IPFR goals were being met. The CHW responses also confirm that the IPFRs are addressing elements associated with CHW effectiveness.

The qualitative findings affirm that the goals of the IPFR are well aligned with the CHWs responses to the question "what has changed in your practice or your ability to provide support services for families since the IPFRs started" (Table 6). CHWs noted that they received "helpful

suggestions and practical tools to use with families" (training, guidance), "encouragement and support" (support), and a "different perspective based on new knowledge" (consultation, training). At the time that the CHWs completed the survey, the CHWs responses confirm that IPFRs offer consultation, guidance, training and support, all elements that are included in a supervisory model that is congruent with the literature on maximizing CHW effectiveness.

CHWs also noted that the IPFR is characterized by its members having a shared vision (M = 4.00). CHWs also note that "mutual respect, understanding and trust" are present in the IPFR (M = 4.44) (see Table 3 and Table 5). Mattessich et al. (2001) identified twenty-seven research studies that identify mutual respect, understanding and trust as essential to the success of a collaborative (Mattessich et al., 2000). One of the nine principles of good community campus partnership identified by CCPH is "the relationship between partners is characterized by mutual trust, respect, genuineness, and commitment. (Seifer et al., 2000)" and one of the four IPEC Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011) is *Values and Ethics for Interprofessional Practice* with a specific competency "to develop a trusting relationship with patients, families and other team members" (p.17). It is very important that the CHWs perceive themselves as full members of the healthcare team. A challenge to interprofessional collaborative practice teams can be a perception of hierarchical differences and power differentials, which can undermine trust. CHWs' perception that the IPFRs are characterized by mutual respect, understanding and trust is an indication that professional hierarchy is not undermining the effectiveness of the IPFR. The favorable rating is an important factor that contributes to the perceived effectiveness of the IPFR.

The community health workers perceive that the IPFR has "skilled leadership" with the skills needed to facilitate collaboration; the membership of the collaborative is characterized by

"mutual respect, understanding and trust"; participation in the "collaboration is in their self-interest"; the "political and social environment is favorable" to a collaborative project like this one; and there is a "shared vision" with other participants in the collaborative. However, it should be noted that the qualitative responses to the question "how do you think the IPFRs can be improved?" revealed that the CHWs would like to be sure to "focus on practical advice, resources and guidelines" (4 responses) and recommend that "success stories are shared" (2 responses) (Table 6). Although they rated team leadership as strong, there were important suggestions that a skilled leader will need to address.

Relevance to Maternal Depression and Psychosocial Support

Community health workers (CHWs) provide services for the most vulnerable families in a community who are at risk for many of the factors that can result in poor parenting outcomes. Community health workers have an essential role in supporting vulnerable families but may lack the knowledge and skills to identify and respond to symptoms associated with depression and other conditions that place the family at risk for poor parenting outcomes. Psychosocial support through home visitation by community health workers who in turn are supported by health and mental professionals can be part of a comprehensive, quality, cost effective, community-based intervention strategy. Home visitors frequently report family situations that are challenging and difficult to assess. The families frequently need resources beyond what CHWs are prepared to provide. Larner, Halpern and Harkavay (1992) noted that "the most significant element of supervision was the support it provided for the family workers in their often stressful work with families" (p. 194). CHWs who attend the IPFR view their participation in the "collaboration in their self-interest" (M = 4.33) (Table 3). They also report that they receive "needed encouragement and support for their work" (Table 6). An effective interprofessional

collaborative practice model can provide needed support for community health workers to achieve important health and mental health goals with the most vulnerable families in a community.

It will be important to explore the implications of the relatively low standardized mean collaborative factor score for "multiple layers of participation" (M=3.28). It includes the item "when the collaborative group makes major decisions, there is always enough time for members to take information back to their organization to confer with their colleagues about what the decision should be" (M = 3.28). Research evidence indicates that peer support can be an effective strategy in working with parents at risk for postpartum depression (Dennis & Hodnett, 2009). However, if CHWs do not have the time to effectively plan their strategy for working with families based on the information shared in the IPFR, the effectiveness of the IPFR is diminished.

In response to the question "how do you think the IPFRs can be improved?" there were four responses suggesting that the IPFR "focus on practical advice, resources and tools" that can be implemented by CHWs in the home since many vulnerable families are unwilling to keep referral appointments with community professionals. Failure to address this need could impact the CHW perception about the effectiveness of the IPFRs and whether the social exchange concepts of exchange and negotiation favor continued participation.

Relevance to Interprofessional Collaborative Practice

The World Health Organization (2010), accrediting bodies for health professions education, and federal funders support collaboration as an important way to optimize health outcomes for increasingly complex healthcare challenges. At the same time, colleges and universities are prioritizing educating students to be "collaboration ready" when they enter the

workforce (IPEC, 2011). The World Health Organization (2010) has advised that collaborative practice strengthens health systems and improves health outcomes. Interprofessional collaborative practice is a strategy to address the complex health challenges facing us nationally and globally (Barr, 2002; McKeown, Blundell, Lord, & Haigh, 2005; IOM, 2013). Supporting families at risk for poor parenting outcomes is a complex global health challenge that demands an interprofessional collaborative practice strategy.

The Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011) provide a helpful framework to define issues and offer guidance in competency development for the IPFR team. Whereas the WCFI subscale categories and the IPEC Core Competencies are not perfectly aligned, there is utility in describing alignments that can guide competency development for the interprofessional family review teams. With that in mind, the WCFI subscale categories used in this study have been matched with the IPEC Core Competencies (Appendix O), to guide the development of intervention strategies with the collaborative practice team to address areas of concern. Items associated with factors may be informed by more than one core competency (Table 7).

The WCFI subscale category "Membership Characteristics" relates to the IPEC core competency *Values and Ethics for Interprofessional Practice* in which team members "work with individuals of other professions to maintain a climate of mutual respect and shared values" (IPEC, 2011, p. 17). The WCFI subscale categories of "Process and Structure" and the factor "skilled leadership" under the subscale category "Resources" relate to the IPEC core competency *Interprofessional Teamwork and Team-based Practice* in which collaborators "apply relationship building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-/population centered care that is safe, timely, efficient, effective, and

equitable" (IPEC, 2011, p. 24). The WCFI subscale category "Communication" relates to the IPEC core competency *Interprofessional Communication Practices* in which team members "communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease" (IPEC, 2011, p. 22). The WCFI subscale category "Purpose" relates to the IPEC core competency (2011) *Roles and Responsibilities for Interprofessional Practice* in which collaborators "use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served" (p. 20). The WCFI subscale category "Environment" and factor 19: "sufficient funds, staff, materials, and time" are not associated with a core competency. It is the opinion of the author that they are not responsive to interprofessional competency development at the individual and team level but are issues that are descriptive of the larger environment or context in which collaboration is taking place (Table 7 and Appendix G).

The IPEC Core Competencies provide a helpful framework for addressing the issues raised by the study and facilitate assessment of progress on competency development. For example, to address the suggestion of involving additional team members and the CHW response to the factor assessing whether the team has the "appropriate cross section of members" (M=3.44), a specific roles/responsibilities competency states "engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources to provide care that is safe, timely, efficient, effective, and equitable" (IPEC, 2011) (Appendix O). It is important to explore what other members are perceived as needed "to provide care that is safe, timely, efficient, effective, and equitable". The qualitative data offer possible answers to that question (Table 6). To the question, "how do you think the IPFRs can be improved?", there

were four responses suggesting that additional team members including the family, other professionals, and community partners join the group. Suggesting that other professionals and community partners are invited has been an open opportunity for all members of the IPFR team.

Implications for Nursing Practice

Within two weeks of collecting data from the CHWs from three Healthy Families programs that meet at two locations for monthly IPFRs, the author was contacted separately by the two supervisors for the three programs. In one case, because one of the CHWs was working with a family who was particularly challenging and she needed support and professional consultation, the supervisor requested an interprofessional family review within the week. The request affirmed that "members see collaboration in their self-interest" and that the CHW and supervisor view the IPFRs as effective, useful, and a source of support. In the second case, the supervisor of another involved program, asked for a meeting with the author to discuss the IPFRs. The supervisor also invited a program supervisor of a program that is not currently involved in the IPFRs. They wanted to discuss ways to make the IPFRs most useful for their staff members. Their willingness to engage in the conversation that resulted was very encouraging and, upon reflection, may not have occurred without the awareness that was created by conducting this research on the perceptions of CHWs about the effectiveness of the IPFR. The questions in the survey addressed factors associated with successful collaboration, and were not about a hierarchy of authority related to addressing family health needs. Based on the discussion, an IPFR co-facilitated by the supervisors and the author will occur in May 2014. Both of the examples are positive developments in the ongoing development of IPFRs in the context of interprofessional collaborative practice. CCPH's ninth principle of partnership states that collaborative "partnerships take time to develop and evolve over time"(Seifer & Maurana, 2000,

p. 8). It is important to evaluate collaborative functioning and respond to the findings thoughtfully and collaboratively.

The IPFRs are explicitly described as reflective consultation in the new Healthy Families America national accreditation standards dated April 1, 2014. IPFR documentation will be important to individual program self-study materials for upcoming national program accreditation.

Nurses are well equipped to take a leadership role in assessing, planning, implementing and evaluating health interventions for families and communities. Complex health challenges require coordinated interprofessional interventions that can involve community health workers to provide culturally sensitive education, resources and support for vulnerable populations. Nurses must evaluate the effectiveness of collaboration in order to facilitate care that is safe, timely, efficient, effective, and equitable. Interprofessional team functioning can be modified based on evaluation results to promote successful collaboration and optimal patient, family and community health outcomes. The survey used in this study can be used to evaluate collaboration in interprofessional collaborative team based practices. The IPEC Competency Survey instrument (2012) can also be used to assess progress on interprofessional core competency development (Dow, Diaz Granados, Mazmanian, & Retchin, 2014).

Community health workers are an important component of the health care team and can be critical to achieving improved health and well-being for the nation's most vulnerable and at risk families and communities. Effective, useful, acceptable, accessible, and affordable models are needed that can provide interprofessional consultation and support needed by community health workers. An effective interprofessional consultation model can provide support for the community health worker role in supporting families. It is important to explore issues raised

through the WCFI and the qualitative questions, and to continue to evaluate the perceptions of the CHWs about the effectiveness of the IPFRs. It will be important to use the Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011) as a framework for defining issues, developing strategies, and evaluating progress.

Opportunities for students to observe and participate in interprofessional collaborative practice as a part of their clinical education is essential if health professions education is to achieve the goal of educating students to be part of a collaboration ready workforce in the 21st century. The CHWs, the students and the faculty are simultaneously teachers, learners and consultants, thereby offering a rich opportunity to address the core competencies for interprofessional collaborative practice outlined by the Interprofessional Education Collaborative (IPEC, 2011).

As public health leaders, nurses can develop and facilitate effective interprofessional collaborative practice models to address important and complex global health challenges that impact our communities, and provide an important nursing perspective to optimize patient, family and community health outcomes. Support for community health workers through IPFRs, who are providing support for families at risk for poor parenting outcomes, can be effective and useful. Factors and competencies associated with successful interprofessional collaboration must be regularly assessed and developed for the collaboration to continue to be effective.

Strengths and Weaknesses of the Design

The strength of the design is that it provided insights from CHWs that may help to improve the IPFR process so as to be increasingly responsive to CHW needs. A weakness of the design is that the survey data was collected from only nine CHWs and the low numbers limit the ability to generalize results across settings. Other weaknesses include the lack of data on

whether the IPFR made a difference to family outcomes, and that no baseline assessment of collaboration was collected prior to initiating the IPFR.

Implications for Further Research, Study and Development

It will be important to survey supervisors, faculty, and students to evaluate their perceptions about the effectiveness of the IPFRs, since they are also members of the collaborative team. The results of the survey of faculty clinicians and students can be analyzed and compared to the CHW and supervisor responses. The two studies could guide collaborative team development and core competency development. It will be important to collect data on whether the IPFRs made a difference to family outcomes. Documentation and accountability processes for interprofessional family reviews also need further development.

The survey used in this study can be used to evaluate other community based interprofessional collaborative team based practices. Interventions can be planned using the IPEC Core competencies (2011). The IPEC Competency Survey instrument can also be used to assess progress on interprofessional core competency development (Dow, Diaz Granados, Mazmanian, & Retchin, 2014).

Published in April 2014, a large cross site evaluation titled "Making replication work: Building infrastructure to implement, scale up, and sustain evidence-based early childhood home visiting programs with fidelity" (Boller et al. 2014) identified key findings that are important to this capstone project. One of the key findings was that the quality of the collaboration with the partners was associated with achieving their goals and that more research is needed on the features of collaboration that lead to outcomes for families and children. The findings in this capstone project can inform future research that is helpful in addressing this need.

Products of the Capstone

The products of the capstone are: a completed capstone project; an abstract accepted for presentation at a peer reviewed international conference, All Together Better Health; and a manuscript to be submitted to Public Health Nursing: a peer reviewed journal. See Appendix H for the guidelines for abstract submission at the conference and for the guidelines for manuscript submission to the PHN journal (Appendix I). Accepted presentations at peer reviewed international conferences include the following:

Akerson, E., Glick, D., Kane, C., Bullock, L., Yoder, L., Schulte, T., Stewart, A. (2014, June). *Interprofessional Family Reviews: Collaborative Support with Community Health Workers* Poster Presentation at All Together Better Health Conference, Pittsburgh, PA.

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Tables & Figures

Table 1. Community Health Worker Effectiveness Study Table.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
Glenton, Colvin, Carlson, Swartz, Lewing, Noyes & Rashin (2013) Cochrane Review	The overall aim of the review is to explore factors affecting the implementation of LHW programs for maternal and child health. For LHW programs to be effective, a better understanding of the factors that influence their success and sustainability is needed.	53 studies describing the experiences of Lay Health Workers (LHWs), program recipients, and other health workers. LHWs in high income countries mainly offered promotion, counseling and support. In low and middle income countries, LHWs offered similar services but sometimes also distributed supplements, contraceptives and other products, and diagnosed and treated children with common childhood diseases.	This review addresses these issues through a synthesis of qualitative evidence and was carried out alongside the Cochrane review of the effectiveness of LHWs for maternal and child health.	Selection Criteria: Studies that used qualitative methods for data collection and analysis and that focused on the experiences and attitudes of stakeholders regarding LHW programs for maternal or child health in a primary or community healthcare setting.	Rather than being seen as a lesser trained health worker, LHWs may represent a different and sometimes preferred type of health worker. The close relationship between LHWs and recipients is program strength. However, program planners must consider how to achieve the benefits of closeness while minimizing the potential drawbacks. Other important facilitators may include the development of services that recipients perceive as relevant; regular and visible support from the health system and the community; and appropriate training, supervision and incentives.	The groups were not blinded a possible source of bias. There were three therapists who were specialists and three who were non-specialists. A significantly greater reduction in EPDS scores was found for women treated by non-specialists compared with specialists' at 4.5 months. This may be an important factor in treatment outcome. Use of antidepressants was not addressed in the inclusion/exclusion criteria and may have been an important factor to include.
Lewin, Munabi-babinqumira, Glenton, Bosch-Capblanch,	To assess the effects of LHW interventions in primary and community health care on	Eighty-two studies met the inclusion criteria. These showed considerable diversity in the targeted health issue	RCT (Cochrane Review)	Selection criteria: RCTs of any intervention delivered by LHWs (paid or voluntary) in primary or	LHWs provide promising benefits in promoting immunization uptake and breastfeeding, improving TB treatment outcomes, and reducing child morbidity	LHWs provide promising benefits in promoting immunization uptake and breastfeeding, improving TB treatment outcomes, and reducing child morbidity and

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
Odgaard-Jensen, Johansen, Aja, Zwarenstein, Scheel (2010) Cochrane review	maternal and child health and the management of infectious diseases.	and the aims, content, and outcomes of interventions. The majority were conducted in high income countries (n = 55) but many of these focused on low income and minority populations.		community health care and intended to improve maternal or child health or the management of infectious diseases.	and mortality when compared to usual care. For other health issues, evidence is insufficient to draw conclusions about the effects of LHWs. The evidence is insufficient to draw conclusions regarding effectiveness, or to enable the identification of specific LHW training or intervention strategies likely to be most effective.	mortality when compared to usual care. For other health issues, evidence is insufficient to draw conclusions about the effects of LHWs. Health planners could consider including LHW interventions as one component of health service strategies in these areas.
Pallas, Minhas, Perez-Escamilla, Taylor, Curry & Bradley (2013)	A systematic review of the determinants of success in scaling up and sustaining community health worker (CHW) programs in low- and middle-income countries (LMICs).	Nineteen academic articles with data from sixteen countries were evaluated by two independent reviewers for empirical data on sustainability of CHW programs.	Seven of the studies used quantitative methods with either cross-sectional (n = 4) or longitudinal (n = 3) designs. Six of the studies used qualitative methods, such as in-depth interviews, focus groups, or qualitative observation, and 4 articles	Two independent reviewers applied exclusion criteria to identify articles that provided empirical evidence about the scale-up or sustainability of CHW programs in LMICs, then extracted data from each article by using a standardized form. We analyzed the resulting data for determinants and themes through iterated categorization.	Scaling up and sustaining CHW programs in LMICs requires effective program design and management, including adequate training, supervision, motivation, and funding; acceptability of the program to the communities served; and securing support for the program from political leaders and other health care providers.	As a systematic review of the academic literature, this study did not include data that were unpublished or evidence from the gray literature, both of which may have valuable lessons learned, including relating to barriers that ultimately lead to program failure. Our results may therefore over represent features of CHW programs that can be measured and written about more easily.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
			retrospective case studies.			
Viswanathan Kraschnewski, Nishikawa Morgan Thieda Honeycutt, Lohr, Jonas (2009)	A systematic review of the evidence on characteristics of community health workers (CHWs) and CHW interventions, outcomes of such interventions, costs and cost effectiveness of CHW interventions, and characteristics of CHW training.	53 studies on characteristics and outcomes of CHW interventions, 6 on cost-effectiveness, and 9 on training. CHWs interacted with participants in a broad array of locations, using a spectrum of materials at varying levels of intensity. We classified 8 studies as low intensity, 18 as moderate intensity, and 27 as high intensity	UNC Evidence-based Practice Center methods of dual review of abstracts	Selection Criteria UNC Evidence-based Practice Center methods of dual review of abstracts, full-text articles, abstractions, quality ratings, and strength of evidence grades.	CHWs can serve as a means of improving outcomes for underserved populations for some health conditions.	The effectiveness of CHWs in numerous areas requires further research that addresses the methodological limitations of prior studies and that contributes to translating research into practice. Limited evidence described characteristics of CHW training; no studies examined the impact of CHW training on health outcomes.
Wagner, Spiker, & Linn (2002)	To investigate the PAT programs effectiveness with low income families	665 families involved in a multi-site randomized evaluation	RCT	Parents as Teachers program effectiveness with 665 families	Observed effects on parenting and child development were generally small but more consistently positive effects were noted for very low income parents and their children relative to more moderate income parents.	The study demonstrates effectiveness of the PAT curriculum with very low income families and has policy implications for the design and implementation of parenting programs for very low income families.
Whipple & Nathans (2005)	To describe the sociodemo-graphics, program involvement,	115 families involved in a rural HFA program.	Descriptive quantitative and qualitative study	Healthy Families program model participation by the 115 families	HFA-involved families fared well in concrete areas, yet demonstrated fewer positive changes in abstract goals. Subgroup analyses revealed	The effectiveness of persistent outreach in a geographically-dispersed area with families who do not engage with home visitors merits reexamination.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
	and outcomes for 115 families involved in a rural HFA program.				relationships between mothers' socio-demographic characteristics and outcomes.	While the riskiest families should always be given the opportunity to participate, we suggest that rural implementation may be most effective when utilized as part of a triage case management model which better integrates child welfare, mental and physical health care systems.
Zigler, Pfannenstiel, & Seitz (2008)	To test hypothesized models of how the Parents as Teachers (PAT) program affects children's school readiness and subsequent third-grade achievement.	5,721 kindergarten children who were chosen to be representative of all children beginning public school in the state of Missouri in the fall of 1998–2000	Replication and extension of an earlier study, using a larger sample, a better measure of poverty status, and new longitudinal data	The students were evaluated in kindergarten and 4-5 years later in third grade. 82% of the original kindergarten sample was evaluated in 3rd grade.	The findings add to the evidence that the PAT home visiting program holds promise as a primary prevention program. The authors demonstrate how parenting practices (including reading to children and enrolling them in preschool) promote both school readiness and subsequent academic achievement, but they also remind us of the pervasive effects of poverty.	The causal models, which postulated both direct and indirect effects of PAT, were strongly supported by the data.

Table 2. Postpartum Depression Study Table – Prevention and Treatment.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
Cooper et al. (2003)	To evaluate the long-term effect on maternal mood of three psychological treatments in relation to routine primary care.	193 Primiparous women identified through the birth records were screened between January 1990 and August 1992 for mood disturbance in the early post-partum period. Women with PPD were invited to participate in the study.	RCT	The women were assigned randomly to one of four conditions: routine primary care, non-directive counseling, cognitive behavioral therapy or psycho-dynamic therapy. They were assessed immediately after the treatment phase (at 4.5 months) and at 9, 18 and 60 months post-partum.	The benefit of treatment was no longer apparent by 9 months postpartum. Treatment did not reduce subsequent episodes of PPD.	The groups were not blinded a possible source of bias. There were three therapists who were specialists and three who were non-specialists. A significantly greater reduction in EPDS scores was found for women treated by non-specialists compared with specialists' at 4.5 months. This may be an important factor in treatment outcome. Use of antidepressants was not addressed in the inclusion/exclusion criteria and may have been an important factor to include.
Dennis and Hodnett, (2009)	To assess the effects of all psychosocial and psychological interventions compared with usual postpartum care in the reduction of depressive symptomatology.	Ten trials met the inclusion criteria, of which 9 trials reported outcomes for 956 women	RCT & Quasi-randomized trials (Cochrane Review)	**Selection criteria**: All published, unpublished, and ongoing randomized controlled trials and quasi-randomized trials of psychosocial or psychological interventions where the primary or secondary aim was a reduction in depressive symptomatology.	Any psychosocial or psychological intervention, compared to usual postpartum care, was associated with a reduction in the likelihood of continued depression, however measured, at the final assessment within the first year postpartum. Both psychosocial and psychological interventions were effective in reducing depressive symptomatology. Trials selecting participants	Although the methodological quality of the majority of trials was, in general, not strong, the meta-analysis results suggest that psychosocial and psychological interventions are an effective treatment option for women suffering from postpartum depression. The long-term effectiveness remains unclear. Larger trials are needed to provide clear conclusions about specific intervention benefits.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
					based on a clinical diagnosis of depression were just as effective in decreasing depressive symptomatology as those that enrolled women who met inclusion criteria based on self-reported depressive symptomatology.	Six of the studies were small (n <50), one study lacked a true control group, one study had a control group that had a high level of social adversity compared to the intervention, three studies noted variations in the intervention that may have impacted study results.
Dennis (2003)	"To evaluate the effect of peer support (mother to mother) on depressive symptomatology among mothers identified as high risk for postpartum depression"	"Forty-two mothers in British Columbia were identified as high risk using the Edinburgh Depression Scale and randomly assigned to a control group (standard prenatal care) or an experimental group."	RCT – pilot	"The experimental group received standard care plus telephone based support, initiated within 48-72 hours of randomization, from a mother who previously experienced postpartum depression and attended a 4 hour training session." Research assistants conducted follow up assessments on a number of outcomes, including depressive symptomatology at 4 and 8 weeks post-randomization.	"At the four week assessment, 40.9% of the mothers in the control group scored >12 on the EDS compared with only10% in the experimental group. "At the 8 week assessment, 52.4% of the mothers in the control group scored >12 on the EDS compared with 15% of the mothers in the experimental group. "Telephone based peer support may effectively decrease depressive symptomatology among new mothers The high maternal satisfaction with, and acceptance of the intervention suggests that a larger trial is feasible"	Research assistants were blinded to group allocation. Randomization was done using consecutively numbered opaque envelopes. There is no power analysis but the study is a pilot study. "A larger RCT is needed. The sample was small (n=42). Evaluation of outcome was limited to self report. There was insufficient power to detect group differences related to secondary outcomes."
Dennis et al. (2009)	To evaluate the effectiveness of telephone based peer support in	Seven health regions across Ontario, Canada. Seven hundred one women in the first two	Multisite RCT	"Individualized telephone based peer support, initiated within 48-72 hours of	"There was a positive trend in favor of the intervention group for maternal anxiety but not loneliness or use of	The sample size, randomization and blinding procedures were strong elements of the study. The

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
	the prevention of postnatal depression.	weeks postpartum identified as high risk for postnatal depression using the Edinburg Postnatal Depression Scale and randomized with an internet based randomization service.		randomization, provided by a volunteer recruited from the community who had previously experienced and recovered from postnatal depression and attended a 4 hour training session." The EPDS and a structured clinical interview for depression, the SCID, were given at the initial screening, at 12 weeks and at 24weeks.	health services. For ethical reasons, participants identified with clinical depression at 12 weeks were referred for treatment, resulting in no difference between groups at 24 weeks. Over 80% of participating women were satisfied with peer support and would recommend it to a friend." "Telephone based peer support can be effective in preventing postnatal depression among women at risk."	researchers suggest that the accuracy of their diagnostic data can be questioned, the training of the research nurses may have been inadequate, and they may have underestimated the importance of cultural factors in responses. It is important to note that the control group had more contact with public health nurses than the intervention group between 12 – 24 weeks. For ethical reasons, participants identified as having clinical depression at 12 weeks were referred for treatment, resulting in no difference between groups at 24 weeks. "Telephone based peer support can be effective in preventing postnatal depression among women at risk."
Dennis & Kingston (2008)	"To assess the effects of telephone based support on smoking, pre-term birth, breast-feeding and postpartum depression"	Fourteen trials, published between 1996 and 2004, 3 trials were conducted in Canada, one in Australia, and one in the UK. The 14 trials included 8,037 women.	RCTs Systematic Review	Selection Criteria: All published, unpublished, and ongoing RCTs of telephone support interventions in which the primary aim was smoking, preterm birth, breastfeeding, or postpartum	Telephone support may decrease postpartum depression symptomatology. Telephone interventions were not effective in improving pre-term birth or smoking cessation rates.	Limitation primarily in poor randomization processes, lack of evidence of intervention compliance and insufficient intervention dosage.

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
				depression		
Dennis, Ross & Grigoriadis, (2010)	"The primary objective of this review is to assess the effects, on mothers and their families, of psychosocial and psychological interventions compared with usual antepartum care in the treatment of antepartum depression"	"One US study was included in this review, incorporating 38 outpatient antenatal women who met DSM IV criteria for major depression. (N=38)	RCTs (Cochrane Review)	Selection criteria: All published, unpublished and ongoing RCTs of preventative psychosocial or psychological interventions in which the primary or secondary aim is to treat antenatal depression were included. (Cochrane Database of Systematic Reviews)"	Interpersonal psychotherapy, compared to a parenting education program, was associated with a reduction in the risk of depressive symptomatology immediately post-treatment. The evidence is inconclusive to allow us to make any recommendations for interpersonal psychotherapy for the treatment of antenatal depression.	The evidence is inconclusive to allow us to make any recommendations for interpersonal psychotherapy for the treatment of antenatal depression. The one trial included was too small, with a non-generalizable sample, to make any recommendations. There are 12 studies awaiting classification and the results of those studies may alter the conclusions.
Dennis -& Creedy (2008)	"To assess the effect of diverse psychosocial and psychological interventions compared with usual ante-partum, intra-partum or postpartum care to reduce the risk of developing postpartum depression."	Fifteen trials involving over 7600 women in four countries met the inclusion criteria.	RCTs (Cochrane Review)	Selection criteria**:** All published and unpublished RCTs of acceptable quality comparing a psychosocial or psychological intervention with usual antenatal, intra-partum or postpartum care. (Cochrane Database of Systematic Reviews)"	"Overall, women who received psychosocial intervention were equally likely to develop postpartum depression as those receiving standard care. "A promising intervention is the provision of intensive, professionally based postpartum support. Interventions that are individual based rather than group based may be more beneficial. However, women who received multiple contacts	The weaknesses of the studies include the small sample sizes, large rates of participant decline and/or intervention attrition rates, lack of on the training and qualifications of the intervention providers and lack of detail about adherence to the intervention protocol, lack of antenatal screening "tools" for identification of those at risk. The effectiveness of interpersonal therapy and lay support remains uncertain as the CHWs providing instrumental support like housecleaning rather than peer support. Further research is needed to develop and test

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
					were just as likely to develop PPD as women who received a single contact. There also appears to be evidence supporting interventions that are initiated in the postpartum period that do not include an antenatal component. Finally, interventions targeting "at-risk" mothers may be more beneficial than those including a general maternal population."	multi-level intervention approaches embedded into services systems. There were methodological weaknesses in most of the studies so further research is warranted. The provision of intensive professionally based support is a promising intervention.
Holden et al. (1989)	"To determine whether counseling by health visitors is helpful in managing postnatal depression"	Fifty women in health centers in Edinburgh and Livingston, Scotland, participated who were identified as depressed by screening at 6 weeks postpartum and who had a psychiatrist interview at 12 weeks identifying them as depressed were included in the study.	RCT	Eight weekly counseling visits by health visitors who had been given a short training in counseling for postnatal depression. Depression screens were administered before and after the intervention with the psychiatrist blinded.	"After 3 months, 69% (18 of the 26 women in the treatment group had fully recovered with 38% (9) in the control group. Counseling by trained health visitors may be valuable in managing non-psychotic postnatal depression."	The sample was not evenly distributed across social classes and that was not addressed. More women in the intervention group had complications with delivery. Subjects were allocated to groups using random numbers and were blinded to the psychiatrist who assessed them for depression. The sample was very small but the findings were significant.
Roman et al. (2009)	To determine whether a nurse community health worker home visiting team, in the context of a	Sixty-one Medicaid eligible pregnant women who telephoned any of five public clinics in Kent County, Michigan.	RCT	Medicaid eligible pregnant women were randomly assigned to either usual care or a Nurse-CHW team approach. The first visit is a	Compared to usual care, a nurse-CHW team resulted in significantly fewer depressive symptoms and as hypothesized, reductions in depressive symptoms were most pronounced for women	The researcher is clear about inclusion criteria & exclusion criteria. The groups were randomly assigned with a power analysis described. The flow diagram is clear. The number of visits a woman

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
	Medicaid enhanced prenatal/postnatal services, would demonstrate greater reduction of depressive symptoms and stress and improvement of psycho-social resources when compared with usual community care.			joint assessment visit with multidisciplinary team input followed by 2 prenatal visits, a postpartum visit and two additional visits during the postpartum year. The CHW provides relationship based support through home visits and telephone contact.	with low psychosocial resources, high stress, or both high stress and low resources. Outcomes for mastery and stress were not significant with the intervention group reporting less stress and greater mastery. No differences between the groups were found for self – esteem and social support.	receives varies. There was no flow chart and the intervention strategy was not consistent. In the discussion it is noted that significance for mastery and stress *approached* significance, which actually means that the results are not significant.
Chen et al. (2000)	To evaluate the effects of weekly supportive group meetings for women with postnatal distress"	Sixty women with symptoms of postpartum depression from two urban hospitals in Taiwan approached on their third postpartum day were randomly assigned to support (*n*=30) and control (*n*=30) groups. Those who consented were given a Beck Depression Inventory at 3weeks	RCT	The intervention consisted of four supportive group sessions in which transition to motherhood, management of postpartum stress, communication skills, and life planning were discussed.	Subjects who attended the support sessions had significantly decreased scores (<10) on the Beck Depression Inventory (BDI) and the Perceived Stress Scale (PSS), and significantly increased scores on the Interpersonal Support Evaluation List (ISEL) as evaluated at the end of the fourth weekly session.	Studies with a larger sample size and studying the durability of the intervention should be studied by longer term follow up.
Cox et al. (2008)	"To investigate the associations between depressive symptoms in adolescent	One hundred sixty eight teens who were less than 19 years old were seen in two urban hospital based clinics for teen parents."	Quasi-experimental design	"Baseline data was collected prenatally, and at 2 weeks postpartum. The teens were followed	"Social support appeared to be a protective factor with higher levels of social support associated with lower depressive symptoms.	The sample of adolescents was high risk and were all participating in a parenting program for teens possibly introducing a source of selection bias. The teens

Study	Purpose	Subjects and Setting	Design	Intervention	Outcomes	Study Critique
	mothers and their perceived maternal caretaking ability and social support."	Ninety two percent were primiparous and 94% self identified as African American, Latina or bi-racial.		for three years." Demographic information was collected, the Center for Epidemiologic Studies Depression Scale for Children, the Maternal Self Report Inventory (maternal self-esteem) and the Duke-UNC Functional Social Support Questionnaire measured social support.	These findings are consistent with a prior study that found postpartum depression inversely related to maternal sense of competence and directly associated with social isolation. Social support is associated with decreased levels of depression The study found a clear association between maternal depressive symptoms and decreased perceived maternal care-taking ability."	involved have a high prevalence of prior mental health problems including taking psychotropic medications, hospitalizations, and suicidal gestures. Ninety four percent of the study sample self identify as African American, Latina or Bi-racial adolescents limiting the generalizability to other populations. The sample includes unusually high-risk teens who self-selected a specialized teen parents program.

Table 3. The Wilder Collaboration Factors Inventory Quantitative Results.

Subscale category	Subscale Category Mean (SD)	Collaboration Factor	Statement	Collaborative Factor Standardized Mean
ENVIRONMENT	3.80 (0.38)	History of collaboration or cooperation in the community	1. Agencies in our community have a history of working together 2. Trying to solve problems through collaboration has been common in this community. It has been done a lot before	3.61
		Collaborative group seen as a legitimate leader in the community	3. Leaders in this community who are not part of our collaborative group seem hopeful about what we can accomplish 4. Others (in this community) who are not part of this collaboration would generally agree that the organizations involved in this collaborative project are the "right" organizations to make this work.	3.61
		Favorable political and social climate	5. The political and social climate seems to be "right" for starting a collaborative project like this one. 6. The time is right for this collaborative project.	4.22
MEMBERSHIP CHARACTERISTICS	3.98 (0.39)	Mutual respect, understanding and trust	7. People involved in our collaboration always trust one another 8. I have a lot of respect for the other people involved in this collaboration.	4.44
		Appropriate cross section of members	9. The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish 10. All the organizations that we need to be members or this collaborative group have become members of the group.	3.44

		Members see collaboration in their self interest	11. My organization will benefit from being involved in this collaboration	4.33
		Ability to compromise	12. People involved in our collaboration are willing to compromise on important aspects of our project.	3.78
PROCESS AND STRUCTURE	3.71 (0.56)	Members share a stake in both process and outcome	13. The organizations that belong to our collaborative group invest the right amount of time in our collaborative efforts. 14. Everyone who is a member of our collaborative group wants this project to succeed 15. The level of commitment among the collaboration participants is high.	3.81
		Multiple layers of participation	16. When the collaborative group makes major decisions, there is always enough time for members to take information back to their organizations to confer with colleagues about what the decision should be. 17. Each of the people who participate in decisions in this collaborative group can speak for the entire organization they represent, not just a part.	3.28
		Flexibility	18. There is a lot of flexibility when decisions are made; people are open to discussing different options. 19. People in this collaborative group are open to different approaches to how we can do our work. They are willing to consider different ways of working.	3.83
		Development of clear roles and policy guidelines	20. People in this collaborative group have a clear sense of their roles and responsibilities. 21. There is a clear process for making decisions among the partners in this collaboration.	3.72

		Adaptability	22. This collaboration is able to adapt to changing conditions, such as fewer funds than expected, changing political climate, or change in leadership. 23. This group has the ability to survive even if it had to make major changes in its plan of add some new members in order to reach its goals.	3.72
		Appropriate pace of development	24. This collaborative group has tried to take on the right amount of work at the right pace. 25. We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project.	3.83
COMMUNICATION	3.89 (0.79)	Open and frequent communication	26. People in this collaboration communicate openly with one another 27. I am informed as often as I should be about what goes on in the collaboration. 28. The people who lead this collaborative group communicate well with its members.	3.93
		Established informal relationships and communication links	29. Communication among the people in this collaborative group happens both a formal meetings and in informal ways. 30. I personally have informal conversations about the project with others who are involved in this collaborative group.	3.83
PURPOSE	3.79 (0.67)	Concrete, attainable goals and objectives	31. I have a clear understanding of what our collaboration is trying to accomplish. 32. People in our collaborative group know and understand our goals. 33. People in our collaborative group have established reasonable goals.	3.67

		Shared vision	34. The people in in this collaborative group are dedicated to the idea that we can make this project work. 35. My ideas about what we want to accomplish with this collaboration seem to be the same as the ideas of others.	4.00
		Unique purpose	36. What we are trying to accomplish with our collaborative project would be difficult for any single organization to accomplish by itself. 37. No other organization in the community is trying to do exactly what we are trying to do.	3.78
RESOURCES	3.85 (0.34)	Sufficient funds, staff, materials, and time	38. Our collaborative group had adequate funds to do what it wants to accomplish 39. Our collaborative group has adequate "people power" to do what it wants to accomplish	3.44
		Skilled leadership	40. The people in leadership positions for this collaboration have good skills for working with other people and organizations.	4.67

Table 4. Wilder Collaboration Factor Inventory: Subscale Category Means and Distribution (N = 9).

	Environment	Membership characteristics	Process & Structure	Communication	Purpose	Resources	WCFI
Mean	3.80	3.98	3.71	3.89	3.79	3.85	3.81
Median	3.83	4.00	3.85	4.00	3.86	4.00	3.90
Std. Deviation	0.38	0.39	0.56	0.79	0.67	0.34	0.45
Minimum	3.17	3.33	2.38	2.20	2.43	3.33	2.83
Maximum	4.33	4.67	4.31	4.80	4.86	4.33	4.38

Table 5. The Wilder Collaboration Factors Inventory: Collaborative Factors Ordered by Standardized Mean.

Collaboration Factor **(Subscale category)**	**Statement**	**Collaborative Factor** **Standardized Mean**
Skilled leadership (Resources)	• The people in leadership positions for this collaboration have good skills for working with other people and organizations.	4.67
Mutual respect, understanding and trust (Membership characteristics)	• People involved in our collaboration always trust one another • I have a lot of respect for the other people involved in this collaboration.	4.44
Members see collaboration in their self interest (Membership characteristics)	• My organization will benefit from being involved in this collaboration	4.33
Favorable political and social climate (Environment)	• The political and social climate seems to be "right" for starting a collaborative project like this one. • The time is right for this collaborative project.	4.22
Shared vision (Purpose)	• The people in in this collaborative group are dedicated to the idea that we can make this project work. • My ideas about what we want to accomplish with this collaboration seem to be the same as the ideas of others.	4.00
Open and frequent communication (Communication)	• People in this collaboration communicate openly with one another • I am informed as often as I should be about what goes on in the collaboration. • The people who lead this collaborative group communicate well with its members.	3.93
Appropriate pace of development (Process and structure)	• This collaborative group has tried to take on the right amount of work at the right pace. • We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project.	3.83
Established informal	• Communication among the people in this collaborative group	3.83

relationships and communication links (Communication)	happens both a formal meetings and in informal ways. • I personally have informal conversations about the project with others who are involved in this collaborative group.	
Flexibility (Process and structure)	• There is a lot of flexibility when decisions are made; people are open to discussing different options. • People in this collaborative group are open to different approaches to how we can do our work. They are willing to consider different ways of working.	3.83
Members share a stake in both process and outcome (Process and structure)	• The organizations that belong to our collaborative group invest the right amount of time in our collaborative efforts. • Everyone who is a member of our collaborative group wants this project to succeed • The level of commitment among the collaboration participants is high.	3.81
Ability to compromise (Membership characteristics)	• People involved in our collaboration are willing to compromise on important aspects of our project.	3.78
Unique purpose (Purpose)	• What we are trying to accomplish with our collaborative project would be difficult for any single organization to accomplish by itself. • No other organization in the community is trying to do exactly what we are trying to do.	3.78
Development of clear roles and policy guidelines (Process and structure)	• People in this collaborative group have a clear sense of their roles and responsibilities. • There is a clear process for making decisions among the partners in this collaboration.	3.72
Adaptability (Process and structure)	• This collaboration is able to adapt to changing conditions, such as fewer funds than expected, changing political climate, or change in leadership. • This group has the ability to survive even if it had to make major changes in its plan of add some new members in order to reach its goals.	3.72
Concrete, attainable goals and objectives (Purpose)	• I have a clear understanding of what our collaboration is trying to accomplish. • People in our collaborative group know and understand our goals. • People in our collaborative group have established reasonable goals.	3.67
History of collaboration	• Agencies in our community have a history of working	3.61

or cooperation in the community (Environment)	together • Trying to solve problems through collaboration has been common in this community. It has been done a lot before	
Collaborative group seen as a legitimate leader in the community (Environment)	• Leaders in this community who are not part of our collaborative group seem hopeful about what we can accomplish • Others (in this community) who are not part of this collaboration would generally agree that the organizations involved in this collaborative project are the "right" organizations to make this work.	3.61
Appropriate cross section of members (Membership characteristics)	• The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish • All the organizations that we need to be members or this collaborative group have become members of the group.	3.44
Sufficient funds, staff, materials, and time (Resources)	• Our collaborative group had adequate funds to do what it wants to accomplish • Our collaborative group has adequate "people power" to do what it wants to accomplish	3.44
Multiple layers of participation (Process and structure)	• When the collaborative group makes major decisions, there is always enough time for members to take information back to their organizations to confer with colleagues about what the decision should be. • Each of the people who participate in decisions in this collaborative group can speak for the entire organization they represent, not just a part.	3.28

Table 6. Qualitative Themes.

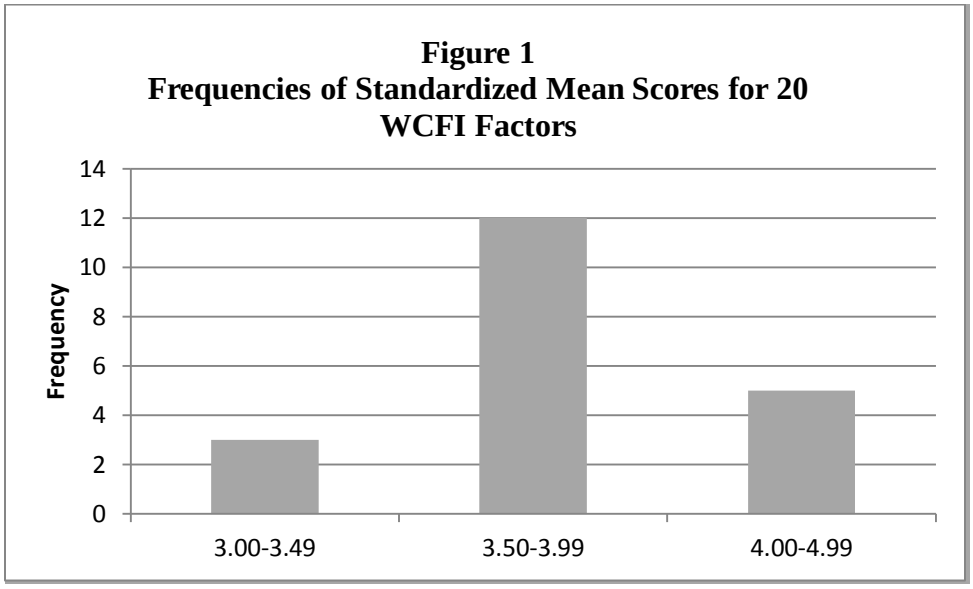
Question	Themes	Number of responses
How do you think the IPFRs can be improved?	Involve additional team members including the family, other professionals, community partners	4 responses
	Focus on practical advice, resources, and guidelines	4 responses
	Share success stories	2 responses
What has changed in your practice or your ability to provide support services for families since the IPFR started?	Helpful suggestions and practical tools are shared that I may be able to use with families.	8 responses
	I am able to see a different perspective based on new knowledge.	5 responses
	I receive needed encouragement and support for my work.	3 responses

Table 7. The Wilder Collaboration Factors Inventory and Corresponding IPEC Core Competencies.

IPEC Core Competency	Subscale category	Subscale Category Mean (SD)	Collaboration Factor
	ENVIRONMENT	3.80 (0.38)	History of collaboration or cooperation in the community
			Collaborative group seen as a legitimate leader in the community
			Favorable political and social climate
IPEC Core Competency: Values and Ethics for Interprofessional Practice Work with individuals of other professions to maintain a climate of mutual respect and shared values.	MEMBERSHIP CHARACTERISTICS	3.98 (0.39)	Mutual respect, understanding and trust mean
			Appropriate cross section of members
			Members see collaboration in their self interest
			Ability to compromise
IPEC Core Competency: Interprofessional Teamwork and Team-based Practice Apply relationship building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient=/population –centered care that is safe, timely, efficient, effective and equitable.	PROCESS AND STRUCTURE	3.71 (0.56)	Members share a stake in both process and outcome
			Multiple layers of participation
			Flexibility
			Development of clear roles and policy guidelines
			Adaptability
			Appropriate pace of development
IPEC Core Competency: Interprofessional Communication Practices Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.	COMMUNICATION	3.89 (0.79)	Open and frequent communication
			Established informal relationships and communication links
IPEC Core Competency: Roles and Responsibilities	PURPOSE	3.79 (0.67)	Concrete, attainable goals and objectives
			Shared vision

for Collaborative Practice Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served.			Unique purpose
	RESOURCES	3.85 (0.34)	Sufficient funds, staff, materials, and time
IPEC Core Competency: Interprofessional Teamwork and Team-based Practice Apply relationship building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient=/population –centered care that is safe, timely, efficient, effective and equitable.			Skilled leadership

Figure 1. Distribution of Standardized Means.



Appendices

Appendix A. Description of the Healthy Families Program

Healthy Families programs offer intensive, systematic home visiting services to families most at risk. The services are free, voluntary and are provided by trained home visitors (community health workers). Education, resources and support are offered in the context of a trust based relationship with the home visitor (community health worker) with content guided by the evidence based Parents as Teachers curriculum. Weekly face-to-face supervision and interprofessional family reviews offer opportunities for staff development, quality assurance and support for home visitors. The HFPC program adheres to the HFA model and shares its commitment to preventing child abuse and neglect by promoting the formation and maintenance of two-parent families, positive parent-child interactions, and optimal maternal, child-health, and early-development outcomes through evidence-based practices for screening, home visiting, and support from trained staff . The program's activities (outputs) and outcomes of all in-home services are provided by FSWs and FRSs working with parents ("Healthy Families America", 2014; "Healthy Families America critical elements", 2001).

The Health Families Page County (HFPC), the Healthy Families Shenandoah County (HFSC) and the Healthy Families of the Blue Ridge (HFBR) programs provide education, resources, and support for the most vulnerable new parents in their respective communities. Fragile families are identified through Healthy Families America (HFA) universal screening and assessment using evidence-based indicators of increased stress that can place a family at risk for poor parenting outcomes and child abuse or neglect ("Healthy Families America", 2014; "Healthy Families America critical elements", 2001).

Healthy Families relies on an objective set of criteria to focus on the most economically and socially disadvantaged ensuring that the most vulnerable members of the community will be enrolled in the HFPC program, thereby reducing the risk of poor parenting outcomes. Based on assessments, at-risk families are offered intensive home-visiting services or shorter-term resources, education, and referral services. Home visits are augmented with parent-child play groups, parenting classes, classes on healthy relationships, and resource and referral consultations at the WIC clinic ("Healthy Families America critical elements", 2001). Mothers who do not qualify for the program or other referral options receive information about applicable family resources and how to access them.

Through the Healthy Families programs connection with JMU's Institute for Innovation in Health and Human Services (IIHHS), they increases their capacity for service delivery by involving students in experiential learning activities. Student involvements also create an opportunity for students to "catch a vision" of their professional future in addressing important community needs.

The Healthy Families programs maintain Memoranda of Understanding (MOU) with healthcare agencies, practices, and organizations that provide initial screening and referral to pregnant women living in their communities. The Kempe Family Stress Checklist—an assessment instrument in which HFPC staff are trained by HFA-certified trainers—is used to identify at-risk women and families. Those most in need are offered services that they may accept or refuse at any time, as the home visitor uses a variety of creative outreach methods to engage the family and build trust ("Healthy Families America critical elements", 2001).

Families accepting services are considered "enrolled," and begin to receive intensive home visiting services. Families enrolled prenatally receive visits two to four times a month.

After the birth, they are visited once a week for the first six months. As families' risks and support needs are addressed, the frequency of visits is reduced, with services available until the child is five-years-old. The CHW works with expectant parents to ensure quality, comprehensive prenatal care, and educates clients about factors that support healthy births and prenatal risks such as substance abuse (smoking, alcohol, and drugs) and poor nutrition. The CHW also monitors prenatal healthcare visits, enrollment and attendance in childbirth classes, and compliance with any additional community resources as prescribed by the health care provider ("Healthy Families America critical elements", 2001).

After the target child is born, services focus on education, resources and support for positive parent-child interaction and child development, as well as the parent's needs. Progress on goals are monitored using the KIPS, HOME, and ASQ assessments (see below for details). Monitoring and documentation ensure that each family member has a healthcare provider. Immunization rates are tracked each quarter until the child is five-years-old. In addition, CHWs educate the client in the following child development areas: (1) basics of infant care, (2) understanding infant behavioral cues, (3) nurturing techniques that support positive attachment and bonding, (4) stages of infant development including positive mental health development, and (5) medical risk indicators such as coughing, fever, dehydration, choking, and proper travel in motor vehicles. Specifically to parents, CHWs provide information and assistance regarding: post-partum care; family planning; personal health, including the impact of substance abuse by one or more parents on child and family development; the impact of family violence on the child and family, including the cyclical nature of abuse; and support and resources to develop job skills and complete educational goals, locate quality childcare, and complete self-sufficiency goal planning. CHWs also provide parents with information on the developmental stages of

childhood and age-appropriate expectations, the dynamics of parent-child interaction and its relationship to positive self-esteem for the child and parent, proper and positive discipline techniques, reinforcement of proper nutrition and its relationship to child development, and the importance of literacy for the child and parent. Working with the family, CHWs will make adjustments necessary to achieve the goals of the program—including referrals to community resources or agencies—and monitor compliance with appointments and referrals activities ("Healthy Families America critical elements", 2001).

The Healthy Families programs use the nationally recognized, evidence-based Parents as Teachers (PAT) curriculum in working with families with children prior to birth through age five. During home visits, PAT-certified CHWs provide educational information about developing positive parent-child interactions through developmental appropriateness, positive discipline, and family well-being. The PAT curriculum includes handouts directed at teens, fathers, mothers, grandparents, and child-care providers, and actively addresses risk factors for poor parenting outcomes (Daro & Harding, 1999; Wagner et al., 2002; Whipple & Nathans, 2005; Zigler et al., 2008).

Carefully selected screening tools provide information on parent-child interaction, child development milestones, home safety, parental postpartum depression, and family stress. All participating families engage in written family goal-planning. Home visits are at least weekly for six months after the baby's birth, with ongoing frequency guided by family needs. Twice weekly parent-child play groups model activities that promote positive parent-child interaction, create an opportunity for social interaction with other parents, and provide teen parenting support groups and healthy relationships instruction for teens in the schools, and evidence based parenting classes offer important resources for fragile families. Specific efforts are ongoing to include

fathers in activities. An advance practice nurse and a clinical psychologist also provide regular interprofessional consultation for home visitors, offering an important resource for family goal planning.

The Healthy Families programs use training curricula and assessment tools that are supported by research evidence and reflect best practices. All services and assessments are voluntary and provided at no cost to participants. The Healthy Families programs have consistently met goals for improved parent-child interaction and developmental screens, which result in better home stability, adjustment to child care and school, and long-term social adjustment for children.

Parent-child interaction and the home environment are assessed using two standardized measurement instruments: the Keys to Interactive Parenting Scales (KIPS) and the Home Observation for Measurement of the Environment (HOME). The KIPS inventory uses observation of a structured interaction between a parent and a child to promote bonding and attachment. Staff receives annual KIPS training on scoring accuracy and use in planning strength-based strategies, goals, and activities with families. The HOME inventory uses observations of a home environment rated on activities, materials, and conditions to assess the availability of support in the home for the child to develop healthfully, with safe and appropriate types and levels of stimulation. The prevention of child abuse and neglect will be measured against founded cases collected by the CPS Central Registry.

Home visitors complete the Ages and Stages Questionnaire (ASQ) developmental screening tool for children at regular recommended intervals, and provide referrals as needed. The ASQ is used with parents two to six times per year to assess child development, assist parents with appropriate early learning activities, and to allow for early identification of and

referral for possible delays. Healthy Families staff members are trained in the use of the ASQ and receive weekly supervisory review for service planning and delivery.

Appendix B. Interprofessional Family Reviews – REQUEST FOR FAMILY REVIEW

FSW or FRS_____ Student_____ Clinician_____
Faculty_____

Program:

Date:

Child's date of birth

Child's primary caregiver

Persons who live in the household

What is your main concern?

What support do you need to address the needs for this family?

Would you like the discussion to include specific information on a specific area? If so, what area(s)

Appendix C. Interprofessional Family Reviews – EVALUATION

FSW or FRS_____ Student_____ Clinician_____
Faculty_____

Program:

Date:

Did you present?

What was most helpful about the IPFR today?

What was least helpful today?

How do you think we can improve the IPFR?

Appendix D. Wilder Collaborative Factors Inventory

The Wilder Collaborative Factors Inventory can be found at the following URL:

https://www.wilder.org/Wilder-Research/Research-Services/Documents/Wilder%20Collaboration%20Factors%20Inventory.pdf

The Wilder Collaboration Factors Inventory

Statements about your Collaborative Group:

Subscale category	Collaboration Factor	Statement	Strongly Disagree	Disagree	Neutral No Opinion	Agree	Strongly Agree
ENVIRONMENT	History of collaboration or cooperation in the community	1. Agencies in our community have a history of working together	1	2	3	4	5
		2. Trying to solve problems through collaboration has been common in this community. It has been done a lot before	1	2	3	4	5
	Collaborative group seen as a legitimate leader in the community	3. Leaders in this community who are not part of our collaborative group seem hopeful about what we can accomplish	1	2	3	4	5
		4. Others (in this community) who are not part of this collaboration would generally agree that the organizations involved in this collaborative project are the "right" organizations to make this work.	1	2	3	4	5
	Favorable political and social climate	5. The political and social climate seems to be "right" for starting a collaborative project like this one.	1	2	3	4	5
		6. The time is right for this collaborative project.	1	2	3	4	5
MEMBERSHIP CHARACTERISTICS	Mutual respect, understanding and trust	7. People involved in our collaboration always trust one another	1	2	3	4	5
		8. I have a lot of respect for the other	1	2	3	4	5

	mean	people involved in this collaboration.	
	Appropriate cross section of members	9. The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish	1 2 3 4 5
		10. All the organizations that we need to be members or this collaborative group have become members of the group.	1 2 3 4 5
	Members see collaboration in their self interest	11. My organization will benefit from being involved in this collaboration	1 2 3 4 5
	Ability to compromise	12. People involved in our collaboration are willing to compromise on important aspects of our project.	1 2 3 4 5
PROCESS AND STRUCTURE	Members share a stake in both process and outcome	13. The organizations that belong to our collaborative group invest the right amount of time in our collaborative efforts.	1 2 3 4 5
		14. Everyone who is a member of our collaborative group wants this project to succeed	1 2 3 4 5
		15. The level of commitment among the collaboration participants is high.	1 2 3 4 5
	Multiple layers of participation	16. When the collaborative group makes major decisions, there is always enough time for members to take information back to their organizations to confer with colleagues about what the decision should be.	1 2 3 4 5
		17. Each of the people who participate in decisions in this collaborative group can speak for the entire organization they represent, not just a part.	1 2 3 4 5
	Flexibility	18. There is a lot of flexibility when decisions are made; people are open to discussing different options.	1 2 3 4 5
		19. People in this collaborative group are open to different approaches to how	1 2 3 4 5

		we can do our work. They are willing to consider different ways of working.	
	Development of clear roles and policy guidelines	20. People in this collaborative group have a clear sense of their roles and responsibilities. 21. There is a clear process for making decisions among the partners in this collaboration.	1 2 3 4 5 1 2 3 4 5
	Adaptability	22. This collaboration is able to adapt to changing conditions, such as fewer funds than expected, changing political climate, or change in leadership. 23. This group has the ability to survive even if it had to make major changes in its plan of add some new members in order to reach its goals.	1 2 3 4 5 1 2 3 4 5
	Appropriate pace of development	24. This collaborative group has tried to take on the right amount of work at the right pace. 25. We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project.	1 2 3 4 5 1 2 3 4 5
COMMUNICATION	Open and frequent communication	26. People in this collaboration communicate openly with one another 27. I am informed as often as I should be about what goes on in the collaboration. 28. The people who lead this collaborative group communicate well with its members.	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
	Established informal relationships and communication links	29. Communication among the people in this collaborative group happens both a formal meetings and in informal ways. 30. I personally have informal conversations about the project with others who are involved in this	1 2 3 4 5 1 2 3 4 5

		collaborative group.					
PURPOSE	Concrete, attainable goals and objectives	31. I have a clear understanding of what our collaboration is trying to accomplish.	1	2	3	4	5
		32. People in our collaborative group know and understand our goals.	1	2	3	4	5
		33. People in our collaborative group have established reasonable goals.	1	2	3	4	5
	Shared vision	34. The people in in this collaborative group are dedicated to the idea that we can make this project work.	1	2	3	4	5
		35. My ideas about what we want to accomplish with this collaboration seem to be the same as the ideas of others.	1	2	3	4	5
	Unique purpose	36. What we are trying to accomplish with our collaborative project would be difficult for any single organization to accomplish by itself.	1	2	3	4	5
		37. No other organization in the community is trying to do exactly what we are trying to do.	1	2	3	4	5
RESOURCES	Sufficient funds, staff, materials, and time	38. Our collaborative group had adequate funds to do what it wants to accomplish	1	2	3	4	5
		39. Our collaborative group has adequate "people power" to do what it wants to accomplish	1	2	3	4	5
	Skilled leadership	40. The people in leadership positions for this collaboration have good skills for working with other people and organizations.	1	2	3	4	5

Two additional questions were added to the survey.

1. How do you think interprofessional family reviews can be improved?
2. What has changed in your practice or your ability to provide support services for families since the interprofessional family reviews started?

Appendix E. Consent for Participation

Cover Letter (Used in Anonymous Research)

You are being asked to participate in a research study conducted by *Emily Akerson* from James Madison University. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges. This study will contribute to the researcher's completion of her doctoral capstone project.

This study consists of a survey that will be administered to individual participants in Shenandoah County, Page County and Rockingham County. You will be asked to provide answers to a series of questions related to the effectiveness of collaboration in the interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

Participation in this study will require 15 minutes of your time.

The investigator does not perceive more than minimal risks from your involvement in this study.
Potential benefits from participation in this study include improvements to the monthly interprofessional family reviews

While individual responses are obtained and recorded anonymously and kept in the strictest confidence, aggregate data will be presented representing averages or generalizations about the responses as a whole. No identifiable information will be collected from the participant and no identifiable responses will be presented in the final form of this study. All data will be stored in a secure location accessible only to the researcher. The researcher retains the right to use and publish non-identifiable data. All records will be destroyed in June 2015. The results will be presented at conferences and through publications.

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. However, once your responses have been submitted and anonymously recorded you will not be able to withdraw from the study.

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Researcher's Name: Emily Akerson Advisor's Name: Dr. Catherine Kane

Department: IIHHS

James Madison University

Email Address: akersoek@jmu.edu

Department: School of Nursing, CMNEB 2105

University of Virginia

Telephone: (434) 924-0100

Email Address: cfk9m@virginia.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

cocklede@jmu.edu

Giving of Consent

I have read this cover letter and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. I certify that I am at least 18 years of age.

_____

Emily Akerson (Printed)

_____ _____

Emily Akerson (Signed) Date

Appendix F. IRB Approval Documentation.

From: Hoffman, Susan (srh) [mailto:srh@virginia.edu]
Sent: Wednesday, February 12, 2014 1:08 PM
To: Akerson, Emily K - akersoek
Cc: Glick, Doris (dfg6x); Kane, Catherine (cfk9m)
Subject: RE: IRB- Protocol Approval

Attached is your signed documentation- best wishes with your research

Susie Hoffman

From: Akerson, Emily K - akersoek [mailto:akersoek@jmu.edu]
Sent: Wednesday, February 12, 2014 12:20 PM
To: Hoffman, Susan (srh)
Cc: Glick, Doris (dfg6x); Kane, Catherine (cfk9m)
Subject: FW: IRB- Protocol Approval

Dear Ms. Hoffman,

Please see the forwarded email noting the approval of the IRB application.

Thanks,

Emily

Emily Akerson RN, MN, C-FNP
Associate Director
Institute for Innovation in Health and Human Services
Affiliate Faculty, Department of Nursing
James Madison University
Blue Ridge Hall, Room 141
MSC 9010
Harrisonburg, Virginia 22807
(540) 568-6120
akersoek@jmu.edu

From: Tillman, Carrie Elizabeth - tillmace
Sent: Wednesday, February 12, 2014 11:03 AM
To: Akerson, Emily K - akersoek
Subject: IRB- Protocol Approval

Dear Emily,

I want to let you know that your IRB protocol entitled, "***An Evaluation of the Perceptions of Community Health Workers about the Effectiveness of Interprofessional Family Reviews***" has been approved for you to begin your study. The signed action of the board form, approval memo, and close-out form will be sent to you via campus mail. Your protocol has been assigned No. 14-0310. Thank you again for working with us to get your protocol approved.

As a condition of the IRB approval, your protocol is subject to annual review. Therefore, you are required to complete a Close-Out form before your project end date. You *must* complete the close-out form unless you intend to continue the project for another year. An electronic copy of the close-out form can be found on the Office of Research Integrity web site at the following URL: http://www.jmu.edu/researchintegrity/irb/forms/index.shtml.

If you wish to continue your study past the approved project end date, you must submit an Extension Request Form indicating an extension request, along with supporting information. Although the IRB office sends reminders, it is ultimately ***your responsibility*** to submit the continuing review report in a timely fashion to ensure there is no lapse in IRB approval.

If you have any questions, please do not hesitate to contact me.

Best Wishes,

Carrie

****

Carrie Tillman

Administrative Assistant
Office of Research Integrity

601 University Boulevard
Blue Ridge Hall

Third Floor, Room # 344

MSC 5738
Harrisonburg, VA 22807
Phone: (540) 568-7025

Fax: (540) 568-6409
****

Appendix G. Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel, May 2011

Sponsored by the Interprofessional Education Collaborative

General Competency Statement-VE. Work with individuals of other professions to maintain a climate of mutual respect and shared values.

Specific Values/Ethics Competencies:

VE1. Place the interests of patients and populations at the center of interprofessional health care delivery.

VE2. Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of team-based care.

VE3. Embrace the cultural diversity and individual differences that characterize patients, populations, and the health care team.

VE4. Respect the unique cultures, values, roles/responsibilities, and expertise of other health professions.

VE5. Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services.

VE6. Develop a trusting relationship with patients, families, and other team members (CIHC, 2010).

VE7. Demonstrate high standards of ethical conduct and quality of care in one's contributions to team-based care.

VE8. Manage ethical dilemmas specific to interprofessional patient/ population centered care situations.

VE9. Act with honesty and integrity in relationships with patients, families, and other team members.

VE10. Maintain competence in one's own profession appropriate to scope of practice

General Competency Statement-RR. Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served.

Specific Roles/Responsibilities Competencies:

RR1. Communicate one's roles and responsibilities clearly to patients, families, and other professionals.

RR2. Recognize one's limitations in skills, knowledge, and abilities.

RR3. Engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs.

RR4. Explain the roles and responsibilities of other care providers and how the team works together to provide care.

RR5. Use the full scope of knowledge, skills, and abilities of available health professionals and healthcare workers to provide care that is safe, timely, efficient, effective, and equitable.

RR6. Communicate with team members to clarify each member's responsibility in executing components of a treatment plan or public health intervention.

RR7. Forge interdependent relationships with other professions to improve care and advance learning.

RR8. Engage in continuous professional and interprofessional development to enhance team performance.

RR9. Use unique and complementary abilities of all members of the team to optimize patient care

General Competency Statement-CC. Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.

Specific Interprofessional Communication Competencies:

CC1. Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function.

CC2. Organize and communicate information with patients, families, and healthcare team members in a form that is understandable, avoiding discipline-specific terminology when possible.

CC3. Express one's knowledge and opinions to team members involved in patient care with confidence, clarity, and respect, working to ensure common understanding of information and treatment and care decisions.

CC4. Listen actively, and encourage ideas and opinions of other team members.

CC5. Give timely, sensitive, instructive feedback to others about their performance on the team, responding respectfully as a team member to feedback from others.

CC6. Use respectful language appropriate for a given difficult situation, crucial conversation, or interprofessional conflict.

CC7. Recognize how one's own uniqueness, including experience level, expertise, culture, power, and hierarchy within the healthcare team, contributes to effective communication,

conflict resolution, and positive interprofessional working relationships (University of Toronto, 2008).

CC8. Communicate consistently the importance of teamwork in patient-centered and community-focused care.

General Competency Statement-TT. Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-/population-centered care that is safe, timely, efficient, effective, and equitable.

Specific Team and Teamwork Competencies:

TT1. Describe the process of team development and the roles and practices of effective teams.

TT2. Develop consensus on the ethical principles to guide all aspects of patient care and teamwork.

TT3. Engage other health professionals—appropriate to the specific care situation—in shared patient-centered problem-solving.

TT4. Integrate the knowledge and experience of other professions— appropriate to the specific care situation—to inform care decisions, while respecting patient and community values and priorities/ preferences for care.

TT5. Apply leadership practices that support collaborative practice and team effectiveness.

TT6. Engage self and others to constructively manage disagreements about values, roles, goals, and actions that arise among healthcare professionals and with patients and families.

TT7. Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care.

TT8. Reflect on individual and team performance for individual, as well as team, performance improvement.

TT9. Use process improvement strategies to increase the effectiveness of interprofessional teamwork and team-based care.

TT10. Use available evidence to inform effective teamwork and team-based practices.

TT11. Perform effectively on teams and in different team roles in a variety of settings (pp.17 -25).

Appendix H. Guidelines for Abstract Submission.

All Together Better Health Conference

The All Together Better Health Conference is described on the website (http://www.atbh7.pitt.edu/about.html) as follows:

All Together Better Health (ATBH) is the leading global interprofessional practice and education conference. The conference brings together providers, health system executives, educators, policymakers, and healthcare industry leaders to advance interprofessionalism locally, regionally and worldwide. Previous conferences in the All Together Better Health series have been held in in Kobe, Japan; Sydney, Australia; Stockholm, Sweden; London, England; and Vancouver, British Columbia. We are pleased to serve as host for the first ATBH conference in the United States.

All Together Better Health VII will build on the themes of previous ATBH conferences. Reflecting the contemporary focus on improving health care and population health while lowering costs, the conference will be organized around the following themes within the context of interprofessional practice and education:

- New models of interprofessional practice and team-based care;
- Aligning reimbursement with interprofessional care delivery and the economics;
- Educating teams and integrating advanced practice providers in the clinical practice environment;
- Educational redesign to prepare a "collaboration ready" healthcare workforce;
- Legal and policy environment;
- Technology applications (e.g., electronic health records, telehealth, e-health, social media, etc.); and

- Theories, models, measurement and evaluation.

The Call for Abstracts can be found at the following website:

http://www.atbh7.pitt.edu/abstracts.html

Public Health Nursing

The description of the journal, its aims, scope, and author guidelines can be found at

http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1525-1446/homepage/ForAuthors.html

The Author Guidelines from Public Health Nursing appear below.

AIMS & SCOPE

Public Health Nursing aims to provide worldwide access to timely research and practice features of use to public health nurses, administrators, and educators in the field of public health nursing. Its scope is the range of population-based concerns and interventions in which nurses are involved.

The journal emphasizes scholarship on vulnerable populations. Articles include research studies, program evaluations, practice concepts, and educational features published with the goal of replication and development, and theory, education, methods, policy, and ethical and legal papers that stimulate discussion and public debate. Authors from all disciplines are invited to submit manuscripts relevant to public health nursing. Authors who have questions about the appropriateness of a manuscript for publication in this journal are encouraged to communicate with the Editor prior to submission.

Questions about the submission or peer review process can be directed to the Managing Editor, Rachel Yehl, at phn-admin@wiley.com.

Author or Submitting Agent. The author or submitting agent is responsible for compliance with all journal policies, including identification of a corresponding author, declaration of all

sources of research funding and support, conflict of interest, and documentation of all appropriate permissions.

Plagiarism. PHN employs a plagiarism detection system. By submitting your manuscript to this journal you accept that your manuscript may be screened for plagiarism against previously published works. Plagiarism is any instance where another person's, or one's own previously published, thoughts, words, or ideas are used without appropriate attribution.

Sufficient Participation. *Public Health Nursing* adheres to the Vancouver Guidelines on authorship, as defined in the International Committee of Medical Journal Editors' (ICMJE) Uniform Requirements for Manuscripts Submitted to Biomedical Journals. Guidelines specify that authorship credit is based on (1) substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) drafting the work or revising it critically for important intellectual content; AND (3) final approval of the version to be published; AND (4) agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

When authorship of a single manuscript exceeds six authors, the editor may require additional information about the contributions of each. The editor discourages submission of papers written for class assignments by individual or groups of students.

Submission. Manuscripts must be submitted online through the *Public Health Nursing* Manuscript Central website: http://mc.manuscriptcentral.com/phn. All submissions receive an initial review by the editorial office and the editor to determine if they are appropriate to send out for peer review. Authors will typically be notified within two weeks if their manuscript will not be sent out for review. Final publication decisions remain the responsibility of the editor.

Originality. Manuscripts that contain original, previously unpublished material will be considered for publication. The essential content of the article, including tables and figures, may not be submitted for publication elsewhere before a publication decision is made by this journal. Secondary publication may be considered when a paper, in the judgment of the Editor, is intended for a different group of readers, and following approval from the editors of both journals prior to review. Authors should make complete disclosures to the Editor of any previous dissemination of the findings that might be considered redundant or duplicate publication. The Editor reserves the right to request copies of such material in advance, to reject submissions in process, and/or, if the article has been published, to print a notice of redundant or duplicate publication. Authors must include presentations of manuscript content in the Acknowledgments of the published article.

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Appendix I. Manuscript for Publication

An Evaluation of the Perceptions of Community Health Workers about the Effectiveness of Interprofessional Family Reviews to Support Families at Risk

Abstract

Objective: To evaluate the perceptions of Healthy Families program community health workers about the effectiveness of interprofessional family reviews to provide support for vulnerable mothers at risk for poor parenting outcomes including child maltreatment.

Design: A cross sectional descriptive research design was used for the process evaluation of CHW perceptions of IPFR effectiveness and used both quantitative and qualitative descriptive methods.

Sample: Nine community health workers employed by three rural and suburban Healthy Families programs were surveyed.

Measures: The factors associated with effective collaboration experienced by CHWs were assessed using the Wilder Collaborative Factors Inventory (WCFI) (Mattessich, Murray-Close, & Monsey, 2001). Two qualitative questions were added to the survey.

Results: Of the twenty collaboration factors evaluated, the standardized means of 5 (25%) were above 4.00 (not needing follow up) and 15 (75%) were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction).

Conclusions: Healthy Families program community health workers perceive the interprofessional family reviews as effective in providing support for serving vulnerable families. It will be important to address collaboration factors for the IPFRs to continue to be perceived as useful. Core competencies for interprofessional collaborative practice can inform the process.

Key words: Interprofessional collaborative practice, community health workers, preventing child maltreatment, support for vulnerable families, Healthy Families program, reflective consultation

An Evaluation of the Perceptions of Community Health Workers about the Effectiveness of Interprofessional Family Reviews to Support Families at Risk

Background

Community health workers (CHWs) provide services for the most vulnerable families in a community at risk for many of the factors that can result in poor parenting outcomes. The families served by Healthy Families CHWs are the most vulnerable at-risk families in a target community, and are complex, requiring intensive support and care coordination ("Healthy Families America", 2014; "Healthy Families critical elements", 2001). Interprofessional collaborative practice is gaining increased attention as the way to optimize health outcomes for patients and families with complex challenges (Interprofessional Education Collaborative Expert Panel [IPEC], 2011; World Health Organization [WHO], 2010). CHWs frequently report family situations that are challenging and difficult to assess. The families frequently need resources beyond what CHWs are prepared to provide. Effective interprofessional consultation can provide needed consultation in family goal planning, staff development, and support for community health workers who are involved in supporting families (Glenton et al. 2013, Interprofessional Education Collaborative Expert Panel [IPEC], 2011; World Health Organization [WHO], 2008; WHO, 2010). It can also provide a model for interprofessional collaboration for students and faculty to develop competencies for interprofessional collaborative practice.

Healthy Families America (HFA) is a national evidence-based home-visiting model that provides voluntary, strength based, and family centered home-visiting services to expectant and new parents. The program is designed to promote healthy family functioning by reducing risk factors for poor parenting outcomes, child maltreatment and to foster protective factors within at-risk families ("Healthy Families America", 2014). Healthy Families CHWs, in the context of a

trusting relationship, provide regular home visits for families who may be at risk of child abuse and neglect and other poor outcomes due to a variety of factors including poverty, single parenthood, low educational level, and unemployment. Visits begin prenatally, may continue until a child is five years old, and occur with decreasing frequency as families become more self-sufficient. Families are provided with educational information related to child development, positive parenting techniques, preventive care, and child safety. CHWs assist families by providing and following up on community referrals, conducting regular developmental screens on children, and facilitating other needed services. Services to address physical and mental health concerns including depression, substance abuse, domestic violence and resources to meet basic needs, are among the resources CHWs coordinate, depending on the parent's needs ("Healthy Families America critical elements", 2001).

A healthy parent-child relationship is critical to the social, emotional and physical development of a child (Barton et al., 2008; Dube, Felitti, Dong, Giles, & Anda, 2003). Untreated maternal depression can interfere with the early bonding and attachment process between mother and child as well as contribute to the child's risk of developing a number of health and mental health problems (Barton et al, 2008; Dube et al., 2003). Researchers have demonstrated that family stressors can have adverse impacts that follow children into adulthood Dube et al., 2003). The Adverse Childhood Experiences (ACE) study, sponsored by the Centers for Disease Control and Prevention and Kaiser Permanente's Department of Preventative Medicine in San Diego, California, involved over 17,000 participants and examined the health and social effects of adverse childhood experiences over the life span (Dube et al., 2003; Centers for Disease Control [CDC], 2009). As the number of ACEs increase, the risk for health problems in adulthood increases in a strong and graded fashion.

One of the nine adverse childhood experiences (ACEs) is parental mental illness (Dube et al., 2003; Felitti et al., 1998). Reported prevalence of maternal depression varies but estimates indicate that it affects between 10-15% of the maternal population (Gaynes et al., 2005). The numbers increase with added stressors and family risk factors. In a 2007 Healthy Start Initiative study in Virginia using the Edinburgh Postnatal Depression Screen (EPDS), 34% of the 376 parents screened demonstrated a positive screen for depression (Barton et al., 2008; CDC, 2008). Maternal factors associated with increased risk for depression include financial stress, Medicaid coverage, tobacco use in the last three months, teen pregnancy, single, physical abuse before or during pregnancy, partner related stress during pregnancy, past history of depression and lack of social support (CDC, 2008; CDC, 2009). The factors overlap with the adverse childhood experiences identified as having a strong association with poor outcomes into adulthood (CDC, 2009). These are also the factors that are included in a screening for pregnant mothers to determine if they would benefit from the intensive, strength based home visiting model of support that Healthy Families America programs offer ("Healthy Families America critical elements", 2001).

Parents who are low income and/or under-insured are less likely to access health and mental health services. Cultural factors influence access and use of mental health services during this important time in the life of a family (Barton et al. 2008). Health care providers may not recognize the symptoms of depression or may not ask the patient questions that elicit responses that alert the provider to the diagnosis (Barton et al., 2008). In 2004, the Virginia Department of Health learned through a survey that primary care providers lack confidence in their ability to treat postpartum depression. The most common barriers identified were limited time, communication and language barriers, stigma, inadequate provider knowledge and skills, lack of

available mental health services, and lack of insurance (Barton et al., 2008). Community health workers (CHW) have an important role in bridging the communication gap that undermines focused prevention efforts including early detection and treatment (Frenk et al., 2010; WHO, 2008; WHO, 2010). Trained community health workers have an important role in the national and global health priority to prevent child maltreatment and promote safe, stable and nurturing relationships by providing education, resources and support through intensive home visiting in the context of a trust based relationship with vulnerable parents at risk for postpartum depression and other mental illnesses (Daro & Harding, 1999; Glenton et al., 2013; "Healthy Families America critical elements", 2001; Zimmerman & Mercy, 2010).

Prevention

Prevention strategies that include primary, secondary, and tertiary prevention are relevant to the discussion of CHW intervention strategies with families who are at risk for poor parenting outcomes (Zimmerman & Mercy, 2010). The risk for development of adverse health conditions including maternal depression is influenced by social determinants such as poverty, lack of education, lack of access to health care, and in the case of maternal and child health outcomes, single parenthood (CDC, 2009). The Institute of Medicine report titled *Unequal Treatment* (2002) states that "all members of a community are affected by the health status of its least healthy members" (p. 37).

Prevention strategies focused on primary and secondary, as well as tertiary interventions benefit the whole community (Anderson & McFarlane, 2011). Preventing poor parenting outcomes, including child abuse and neglect, includes primary prevention efforts. CHWs provide education, resources, and support focused on mitigating risk factors and promoting positive parenting outcomes through intensive, strength-based voluntary home visiting services. For

families at risk and who demonstrate symptoms of depression or other mental health concerns, early identification and treatment of mental illness can prevent long term adverse outcomes, an important secondary prevention effort.

Preventing child maltreatment is a priority for the World Health Organization, Healthy People 2020, and the Centers for Disease Control and Prevention (CDC, 2008, WHO, 2008, Department of Health and Human Services [DHHS], 2012). The CDC promotes safe stable and nurturing relationships between children and their caregivers (CDC, 2008). "The negative consequences of the absence of nurturing for the emotional development of children due to, for example, parental mental illness (e.g., maternal depression) or hostility, has been well documented in developmental research and studies of brain functioning" (CDC, 2008; Dawson et al., 2000).

CHW Effectiveness

Community health workers are increasingly included in health teams because they are assumed to effectively deliver health education and support in a culturally sensitive way to vulnerable populations (Arvey & Fernandez, 2012; Singh & Chokski, 2013). Glenton et al. (2013) published a Cochrane Review of fifty three studies in which they linked CHW program strength to trust-based relationships between CHWs and their clients. They also noted that CHWs effectiveness is enhanced by relevant, visible and regular support, training, and supervision linked to the health system and the community that is accessible and acceptable. Other studies, peer reviewed commentaries and working group publications validate these findings (Arvey & Fernandez, 2012; Balcazar et al., 2011; Pallas et al., 2013; Perry & Zulliger, 2012; Singh & Chokshi, 2013; WHO, 2008) Supervision, training and a supportive system is critical to CHW effectiveness. The World Health Organization (2008) acknowledges that strong

alliances must be developed with health and human services professionals and organizations to insure optimal outcomes as the clients CHWs typically serve are high users of health and human services.

Interprofessional Collaborative Practice

Interprofessional education and collaborative practice is defined by the World Health Organization as "occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (WHO, 2010). The World Health Organization (2010), and accrediting bodies for health professions education (IPEC, 2011) support collaboration as an important way to optimize health outcomes for increasing complex healthcare challenges. At the same time, colleges and universities are prioritizing educating students to be "collaboration ready" when they enter the workforce. The World Health Organization (2010) has advised that collaborative practice strengthens health systems and improves health outcomes. Interprofessional collaborative practice is a strategy to address the complex health challenges facing us nationally and globally (Barr, 2002; McKeown, Blundell, Lord, & Haigh, 2005; Institute of Medicine [IOM], 2013). Supporting families at risk for poor parenting outcomes is a complex global health challenge that demands an interprofessional collaborative practice strategy.

Purpose

A monthly interprofessional family review was developed to discuss families who are struggling with health or mental health concerns that complicate the community health worker's ability to support the family. The purpose of this study is to evaluate the perceptions of community health workers about the effectiveness of collaboration in the interprofessional

family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges.

Research Question

What are the perceptions of community health workers about the effectiveness of collaboration in interprofessional family reviews to support vulnerable mothers at risk for poor parenting outcomes due to health and mental health challenges?

Methodology

Introduction

A monthly interprofessional family review (IPFR) was developed in 2005 to discuss families who are experiencing health or mental health concerns that complicate the home visitor's ability to support the family. The IPFR provides the home visitor access to interprofessional consultation, training, and practice resources that optimize health outcomes and it provides health professions students an opportunity to participate in an interprofessional collaborative practice as part of their educational experience. It also establishes an interprofessional team approach to care, connecting CHWs and health professionals as part of the same collaborative practice team, with the family at the center of the process.

The literature demonstrates that CHW effectiveness is enhanced by relevant, visible and regular support, training, and supervision that is accessible, affordable, and acceptable. The interprofessional family review provides a model for supporting the CHW role. The CHWs have access to professional consultation, resources, and training, the students have access to high quality interprofessional clinical education, and the professionals have access to the CHWs insights and assessment based on a relationship of support with the family developed in the context of home visiting. An advance practice nurse, clinical psychologists, and graduate level

health professions students offer consultation and staff development for home visitors in family goal planning and support strategies for vulnerable families. Other professionals are invited depending on the needs of the families. Family challenges typically include both health and mental health concerns.

To request an IPFR, the CHW provides some baseline information about the family and identifies the main challenges in providing support for the family. The written request allows the nurse, the psychologists and students to prepare to address the specific issues the CHW raised. The IPFR meets monthly. The CHW presents the family strengths and concerns uninterrupted until they pause for questions and discussion. The clinical psychologists, the advanced practice nurse, other CHWs or supervisors ask questions and provide information. At the end of the review, the coordinator summarizes the recommendations and asks the entire group if anything should be added to the summary. The IPFR concludes after each participant completes an evaluation of the session.

Research Design

A cross sectional descriptive research design was used for the evaluation of CHW perceptions of IPFR effectiveness and used both quantitative and qualitative descriptive methods. Qualitative and quantitative data was elicited through a survey with two added questions. The overall project was designed as a program evaluation. Issell (2009) states that program evaluations focus on whether the program was efficacious, effective and efficient. "Effectiveness is the realistic potential for achieving the desired outcome when the intervention is implemented in real time"(p. 290). The effectiveness of the interprofessional team process is dependent on participants' perceptions of the collaborative team process.

Sample

Community health workers employed by three rural and suburban Healthy Families programs were surveyed. Nine CHWs who had attended at least two IPFRs took the survey in February or March 2014.

Measures

The factors associated with effective collaboration were assessed using the Wilder Collaborative Factors Inventory (WCFI) (Mattessich, Murray-Close, & Monsey, 2001). The Wilder Collaboration Factors Inventory (2001) identifies 20 collaborative factors associated with successful collaboration which are measured by a total of forty questions (see Table 1). Each of the forty items in the inventory is provided as a statement and participants are asked to respond using a five point scale from strongly agree (5) to strongly disagree (1). The twenty collaborative factors are grouped into six subscale categories: Environment; Membership Characteristics; Process and Structure; Communication; Purpose; and Resources (Mattessich et al., 2001). Two qualitative questions were added to the survey: 1) how do you think the IPFRs can be improved? and 2) what has changed in your practice or your ability to provide support services for families since the IPFRs were started? These questions allowed CHWs to express their perspectives about the IPFRs in their own words, increasing the likelihood of capturing the nuances in their perspectives that the inventory might overlook.

Analytic Strategy

The WCFI guidelines provide a recommended strategy for analyzing the results (Mattessich et al., 2001). To answer the research question, a standardized average group score for each of the 20 factors in the Wilder Collaboration Factors Inventory was calculated. Higher factor scores indicate more positive perceptions of the factor. Means and standard deviations

were calculated for the six subscale categories. Qualitative responses were grouped by themes using qualitative coding procedures. Comparison with the factor scores and the qualitative responses were used to ascertain any salient differences or similarities.

The qualitative responses to the open-ended questions were summarized and grouped by themes (i.e. thematic content analysis) using qualitative coding procedures (Green & Thorogood, 2014). A second reviewer verified themes using qualitative coding procedures. Comparison between the factor scores and the qualitative responses will be used to ascertain any salient differences or similarities.

Protection of Human Subjects

The study was approved by the Institutional Review Boards (IRB) at the universities that were associated with this research.

Results

Nine community health workers employed by Healthy Families programs in three rural and suburban Virginia counties who had attended at least two interprofessional family reviews completed the survey in February or March 2014. Four (44%) of the nine had been in the role of community health worker for less than two years and five (56%) of the nine had been in the role longer than two years.

Quantitative Results

By following the procedures recommended by Mattessich et al.(2001), a standardized average group score for each of the 20 factors was calculated (see Table 1). The standardized mean scores for the 20 factors ranged from 3.28 to 4.67 and are presented in ranked order from highest to lowest in Table 3.

Of the twenty collaboration factors evaluated, the standardized means of 5 (25%) were above 4.00 (not needing follow up) and 15 (75%) were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction). There were no scores that were less than 2.99. The highest scores occurred for "skilled leadership"; "mutual respect, understanding and trust", and "members see collaboration in their self-interest" while the lowest scores occurred for "multiple layers of participation"; "appropriate cross section of members"; and "sufficient funds, staff materials and time" (see Table 3). The standardized mean for five factors was at 4.00 or above, twelve factors were between 3.50 – 3.99, and three factors were between 3.00 – 3.49.

There are six subscale categories in the WCFI associated with between two and six collaborative factors (See Table 1). On a five point scale the mean and standard deviation was calculated for each subscale category: Environment (M = 3.80, SD = 0.38); Membership Characteristics (M = 3.98, SD = 0.39); Process and Structure (M = 3.71, SD = 0.56); Communication (M = 3.89, SD = 0.79); and Purpose (M = 3.79, SD = 0.67); and Resources (M = 3.85, SD = 0.34) from the survey sample of nine respondents (See Table 3 and Table 4).

Qualitative Results

The qualitative responses to the two questions "how do you think the IPFR can be improved?" and "what has changed in your practice or your ability to provide support services for families since the IPFR started?" were independently reviewed by the researcher and a Ph.D. prepared nursing researcher with knowledge of qualitative methods. Themes were identified and compared. Table 4 describes the themed responses to the two questions.

Discussion

Overview

Derose, Beatty and Jackson (2004) recommend that scores above 4 do not need follow up, scores between 3.0 – 3.9 should be considered borderline and may require attention and scores of 2.9 or lower indicate concern and should be addressed. Mattessich et al. (2001) recommend that any score falls below 3.0, it should be discussed by the group as soon as possible, if scores fall between 3.0 – 3.9, steps may be needed to improve the quality of the interaction, and if most scores fall at 4.0 or above and just a few fall between 3.0-3.9, there are no major shortcomings to the collaboration. However, they caution against over confidence if the inventory results in good scores. Collaboration requires ongoing work to continue to be effective. The values of the standardized means and, the means and the standard deviations are recorded to the hundredths. For the purposes of this study, the borderline score were defined as 3.00 – 3.99 to maintain consistency with standard APA formatting.

Subscale Categories: All of the subscale category mean scores were between 3.71 and 3.98 which is in the borderline range (3.00 – 3.99) and steps may be needed to improve the quality of the collaborative interaction for the IPFRs to continue to be perceived by the CHWs as useful and effective (see Table 1 and Table 2). There are no standardized mean scores below 2.99 indicating that the IPFR has no issues that need urgent follow up. Although the sample size was small, for the subscale category of Communication (M = 3.89, SD = 0.79), the standard deviation indicates that the range of responses is more varied than for other subscale categories. Table 2 illustrates that the minimum response was 2.20 and the maximum response was 4.80, which indicates a need for follow up on interprofessional team communication. Team members reported varied experiences in the communication subscale category.

Collaborative factors. By following the procedures recommended by Mattessich et al. (2001), a standardized average group score for each of the 20 collaborative factors was calculated (see Table 1). The standardized mean scores for the 20 factors ranged from 3.28 to 4.67. Of twenty collaboration factors evaluated, the standardized means of 5 factors (25%) were above 4.00 (not needing follow up) and 15 factors (75%) were between 3.00 – 3.99 (steps may be needed to improve the quality of the interaction). These findings confirm the need for follow up to improve the quality of the collaboration but noting that the CHWs perceive the IPFR collaboration as effective in a number of important areas.

Community health workers participate in interprofessional family reviews (IPFR) of their cases in order to receive support, consultation, training and guidance for their work. The CHW responses to the WCFI survey and qualitative questions indicated that at the time of data collection, the IPFR goals were being met. The CHW responses also confirm that the IPFRs are addressing elements that the literature associates with CHW effectiveness.

Qualitative Responses: The qualitative findings indicated alignment between the goals of the IPFR and the CHWs perceptions of collaboration during the IPFR. Responses to the question "what has changed in your practice or your ability to provide support services for families since the IPFRs started" (see Table 4) revealed that they "received helpful suggestions and practical tools to use with families" (training, guidance), "encouragement and support" (support), and "a different perspective based on new knowledge" (consultation, training). The responses indicated that the IPFR goals were being met at the time of the survey.

CHWs frequently report family situations that are challenging and difficult to assess. The families frequently need resources beyond what CHWs are prepared to provide. Larner, Halpern and Harkavay (1992) noted that "the most significant element of supervision was the support it

provided for the family workers in their often-stressful work with families" (p. 194). CHWs who attend the IPFR perceive their participation in the "collaboration as in their self-interest" (M = 4.33) (see Table 1). They also report that they receive "needed encouragement and support for their work" (see Table 4). An effective interprofessional collaborative practice can provide needed support for community health workers to achieve important health and mental health goals with the most vulnerable families in a community.

In response to the question "how do you think the IPFRs can be improved?" there were four responses suggesting that the IPFR "focus on practical advice, resources and tools" (4 responses) that can be implemented by CHWs in the home since many vulnerable families are unwilling to keep referral appointments with community professionals (Table 4). It is important to address this recommendation for improvement as it could impact the CHW perception about the effectiveness of the IPFRs in the future.

Limitations of the Study

While the results of this evaluation yielded important information about the CHWs perceptions of IPFRs, a weakness of the design was that there were only nine participants and the small sample size limits the ability to generalize across settings and to identify statistically significant findings. Other weaknesses are that data is lacking on whether the IPFR made a difference to family outcomes, and that no baseline assessment of collaboration was collected prior to initiating the IPFR.

Implications for Further Research, Study and Development

Nurses must evaluate the effectiveness of collaboration in order to facilitate care that is safe, timely, efficient, effective, and equitable. Interprofessional team functioning can be modified based on evaluation results to promote successful collaboration and optimal patient,

family and community health outcomes. The survey used in this study can be used to evaluate collaboration in interprofessional collaborative team based practices.

It will be important to collect data on whether the IPFRs make a difference to family outcomes. Documentation and accountability processes for interprofessional team based practice and IPFRs also need further development and evaluation.

Implications for Public Health Nursing

Community health workers are important members of the health care team and can be critical to achieving improved health and well-being for the nation's most vulnerable and at risk families and communities (Frenk et al. 2010; WHO, 2008). Healthy Families is evidence based national program model which provides education, resources and support for the most vulnerable first time parents through intensive home visiting by community health workers (Daro & Harding, 1999; Healthy Families America, 2014).

An effective interprofessional consultation model provides support for the community health workers role in supporting families. In the changing health care environment, community health workers have an increasingly important role in achieving public health goals (Frenk et al. 2010). Nurses can have a leadership role in developing effective models to support all members of the health care team in achieving patient and population health goals. It is important to explore the issues raised in the study and to continue to evaluate the perceptions of the CHWs about the effectiveness of the IPFRs. The Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011) is a helpful framework for defining issues, developing strategies, and evaluating progress (see Appendix A).

Opportunities for students to observe and participate in interprofessional collaborative practice as a part of their clinical education is essential if health professions education is to

achieve the goal of educating students to be part of a collaboration ready workforce in the 21st century. The CHWs, the students and the faculty are simultaneously teachers, learners and consultants, thereby offering a rich opportunity to address the core competencies for interprofessional collaborative practice outlined by the Interprofessional Education Collaborative (IPEC, 2011) (see Appendix A).

As public health leaders, nurses can develop and facilitate effective interprofessional collaborative practice models to address important and complex global health challenges that impact our communities. IPFRs can provide effective and useful support for community health workers who are providing support for families at risk for poor parenting outcomes. Factors and competencies associated with successful interprofessional collaboration must be regularly assessed and developed for the collaboration to continue to be effective.

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Table 1. The Wilder Collaboration Factors Inventory.

Subscale category	Subscale Category Mean (SD)	Collaboration Factor	Statement	Collaborative Factor Standardized Mean
ENVIRONMENT	3.80 (0.38)	History of collaboration or cooperation in the community	1. Agencies in our community have a history of working together 2. Trying to solve problems through collaboration has been common in this community. It has been done a lot before	3.61
		Collaborative group seen as a legitimate leader in the community	3. Leaders in this community who are not part of our collaborative group seem hopeful about what we can accomplish 4. Others (in this community) who are not part of this collaboration would generally agree that the organizations involved in this collaborative project are the "right" organizations to make this work.	3.61
		Favorable political and social climate	5. The political and social climate seems to be "right" for starting a collaborative project like this one. 6. The time is right for this collaborative project.	4.22
MEMBERSHIP CHARACTERISTICS	3.98 (0.39)	Mutual respect, understanding and trust mean	7. People involved in our collaboration always trust one another 8. I have a lot of respect for the other people involved in this collaboration.	4.44
		Appropriate cross section of members	9. The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish 10. All the organizations that we need to be members or this collaborative group have become members of the group.	3.44
		Members see collaboration in their self interest	11. My organization will benefit from being involved in this collaboration	4.33
		Ability to compromise	12. People involved in our collaboration are willing to compromise on important aspects of our project.	3.78

PROCESS AND STRUCTURE	3.71 (0.56)	Members share a stake in both process and outcome	13. The organizations that belong to our collaborative group invest the right amount of time in our collaborative efforts. 14. Everyone who is a member of our collaborative group wants this project to succeed 15. The level of commitment among the collaboration participants is high.	3.81
		Multiple layers of participation	16. When the collaborative group makes major decisions, there is always enough time for members to take information back to their organizations to confer with colleagues about what the decision should be. 17. Each of the people who participate in decisions in this collaborative group can speak for the entire organization they represent, not just a part.	3.28
		Flexibility	18. There is a lot of flexibility when decisions are made; people are open to discussing different options. 19. People in this collaborative group are open to different approaches to how we can do our work. They are willing to consider different ways of working.	3.83
		Development of clear roles and policy guidelines	20. People in this collaborative group have a clear sense of their roles and responsibilities. 21. There is a clear process for making decisions among the partners in this collaboration.	3.72
		Adaptability	22. This collaboration is able to adapt to changing conditions, such as fewer funds than expected, changing political climate, or change in leadership. 23. This group has the ability to survive even if it had to make major changes in its plan of add some new members in order to reach its goals.	3.72
		Appropriate pace of development	24. This collaborative group has tried to take on the right amount of work at the right pace. 25. We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project.	3.83
COMMUNICATION	3.89 (0.79)	Open and frequent communication	26. People in this collaboration communicate openly with one another 27. I am informed as often as I should be about what goes on in the collaboration.	3.93

			28. The people who lead this collaborative group communicate well with its members.	
		Established informal relationships and communication links	29. Communication among the people in this collaborative group happens both a formal meetings and in informal ways. 30. I personally have informal conversations about the project with others who are involved in this collaborative group.	3.83
PURPOSE	3.79 (0.67)	Concrete, attainable goals and objectives	31. I have a clear understanding of what our collaboration is trying to accomplish. 32. People in our collaborative group know and understand our goals. 33. People in our collaborative group have established reasonable goals.	3.67
		Shared vision	34. The people in in this collaborative group are dedicated to the idea that we can make this project work. 35. My ideas about what we want to accomplish with this collaboration seem to be the same as the ideas of others.	4.00
		Unique purpose	36. What we are trying to accomplish with our collaborative project would be difficult for any single organization to accomplish by itself. 37. No other organization in the community is trying to do exactly what we are trying to do.	3.78
RESOURCES	3.85 (0.34)	Sufficient funds, staff, materials, and time	38. Our collaborative group had adequate funds to do what it wants to accomplish 39. Our collaborative group has adequate “people power” to do what it wants to accomplish	3.44
		Skilled leadership	40. The people in leadership positions for this collaboration have good skills for working with other people and organizations.	4.67

Table 2. Wilder Collaboration Factor Inventory: Subscale Category Means and Distribution (N = 9).

	Environment	Membership characteristics	Process & Structure	Communication	Purpose	Resources	WCFI
Mean	3.80	3.98	3.71	3.89	3.79	3.85	3.81
Median	3.83	4.00	3.85	4.00	3.86	4.00	3.90
Std. Deviation	0.38	0.39	0.56	0.79	0.67	0.34	0.45
Minimum	3.17	3.33	2.38	2.20	2.43	3.33	2.83
Maximum	4.33	4.67	4.31	4.80	4.86	4.33	4.38

Table 3. The Wilder Collaboration Factors Inventory: Collaborative Factors Ordered by Standardized Mean.

Collaboration Factor (Subscale category)	**Statement**	**Collaborative Factor Standardized Mean**
Skilled leadership (Resources)	• The people in leadership positions for this collaboration have good skills for working with other people and organizations.	4.67
Mutual respect, understanding and trust (Membership characteristics)	• People involved in our collaboration always trust one another • I have a lot of respect for the other people involved in this collaboration.	4.44
Members see collaboration in their self interest (Membership characteristics)	• My organization will benefit from being involved in this collaboration	4.33
Favorable political and social climate (Environment)	• The political and social climate seems to be "right" for starting a collaborative project like this one. • The time is right for this collaborative project.	4.22
Shared vision (Purpose)	• The people in in this collaborative group are dedicated to the idea that we can make this project work. • My ideas about what we want to accomplish with this collaboration seem to be the same as the ideas of others.	4.00
Open and frequent communication (Communication)	• People in this collaboration communicate openly with one another • I am informed as often as I should be about what goes on in the collaboration. • The people who lead this collaborative group communicate well with its members.	3.93
Appropriate pace of development (Process and structure)	• This collaborative group has tried to take on the right amount of work at the right pace. • We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project.	3.83
Established informal relationships and communication links (Communication)	• Communication among the people in this collaborative group happens both a formal meetings and in informal ways. • I personally have informal conversations about the project with others who are involved in this collaborative group.	3.83
Flexibility (Process and structure)	• There is a lot of flexibility when decisions are made; people are open to discussing different options. • People in this collaborative group are open to different approaches to how we can do our work. They are willing to consider different ways of working.	3.83
Members share a stake in both process and outcome (Process and structure)	• The organizations that belong to our collaborative group invest the right amount of time in our collaborative efforts. • Everyone who is a member of our collaborative group wants this project to succeed • The level of commitment among the collaboration participants is high.	3.81
Ability to compromise	• People involved in our collaboration are willing to	3.78

(Membership characteristics)	compromise on important aspects of our project.	
Unique purpose (Purpose)	• What we are trying to accomplish with our collaborative project would be difficult for any single organization to accomplish by itself. • No other organization in the community is trying to do exactly what we are trying to do.	3.78
Development of clear roles and policy guidelines (Process and structure)	• People in this collaborative group have a clear sense of their roles and responsibilities. • There is a clear process for making decisions among the partners in this collaboration.	3.72
Adaptability (Process and structure)	• This collaboration is able to adapt to changing conditions, such as fewer funds than expected, changing political climate, or change in leadership. • This group has the ability to survive even if it had to make major changes in its plan of add some new members in order to reach its goals.	3.72
Concrete, attainable goals and objectives (Purpose)	• I have a clear understanding of what our collaboration is trying to accomplish. • People in our collaborative group know and understand our goals. • People in our collaborative group have established reasonable goals.	3.67
History of collaboration or cooperation in the community (Environment)	• Agencies in our community have a history of working together • Trying to solve problems through collaboration has been common in this community. It has been done a lot before	3.61
Collaborative group seen as a legitimate leader in the community (Environment)	• Leaders in this community who are not part of our collaborative group seem hopeful about what we can accomplish • Others (in this community) who are not part of this collaboration would generally agree that the organizations involved in this collaborative project are the "right" organizations to make this work.	3.61
Appropriate cross section of members (Membership characteristics)	• The people involved in our collaboration represent a cross section of those who have a stake in what we are trying to accomplish • All the organizations that we need to be members or this collaborative group have become members of the group.	3.44
Sufficient funds, staff, materials, and time (Resources)	• Our collaborative group had adequate funds to do what it wants to accomplish • Our collaborative group has adequate "people power" to do what it wants to accomplish	3.44
Multiple layers of participation (Process and structure)	• When the collaborative group makes major decisions, there is always enough time for members to take information back to their organizations to confer with colleagues about what the decision should be. • Each of the people who participate in decisions in this collaborative group can speak for the entire organization they represent, not just a part.	3.28

Table 4. Qualitative Themes.

Question	Themes	Number of responses
How do you think the IPFRs can be improved?	Involve additional team members including the family, other professionals, community partners	4 responses
	Focus on practical advice, resources, and guidelines	4 responses
	Share success stories	2 responses
What has changed in your practice or your ability to provide support services for families since the IPFR started?	Helpful suggestions and practical tools are shared that I may be able to use with families.	8 responses
	I am able to see a different perspective based on new knowledge.	5 responses
	I receive needed encouragement and support for my work.	3 responses

Appendix A

Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel, May 2011

Sponsored by the Interprofessional Education Collaborative

- Work with individuals of other professions to maintain a climate of mutual respect and shared values.
- Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served.
- Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.
- Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient/population-centered care that is safe, timely, efficient, effective, and equitable.